# Computerization always promotes centralization even as it promotes decentralization

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David Golumbia presents four reasons why he considers "hacker" groups such as Anonymous right-wing activism, states that in the regime of computation today the mathematical rationalism of Leibnitz has prevailed Voltaire's critical rationalism, and proposes a FDA for computer technology. He doesn't see the Internet

as Habermasian "public sphere," considers Digital Humanities a 'perfect cyberlibertarian construct,' bemoans the capitulation of universities to new media corporations, and calls for a balance of both modes of thinking, the hedgehog and the fox, in the digital age.

## Prelude

**Roberto Simanowski:** What is your favored neologism of digital media culture and why?

**David Golumbia:** My least favorite digital neologism is "hacker." The word has so many meanings, and yet it is routinely used as if its meaning was unambiguous. Wikipedia has dozens of pages devoted to the word, and yet many authors, including scholars of the topic, write as if these ambiguities are epiphenomenal or unimportant. Thus the two most common meanings of the word— "someone who breaks into computer systems," on the one hand, is by far the most widely-understood across society, and "skilled, possibly self-taught, computer user" on the other, is favored to some extent within digital circles—are in certain ways in conflict with each other and in certain ways overlap. They do not need to be seen as "the same word." Yet so much writing about "hackers" somehow assumes that these meanings (and others) must be examined together because they have been lumped by someone or other under a single label. Today, "hackers" are bizarrely celebrated as both libertarian and leftist political agitators, "outsiders" who "get the system" better than the rest of us do, and consummate insiders. My view is that this terminological blurring has served to destabilize Left politics, by assimilating a great deal of what would otherwise be resistant political energy to the supposedly "political" cause of hackers, whose politics are at the same time beyond specification and "beyond" Left-Right politics.

**RS:** Could we then, in allusion to Geert Lovink's book title and complaint *Networks Without a Cause*, speak of hacktivism or rather hackerism without a cause?

**DG:** In my mind, much of what is celebrated as "political activism" by "hacker" groups such as Anonymous is more easily parsed as right-wing than as left-wing activism, but because it gets labeled "hacker" people are hesitant to read the actual politics for what they are.

**RS:** Why do you see this as right-wing activism?

**DG:** I consider it right-wing for four reasons: first, because the issues on which it focuses are usually ones on the agenda of the far right (the dissolution of the state, the celebration of individual freedoms over social equality, and a diminished focus on the dangers of concentrated capital); second, because to the degree that hackers declare overt politics, they are usually those of right libertarianism; third, because its culture is so retrograde with respect to Left issues, such as gender and racial equality; fourth, because it celebrates power, both at the individual and personal level, and often celebrates its exercise without any discussion of how power functions in our society. These last two both mitigate, for me, the partially leftist appearance of the anti-rape and anti-pedophilia campaigns sometimes engaged in by Anonymous and others. This is made more bizarre by the fact that the term "hacker" was first popularized in the "skilled computer user" meaning and that among the most famous hackers were Bill Gates, Paul Allen, Steve Jobs, and Steve Wozniak. "Hacking" is supposed to be counter-cultural and resistant to capital, say some on the Left, but many tech business leaders today call themselves hackers; not only does Mark Zuckerberg call himself a hacker, but Facebook makes "hacking" a prime skill for its job candidates, and all its technical employees are encouraged to think of themselves as "hackers."

I have begun some work in which I try to disambiguate the "technical" definitions of "hacker" from its actual deployment in social discourse, and my tentative conclusion is that "hacker" means something like 'identified with and desirous of power, and eager to see oneself and have others see oneself as possessing more power than others do.' That isn't what I see as a welcome political formation. I don't think the criticism I am making here is

quite the same topic about which Lovink is writing in *Networks Without a Cause*, as his subject there is what Evgeny Morozov and others have called "slacktivism," or the belief that one is causing or contributing significantly to political change by communicating over social media. At least in those cases, the causes to which one is committed are often clear, even if the results of one's actions are not always clear at all. With "hacking," I am concerned about something closer to effective action that takes on a cloak of Left-oriented social justice and equity concerns, but in fact tends much more clearly to serve Right-oriented interests; I see this concern as the reason Barbrook and Cameron, Borsook, and Winner identified the notion of "cyberlibertarianism," about which I've written a fair amount recently in terms of its impact on Left political goals.

**RS:** If you could go back in history of new media and digital culture in order to prevent something from happening or somebody from doing something, what or who would it be?

**DG:** I can't help but find it very interesting to imagine what the Internet would be like today if in 1991 the Commercial Internet Exchange (CIX) had not been established and the High Performance Computing Act had not been passed, and the Internet remained generally off-limits for commercial usage. I think we would today have a wonderfully useful set of tools some of whose problems would not exist or would be substantially mitigated, and I think we would have much less techno-utopianism: especially the suggestion that if we just let capital do what it wants and get out of the way, all of our problems will be solved.

