Jaron Lanier, *Who Owns the Future?*
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XANADU AS PHALANSTERY

The subtitle of Jaron Lanier's previous book, *You Are Not a Gadget*, declared it a manifesto. His latest book, *Who Owns the Future?*, is something of a utopia. But like More's original, its projections are entwined with a satirical-prophetic critique of existing conditions. As such, the position developed here is a slippery one: avowedly part Swiftian 'modest proposal', part diagnosis of a world in technical trouble, part plan of action for saving capitalism and its essential 'middle class'. In these pages Fredric Jameson has pondered upon the fate of utopianism in a global society dissociated into extremes of wealth and scientific miracle at one pole, and generalized misery at the other. A survey of the output of the 'merry band' of hippy pioneers who have been so influential in the shape and reception of American technology over recent decades probably ought to quell any concerns that utopia has left us entirely, even if a moment of its encounter with a historical agent capable of articulating it in terms of the 'social question' has passed. The present utopian horizon is lent most of its shape by the tech overlords and their courtiers: either the techno-eschatology of such 'singularity' faithful as Google's director of engineering, Ray Kurzweil—recalling the cosmism of early 20th-century Russia—or the more prosaic forecasts of a 'maker' future in which production will become ultra-cheap, ultra-flexible and ultra-distributed, opening the door to an infinite play of creative entrepreneurialism.

Though a fully paid-up member of the merry band in question, Lanier is troubled by the implications of such projections, and by the world that

produces them. In place of the blasé anti-humanism predominant in tech circles, he would like to enshrine a humanistic technological culture. And—given the growing centrality of technological mediations—he thinks that nothing less than the fate of capitalism may be at stake.

Born in 1960 to a concert pianist and a sci-fi author, Lanier grew up in the New Mexico desert in a 'new communalist'-style geodesic dome. It seems he was something of a prodigy, taking classes at New Mexico State University in his early teens, where he forged connections with luminaries of science and technology such as AI pioneer Marvin Minsky. As a teenager he hitchhiked to Mexico City to visit the avant-garde composer Conlon Nancarrow who had—after fighting in the Spanish Civil War—elected to live there in effective exile, rather than renounce his communist past in exchange for renewal of his American passport. Nancarrow's player-piano-based charting of unexplored rhythmic territories apparently primed Lanier's young mind for analogous adventures, and he began speculating about transcendence of the limits of mathematical notation and text-based computer code. After an attempt at starting a music career in New York, he ended up in the Bay Area in the early eighties, where he was quickly ensconced in the residual counter-culture of the moment—which had traded psychedelic mind-expansion and socio-cultural revolution for 'spirituality' and technological experimentalism. Lanier's attempt to create a graphical computer language, swapping the straight-laced commands of conventional programs for kangaroos, icecubes and birds, made the cover of *Scientific American* in September 1984. And from the mid eighties he became identified with Virtual Reality—the simulation of environments to be experienced immersively, often via a combination of goggles and wired 'data gloves'—as its preeminent evangelist. The VR hype definitively exceeded reality in the early nineties when his French creditors lost patience and called time on his loans, scooping up a raft of Lanier's patents in the process and leaving him railing against French 'socialism' and 'bureaucracy' in favour of a more freewheeling, American approach.

But he weathered those storms to remain a key tech-industry mover-and-shaker, 'blue-sky thinker' and regular contributor to *Wired* magazine. Lanier-related start-ups have changed hands for fairly sizeable sums: Eyematic, for example, where he was chief scientist, was sold on to Google in 2006 with one of Lanier's patents for an estimated $40 million. And consultancy gigs have given him an insider's angle not just on his Silicon Valley home turf, but also on some more tech-oriented Wall Street ventures. These days he works in research for Microsoft, but maintains a high-profile sideline in the distilling of idiosyncratic and often perceptive interventions, based on ideas