## Politics and Government

**RS:** Speaking of the internet's commercialization, while in the 1990s Internet pioneers such as John Perry Barlow declared the independence of Cyberspace from the governments of the old world, now it seems people hope for governments to intervene in the taking-over of the Internet by huge corporations such as Google and Facebook.

**DG:** I always saw the rejection of government as unwelcome and part of a general pro-corporate and often explicitly libertarian rejection of core values of democratic governance. Government is and has been the only effective guarantor of egalitarian values that I know of in our world. Libertarians attack this principle specifically; their pro-business philosophy targets places where democratic processes, up to and including rulings of the US Supreme Court, suggest that Constitutional principles require regulatory and statutory guarantees of equality. I am not sure I see yet a robust enough recognition that a rejection of government is itself a rejection of almost the entirety of democracy in any coherent form in which it's been articulated, and that the result of rejecting it can only be massive concentrations of power and capital.

**RS:** Given the different perspective on the role of the government in society in the US and in, say, Germany one wonders how the Internet would have developed if it had been invented in Europe.

**DG:**  I know much more about the US than about the European context, but my impression is that Europe would have been much more cautious about the commercialization of the Internet, which I think would have been a much better way to run the experiment. Some European countries often have robust rules about the "right to representation" or the notion that individuals "own" any or all data about themselves, and having built out the Internet with that as a foundation would, to my mind, have been preferable.

**RS:** While for some time and to some people its gift economy imperative let the Internet appear as the last resort of communism, it meanwhile has become a playground of neo-liberalism even centralizing an important public good such as knowledge in the hands of a private company such as Google. In his book *The Googlization of Everything (And Why We Should Worry)*, Siva Vaidhyanathan speaks of Google's "infrastructural imperialism" and calls for the public initiative of a "Human Knowledge Project" as "global information ecosystem". Aware of the utopian nature of his vision, Vaidhyanathan adds that Google has been

crowding out any imagination of alternatives, and achieving this not least—and ironically—by virtue of its reputation for building systems that are open and customizable -- so far. Should we mistrust the positive record and worry? Would the US government or the European Union ever have been able to carry out something like Google's book project? Should –and could– they run a search engine free of advertisement and with an algorithm visible to all who care?

**DG:** We should worry, and though I agree with Vaidhyanathan in many ways, there are some ways in which I think the critique needs to go deeper. The Internet was never a bastion of communism, not without a kind of thoroughgoing establishment of foundations which it never had, and certainly not once the restrictions on commercial use were lifted. At some level I think some kind of public accountability for central mechanisms like search is absolutely imperative, though what forms these can take are not at all clear to me, since exposing parts of the search algorithm almost necessarily makes gaming search engines that much easier, and gaming seems to me a significant problem already. Computerization is always going to promote centralization even as it promotes decentralization—often in one and the same motion. Advocates of decentralization are often almost completely blind to this, directly suggesting that single central platforms such as Facebook, Wikipedia, Twitter and Google "decentralize" as if this somehow disables the centralization they so obviously entail.

This is therefore a set of problems created in no small part by the promulgation of ubiquitous computing itself. At this level I am not sure that having Google search be "owned" by the public or a private corporation makes that much of a difference, although the arguments for it being a public resources (as advanced by legal scholars such as Frank Pasquale and others) I find persuasive, and the existence of governmental communications systems in the past, despite right-wing attacks on them, is compelling evidence that governments can run such systems not just efficiently but also with respect for the equality interests

inherent in such systems (that is, the US Postal Service, under constant attack from Republicans, not only works well, but provides services at low cost to populations to whom the provision of services is not economically advantageous).

Centralization is one problem, and I believe we need a much more robust and thoughtful critique of the tendency toward centralization itself: that regardless of its benefits, its drawbacks are more serious than most commentators want to admit. Wikipedia, in my opinion, which in many ways resembles the Human Knowledge Project, is of great concern to me precisely because it intends to be and has partly succeeded at being *the* single site for the totality of human knowledge, and I think there are compelling reasons to suggest that the very idea of a single site for the totality of human knowledge is itself politically suspect, despite its benefits. This is an abstract-level concern, like my concern with Google, that does not have much to do with the actual character of particular Wikipedia pages or the results of particular Google searches, but with a question more like that of monopolies and antitrust. In the heyday of antitrust jurisprudence in the US, it was widely-acknowledged that monopolies of various sorts over any part of the market were inherently unwelcome. Today, under the influence of highly interested parties who themselves want the advantages of concentrated economic power, that thinking has been almost entirely cast aside, and I think it is today needed more than ever, or at least as much as it was in the days of Standard Oil.

## Algorithm and Censorship

**RS:** The numbers of views, likes, comments and the Klout Score –as measure of one's influence in social media– indicate the social extension of the technical paradigm of digital media: counting. The quantification of evaluation only seems to fulfill the "cultural logic of computation" as the title of your 2009 book reads that addresses the aspiration in politics and economics to organize human and social experience via computational processes. The desired effect of counting is comparison and ranking

which allows for determining normality and detecting deviance with the effect of predicting, controlling and disciplining human action. However, the effort to measure and classify dates back to at least the Enlightenment and is part of a modern understanding of nature and society. Is computationalism hence nothing more than the continuation of the epistemic logic of modernity by new means after the intermission of postmodern ambiguity and relativism? Where do you see the problem of this concept?

**DG:** You write: 'the effort to measure and classify dates back to at least the Enlightenment.' That's true. The point of my book is not to deny the effectiveness or importance of quantification; it is to dispute the view that its methods are the only ones that apply to the human sphere. As I briefly discuss at one point in the book, with the Enlightenment comes both the view, most usefully and tellingly associated with Leibniz, that human reason is entirely a function of what we call in a narrow sense rationality—that is, the view that everything in the mind, or everything important in society, can be reduced to mathematical formulae and logical syllogisms. Against this, we have what is sometimes thought of as the "critical rationalism" of Voltaire, a more expansive version of rationalism that recognizes that there are aspects to reason outside of calculation, which in Voltaire's case might include phenomena like irony, skepticism, and a certain humility about the potential of human beings to grasp the totality of experience.

More recently, Derrida encourages us to use the term "reason" in place of this more expansive notion of "rationality," pointing out how frequently in contemporary discourse and across many languages we use the word "reasonable" to mean something different from "rational." I argue in my book that the regime of computation today encourages the narrow view of rationality—that human reason is *all* calculation—and that is discourages the broader view, that reason includes other principles and practices in addition to calculation and logic. I believe some versions of "modernity" tilt toward one, and some tilt toward the other. Projects to quantify the social—including Klout scores, the quantified self, and many other aspects of social and predictive

media—advertise the notion that calculation is everything. I think we have very serious reasons, even from Enlightenment and modernist thinkers, to believe this is wrong, and that historically, regimes that have bought into this view have typically not been favorable to a politics of egalitarianism and concerns with broad issues of social equality. My hope is that the pendulum is swinging very far toward the calculation pole, but that eventually it will swing back toward the broader view of rationality, recognizing that there are dangers and fallacies inherent in any attempt to thoroughly quantify the social.

**RS:** The notion that quantification undermines egalitarianism seems paradoxical, since one could argue numbers, by nature, symbolize equality. Think, for example, of the one head-one vote rule today in contrast to previous restrictions on the base of certain qualities: possession, education, gender, ethnos. What is your concern?

**DG:** I just don't agree that 'numbers by nature symbolize equality' and I'm not sure how or why one would assert that. Numbers are abstract objects that can symbolize and enforce inequality every bit as much as equality. The one person-one vote rule is a numerical system designed to ensure equality; the one-property owner-one vote rule that the US had in its early days was a numerical system that ensured inequality (as was the "3/5 compromise" under which slaves counted as less than other members of the population for purposes of democratic representation). Further, the reduction to calculation, which is what I talk about—the view that everything can and should be reduced to numbers, particularly when it comes to the social world—has historically been associated much more with Right than with Left political systems, as I discuss at length in my book.

**RS:** Your book seems to confirm the technological determinism explored, for example, in Alexander Galloway's *Protocol. How Control Exists after Decentralization* (2006) and shares his call for resistance which itself is repeating the call to resist the tyranny of transparency by fog and interference proposed in Tiqqun's "The Cybernetic Hypothesis" (2001) and before by

Deleuze in his discussion with Antonio Negri „Control and Becoming". How do you see today the option to undermine computation and cybernetics as the central means of unlimited rationalization of all human activity in contemporary society?

**DG:** I take "technological determinism" to be the view that the form of a given technology inherently, and to a large extent regardless of human intervention, shapes society. Using that definition, I would disagree strongly that my book, Galloway's, and the other works you mention endorse technological determinism—quite the opposite in fact. While I think Galloway and I would agree that certain technologies tend to come with implicit politics, these have often been formed by the developers of the technology, and are always or almost always subject to the social matrices in which those technologies are embedded, and the technologies themselves are largely shaped by those social matrices. I agree with Galloway's suggestions about the "tyranny of transparency." To me the way to resist that is to put politics and social good above other values, and then to test via democratic means whether technological systems themselves conform to those values. When they don't, even if they are fun, attractive, addictive, or even very useful, it seems to me we have an obligation as a society to consider limiting or even rejecting those technologies. Otherwise the deterministic factors become all about the market—what can be sold to us, using the most advanced technical means possible to determine what we are least able to resist. That is a tyranny of the market that is antithetical to democracy. I believe we have built a technical system that solicits and captures far too much information about us, and that the only solutions to the enormous problems that it causes are to scale the system itself back, however contrary to received wisdom that may sound. Further, the fact that we are generally prohibited even from considering any such scaling-back of technology as long as a small enough group of people wish to purchase it—witness here the controversy over attempts to regulate or perhaps prevent the distribution of Google Glass, and the extremely arrogant insistence on the part of Google itself

and many early adopters that only they have the right to decide whether the technology is acceptable, even if it has detrimental effects on many other people.

**RS:** Google Glass may be a good example of what I mean by technological determinism and why I am skeptical regarding the prospect of human interventions. You are completely right, Google Glass, as much as Facebook and other new communication technologies, has been formed by developers who more or less represent certain social practices or desires. Given the age of many programmers and their longing to be the next teenage millionaire by coming up with the right app, one wonders to what extent they fulfill social desire and to what extent they produce it. However, my notion of technological determinism alludes to McLuhan's notion that first we shape technology and then technology shapes us. Hans Jonas, in his book *The Imperative of Responsibility: In Search of an Ethics for the Technological Age*, basically repeats this assumption, stating that human power over nature has become self-acting and has turned man into a "compulsive executer of his capacity". Isn't the development of Facebook (its imperative of radical transparency) and the invention of Google Glass (its aim to have the computer and Internet as handy as possible) the inevitable expansion and consequence of what has been created before? To put it this way: When does the cultural logic of computation turn into the logic of technology itself with the result that technology is no longer caused by culture but rather determines it?

**DG:** Technologies, especially once they are released, absolutely do exert shaping powers on society. Where I part ways is on the question of "inevitability." It is not inevitable that the democratic citizenry should or will accept Google Glass; it was not inevitable that we accepted nuclear power (and we could have accepted it much more than we have); it was not inevitable that the Internet would be commercialized; it is not inevitable that Facebook (at least in something like its current form) is legal, not least for the reasons you mentioned earlier regarding European law, which differs from US law in some important respects regarding the

kinds of representations found on Facebook. Television itself was structured by a range of legal and engineering decisions which could have been handled differently. McLuhan is an extremely gnomic thinker, as he not just admits but openly embraces, and it's not always clear how to take some of his statements—even in "the medium is the message," it's not clear which aspects of "the medium" count as "the medium" and which don't. One of the main targets of libertarians in the US is the Food and Drug Administration (FDA), which they believe "impedes innovation." I think the history of the FDA is very clear, and that we have been well-served by having a democratically-empowered body of experts and citizens determine whether or not a particular drug is more harmful than beneficial. Computer technologies are now openly advertised as having life-altering effects as extreme as, or even more extreme than, some drugs.  The notion that such powerful technologies must be allowed to proliferate subject only to the "regulation" of the market only fits into libertarian ideas of democracy, and I think and hope that we will reach a point where we understand that democratic constraints on technology are not merely welcome but necessary. Another area where this exact issue is raised is drones. Right now, in the US, FAA and other regulations prohibit most kinds of drone use (other than in military operation). There is nothing inevitable about the question of whether these laws change, and if they don't change, the future will be very different than if, as techno-libertarians demand, the laws are removed and drone operators are just allowed to do as they like.[1] And I do think, following the FDA model, that it is critically important to have democratic regulation of at least some technologies prior to their release, as well as some kind of democratic review of technologies after they have been released. I do not think it is out of the question, for example, that the EU and/or the US will, eventually, prohibit certain parts of the functionality today associated with Facebook.

**RS:** A FDA for digital media seems to be as reasonable as the FDA is. In Germany there is discussion whether one should create a ministry of the Internet. Of course, there would, especially

in the US, be much objection against any regulations. And sure enough there would be references to John Stuart Mill's Essay *On Liberty* and warnings against any kind of 'nanny statecraft' that claims to know better what is good for its citizens – who themselves may find Google Glass just cool and convenient but a bit pricey. However, another 'message of the medium' – and request for the digital media FDA – is customization which causes the loss of chance encounters, the preclusion of the unfamiliar, the removal of diversity and of what we are not (yet). This becomes problematic once people are addressed not as consumers but as citizens expected to be open to others instead of cocooning in their bubble. Hence, personalization, driven by economic force, is political. Are the actual policy makers in the digital media age those who program ego-loops, inadvertently undermining the foundation of a democratic society?

**DG:** My short answer to your question is a resounding yes. This is a major concern of mine and other critical thinkers about the Internet. Rather than looking at the machine (at websites, Twitter streams, Facebook chats, etc.) to see evidence of "democratization," we should be looking at society itself to see the direction in which it is moving. There is some to my mind highly tendentious research suggesting that certain kinds of anti-authoritarian protest movements may be fueled by the introduction of Internet and mobile telephone communication (mostly in the "Arab Spring"), but this is very different from the question of how such technologies impact existing and deeply embedded democracies. If we look at the period from the early 1990s to the present day in the US, for example, this coincides with one of the most dramatic shifts to the political Right in our history. To be sure this shift started in the 1980s and included many forms of media such as television and radio, but it is absolutely clear that the introduction of the Internet did very little to stop that shift.

Further, it is startling how much the organizational materials of the political Right worldwide sound almost identical to that of the Left, in praising digital and mobile technology as enabling the realization of its political goals. This to me embodies one of

the deep paradoxes in Internet evangelism: on the one hand, it says, print and other forms of information technology enabled or even created democracy; on the other, it says, these technologies were insufficient, and something new is needed that jettisons many of the affordances those older technologies had. At worst, one can imagine folks like Jeff Jarvis and Clay Shirky in 1776 saying to Benjamin Franklin, "if only you had the Internet, you'd be able to really have a democracy." This seems like a willful misreading of history to me, one that happens to converge with some very powerful commercial interests.

As your question suggests and as the work of scholars like Matthew Hindman implies, for many different reasons the Internet does not "force" individuals to engage with a wider array of political opinions and in many cases makes it very easy for individuals to do the opposite. Thus we have a new kind of centralization that is not itself regulated in the way that the public service provision of news by the much-derided "big three" television networks in the US of the 1960s and 70s were. There, the centralization was acknowledged and a variety of voluntary and legislative measures were taken to ensure these centralized services fed the public interest—and at that time we had a very robust and very interactive political dialogue in the US. Today, we have unacknowledged and entirely unregulated centralization, and among the most partisan, divisive, and uninformed political discourse in the US that we have ever seen, in part due to the utopian rhetoric that says Internet media is democratizing in a way no other media has been before.

**RS:** From a German point of view, I can confirm your perspectives with regard to Jürgen Habermas, whose 1962 book *The Structural Transformation of the Public Sphere: An Inquiry into a Category of Bourgeois Society* is often mistaken as a blueprint for the democratic sphere of the Internet. However, in his essay "Political Communication in Media Society: Does Democracy still have an Epistemic Dimension? The Impact of Normative Theory on Empirical Research" (in his 2008 book *Europe: The Faltering Project*), Habermas himself considers the asymmetric system

of traditional mass media the better foundation for a delibera-
tive, participatory democracy than the bidirectional Internet.
The Internet, he concedes, undermines the old gate-keeping and
allows everybody to participate in the discussion. However, the
fragmented public sphere online obstructs an inclusive and rig-
orous debate of the cons and pros of a specific issue and thus
does not foster a well informed political engagement.

**DG:** I agree with this very much. There is a great deal in
Habermas that calls into question the easy adoption of his work
to the Internet as if it is a realization of his "public sphere."
Further, while I am no huge supporter of network television, I
find the cribbed accounts of political discourse under the "big
three" to be highly contrary to history, both in terms of individ-
ual behavior and overall politics. People in general were *more*
informed in the 1960s and 1970s than they are today; they were
less tolerant of absolutely crazy, fact-resistant political inter-
ventions; politics was more productive. I'm not saying this was
caused by the networks (although having 3 sites of informa-
tion about which everyone conversed excitedly may not have
been such a bad thing, and is "participatory" and "interactive"
in many important senses that Jarvis, Shirky, Jenkins and oth-
ers dismiss far too quickly), but that the idea that the Internet
"democratizes" political discourse seems contravened by the fact
that political discourse has become notably less rich, less inter-
active, more divided, and less productive than it was under ear-
lier media regimes.

**RS:** Early 2016 one may even ask to what extent it is the distrac-
tion and dispersion of the audience on the Internet that allows a
person with the discourse quality of Donald Trump to become a
presidential candidate.

## Art and Aesthetics

**RS:** People have said that art in or of digital media must be
political even if its intentions are to be utterly formalistic. If
art is based on technology the focus on form draws attention to
how technology works and this is already an act of reflection or

education. From this perspective, one would assume that digital art and literature are art and literature that address the politics of digital technology. What is your experience in this regard?

**DG:** I would never say art "must" be anything. "Art," whatever that is, serves many different purposes, including frequently, no particular purpose at all, other than "being." Art may be used or not used for any number of purposes, intended or not intended by its creators. What resonates for me in this question is the huge amount of digital art that takes as its subject the operation of digital technology itself. I think art can be successful if and when it addresses politics, though it certainly does not need to. Art that addresses digital politics, which at this point includes many ordinary novels and short stories as well as more overtly digital forms, can be as successful as any other art, however we define "success." But there is absolutely a considerable amount of digital art whose purpose appears to be mainly or entirely the demonstration of the capabilities of digital tools. This art strikes me as completely formalist, devoid of any overt politics, and usually lacking any emotional or aesthetic content with which audiences can connect. The inherent politics of such work seems to be to exalt the wonders of the digital world, and for the most part I don't find that a particularly promising direction for the arts to take—it almost functions as a kind of advertisement for Photoshop or for HTML 5 or whatever technology the work is created in, and it is rare that technology demos work, at least for me, in the same register that functions for me as aesthetic, no matter how broadly conceived. It is certainly the case that some of the best digital art (Jodi, Shulgin, Mark Napier, Pall Thayer, Rafael Rozendaal) reflects in various ways on the condition of the digital, but that rarely if ever appears to be its overriding concern.

**RS:** To take your skepticism on just flexing the technical 'muscles' even further, one could say this kind of digital art carries out the shift from the culture of meaning to the culture of presence promoted, for example, in Hans Ulrich Gumbrecht's 2004 book *Production of Presence: What Meaning Cannot Convey.*

Though, Gumbrecht does not discuss new media, he considers the '"special effects" produced today by the most advanced communication technologies' as possibly 'instrumental in reawakening a desire for presence.' In this aesthetic theory for the 21st century desire for presence favors materiality and intensive moments over interpretation. The agreeable argument may be that one should not resist the physical and aesthetic pleasure of an artwork by reducing its energy, vitality, and expressiveness to a particular proposition, as Susan Sontag famously stated in her essay "Against Interpretation" in 1964. The problematic consequence, however, is the sheer affirmation of the That without the question for the Why let alone questioning the That. As Gumbrecht puts it fairly clearly, being in sync with the 'things of the world' relieves us of the obligation to better ourselves and the world around us. It is obvious how far this aesthetics has moved from Adorno's notion of art as estrangement and of thinking as negation of the status quo. I wonder to what extent the formalist version of digital art and the contemporary aesthetic theory more or less unconsciously collaborate to step beyond the critical perspective on society you address in your answers above.

**DG:** I quite like this line of thinking, and it resonates to me to some extent with my experiences in teaching; reading the most breathless of techno-utopians, one might imagine that today's "digital natives" would be almost uniformly enthusiastic about thoroughgoing computerization and the many digital gadgets and effects they live with. Instead—and with the notable exception of very computer-identified hacker and proto-hacker students—I find much the opposite. I find the students, as you suggest, hungry in an intuitive but often explicit sense for the kind of embodied, present experiences for which the digital is usually a mediation, impatient with the tools and their own absorption in them, impatient even with the emphasis on special effects in cinematic media. Though my students are a subset oriented toward literary study, there are many very digitally-fluent folks among them, and I am continually surprised and heartened by the number of them who are deeply skeptical about the wonders

being continually sold to them, and who seem to have a fairly good grasp on certain aspects of human experience (the body, face-to-face socialization, relationships, issues of life and death) that writers like Jarvis and Shirky appear to want us to think are vanishing entirely. This also seems to me to connect to the ideas of David M. Berry and Bernhard Stiegler and others, that the plasticity of "human nature" itself to some extent guarantees a building and/or rebuilding of what they (somewhat mechanistically for my taste; like your other interviewee Mihai Nadin, I am a great admirer of the anti-mechanistic biological theories of Robert Rosen) call "long circuits."

## Media Literacy

**RS:** What comes to mind if you hear "Digital Media Studies"? or "Digital Studies" or "Web Studies"?

**DG:** These are names for existing and valuable fields of academic study. I am concerned that they don't actually name usefully discrete areas of social practice, so that people who go to school now to do "digital media studies" may license themselves to omit huge amounts of cultural practice (chiefly, that which occurred before the mid-1990s, and that which does not occur on a screen), and that these omissions end up not just informing but even structuring the work done by such investigators. You can't understand human culture well by restricting yourself to such a narrow time period. That has been a problem for subfields of Media and Communication Studies to begin with, and a narrow focus on "digital media" threatens to be even worse.

**RS:** In your book and in your answers above you argue against techno-utopians praising the Internet as a road to more democracy and urge we need to notice and address the ethical, cultural and political costs of computing. What role do or should institutions of elementary and higher education play in this regard? Are Digital Humanities of help or – if replacing interpretation by algorithm, hermeneutics by statistics – rather part of the problem?

**DG:** The 2013 MLA-conference contained the panel "The Dark Side of the Digital Humanities" which is being followed up with a special issue of *differences* called "In the Shadow of the Digital Humanities," in which I have an essay called "Death of a Discipline."  Part of what I argue in that essay is that Digital Humanities is a kind of perfect cyberlibertarian construct—on the one hand, it tells us, it is a method that says nothing about politics; on the other hand, it attracts and often promotes a very specific politics that is deeply at odds with other understandings of the humanities. One aspect of that politics is a resistance to teaching about the core political and politico-philosophical issue that ground any serious understanding of the nature of society and of civic organization. As such, while I am generally in favor of teaching about the "ethical, cultural, and political costs of computing," I consider it more urgent simply to return to teaching ethics, politics, and cultural politics in a much more thoroughgoing way. In too many ways the advent of the computer has enabled a turning-away from such matters throughout the educational system, in favor of a "skill-based" program that is largely a political front—a way of teaching one politics above all others, one that does not even admit the possibility of dissent. Too often the "ethical, cultural, and political costs of computing" are taught from a single, packaged perspective: that "hackers" and "Hacktivists" like Anonymous, Barrett Brown, Jacob Appelbaum, Aaron Swartz, Andrew Auernheimer, Julian Assange and others constitute a site of meaningful resistance to the social costs of computing. From my perspective, they are part of the orthodox view, a pre-scripted site of self-described resistance that is in fact much more continuous with than opposed to the concentration of power. Power is the topic that needs to be addressed throughout the educational system in a much more resistant way than it currently is; these hackers for the most part advocate the use and concentration of power (in their own persons and institutions rather than those they dislike), and political theories that attract me are those that inspire us to resist the accumulation of power in the first place, and its careful, ethical, and judicious use when its use is required.

**RS:** It has been argued – for example in Berry's 2011 *The Philosophy of Software* – the computational turn in the Humanities could convert the referential totality of human life into a computational 'knowing-that' and knowing how to transform subject matter through calculation and processing interventions. Does Digital Humanities foster the computationalism you address in your book and discussed above with respect to Leibnitz and Voltaire as representatives of two quite different views in the Enlightenment on human reason? Burdick, Drucker, Lunefeld, Presner, and Schnapp in their 2012 book *Digital_Humanities* (which you have written about on your Uncomputing blog) see Digital Humanities as an ambassador of the Humanities bringing the 'values, representational and interpretative practices, meaning-making strategies, complexities, and ambiguities of being human into every realm of experience and knowledge of the world.' Does Voltaire still have a future after Leibnitz succeeded so fundamentally with his idea of algorithmic machines and formal logic? Or do we have to understand the computational turn as the rejection of Voltaire's irony and skepticism that has thrived for two or three decades in the name of postmodernism?

**DG:** In my book and in everything I write and say, I try to make clear that my intent is not to eradicate the Leibniz line of thinking, but to suggest that its prominence today makes the Voltaire line extremely hard to see, and that we desperately need both. Not just that, but Voltaire, Swift, and others show the profound danger in the univocal adoption of the Leibniz line—this is something we have known for hundreds if not thousands of years, and it's hard-won knowledge and wisdom, and the fact that we do seem on the verge of forgetting it today is part of what makes the digital revolution frightening. The two books you mention are interesting, because I see Berry as advocating a view that I cannot discount entirely—that a new version of the Voltairian critical reason will emerge as a part of and reaction to widespread computerization. I see this view also in the thought of Stiegler, and I hope it's correct and keep looking for evidence that it may be. On the other hand, the Burdick et al *Digital_Humanities* book strikes

me as disheartening evidence in the other direction; I see it as asserting exactly that the Leibniz way of thinking overcomes and makes unnecessary the Voltaire line, and in this sense it comes close to arguing many times that the activities we associate with humanistic practice should be replaced by computation; one notes how rarely anything in that book can be construed as positive commentary on what it repeatedly slurs as "traditional" humanistic practice, including any kind of humanistic scholarship that does not celebrate the digital as utterly transformative.

**RS:** Since you mention Bernard Stiegler, in his 2008 article *Is Google making us stupid?* and later in his 2011 book *The Shallows – What the Internet is Doing to Our Brains*, Nicholas Carr discusses the consequences of online media for literacy. From Carr's perspective, multitasking and power browsing online make people unlearn deep reading with the effects being carried offline, and with the result that they also unlearn deep thinking. Stiegler certainly shares such perspective and even sees the destruction of young people's ability to develop deep and critical attention to the world around them as a threat to social and cultural development. What is your take on this?

**DG:** I take Carr's concerns very seriously. I find the reaction to it among the digerati to be too colored by one form or another of a quasi-religious faith in computerization. I think there is lots of empirical evidence to suggest that what Carr is worried about is actually taking place—that certain kinds of political and cultural discourse are, in fact, quite a bit "shallower" than they were for most of the recent and even less recent past. I find Stiegler's comments on Carr to be among the most important interventions in this discussion we have to date. In addition to discussing him occasionally in several recent works, Stiegler offered a seminar in 2012 on Plato, a fairly significant part of which was devoted to Carr; the first session is called "From Nicholas Carr to Plato."[2] If I understand correctly, in addition to and to some extent against Carr's analysis, Stiegler makes two points that seem absolutely vital. The first is, essentially, about temporality: that the time of the digital is a kind of perpetual "now," one that continually

suggest a break with everything that has come before, and that this temporality interrupts "long circuits" that are somewhat akin to Carr's "deep thinking," but gain some specificity by being framed in temporal rather than spatial terms. The second is a point that I don't think anyone else has made, or at least has not made as clearly and as well: that even if we accept that digital media is having profoundly interruptive effects on human thinking (which I think Stiegler does, as does Carr, and I find it hard to disagree with this), we actually end up having a contradictory understanding of "the human" if we suggest that human beings will necessarily be unable to develop new "long circuits" that compensate for, and perhaps even extend, the capabilities that may be getting pushed aside at the moment. Rather than having faith in a deterministic technology that will itself "liberate" us from the problems it causes, and rather than dismissing the concerns of writers like Carr and Stiegler and Sherry Turkle and many others, this position allows us to imagine cultural and cognitive re-inscriptions of digital capabilities that recognize that some of what the digital currently pushes away may, in the longer run, be things we as a society do not want to abandon.

**RS:** This sounds as if the problem technology brings with it also containsentails the solution and will actually advance humanity by pushing to further advance develop its faculty of reason. To play the devils advocate(and to employ a different kind of dialectic), wouldn't it, rather than hoping that certain traditional human capabilities are not abandoned but re-inscribed, be exciting to see the loss as the actual win? In 2010 *Times*-Columnist Ben Macintyre compared the hyper-attentive, power-browsing disposition of the digerati with the fox in Isaiah Berlin's essay "The Hedgehog and The Fox" (1953) about the two modes of thinking. While the hedgehog, Berlin argues, 'relates everything to a single central vision, one system, less or more coherent,' the fox 'pursues many ends, often unrelated and even contradictory.' Berlin favors the fox, as does Macintyre who praises the Internet for turning all of us into foxes because to him – and to a certain extent also to Berlin – the hedgehog-thinking is totalitarian

and fundamentalist. Could we appreciate the loss of deep read-
ing from this perspective? As openness to different, even con-
tradictory information and standpoints and as rejection of any
new Grand Narrative; the prevalence of the database paradigm
over narrative.

**DG:** This is a complex question that I've addressed a bit in other
answers; I certainly hope that something like this is the case.
But I'm discomfited by the portrayal of "narrative" or what I'll
also call "interpretive" knowledge as "traditional" and there-
fore the database as forward-looking or avant-garde, among
other things. The current "fox" forms are ones promoted by
commercial power, as a form of political power; they are forms
that, whatever their tremendous power today, have been present
in human society from its earliest days. No doubt, "fox" think-
ing and "hedgehog" thinking each have their day; taken to the
extreme, either one can and will be destructive. But in my life-
time, I cannot remember moments when it seemed so possible, or
when we saw so many argue, that one side or the other had been
proven essentially irrelevant to human existence. The desire to
obliterate one side or the other is to me the mark of burgeoning
totalitarianism. To take the example clearest to hand: reports
by a variety of journalists and academics of working conditions
inside of Google itself do not appear, to me, to paint a picture
of a robust, rights-respecting, participatory culture. It is not a
sweatshop or coal mine, and it pays very well, but in many ways
the work culture of Google looks to me like the kind of totally-
surveilled, conformity-enforcing (in the name of "merit") work-
place imagined in dystopian films like *Gattaca*, and the fact that
many Google employees honestly think they know what is good
for the rest of society better than society itself does is very trou-
bling. A healthy democratic society needs a variety of strong
viewpoints in active conversation and even (political) conflict;
too much of what happens today appears particularly directed
toward eliminating these fundamental components of what I con-
sider freedom.

**RS:** Before the Internet became available for private and commercial use it was administered by the university. Today one has the impression the university is no longer on top of development in this domain. How should academic institutions have responded to the upheaval of new media? How should they become more involved today?

**DG:** Just as a point of fact, I believe universities were among several kinds of institutions that administered the Internet. On the one hand, referring back to the kind of democratic oversight of technological development that I have advocated above, I think universities have backed away from this and could and should do much more, and that in general it is quite difficult to find critical questions about digital technology being raised on US universities today with the same vigor they are raised about other cultural practices—although this is absolutely the kind of awareness and thought I try to encourage in my own teaching. On the other hand, that lack of criticism means that in another sense universities are too involved with computerization—they have, in many different ways, become active and often uncritical promoters of the technology industries, and somewhat often even act as salespeople for technology products.

Political forces in the US have worked hard to diminish any sense of civic or public good (to the extent that this is replaced with a kind of "open source" commons, it has become a vitiated and atrophied concept, one that is all about making resources available to the major information profiteers, like Google). My belief is that the Internet should never have been commercialized to the extent it has been, and this is not a matter for universities alone but for society as a whole. My view is also that higher education itself has been so compromised both by the attack on public goods and by intrusion of capital into spheres from which it was formally barred before, again largely without the consent of most of us involved in higher education, that we have been in many ways unable to provide the civic, intellectual, political and historical contexts that would have been necessary to form an adequate response to overwhelming technological change. Even

in the 1990s I don't think most of us imagined in any serious way that global capital could so overwhelm nearly every important institution of civic and public welfare in society, and it is hard to be surprised that academics, who often rightly remain focused on their narrow areas of study, were neither prepared nor really even in a position to mitigate these changes.

## Notes

1.  Making airspace available for 'permissionless innovation', The Technology Liberation Front April 23, 2013 - http://techliberation.com/2013/04/23/making-airspace-available-for-permissionless-innovation

2.  Terence Blake has done an admirable job translating the often dense proceedings of this seminar into English (http://terenceblake.wordpress.com/2012/06/24/translations-of-bernard-stieglers-seminar).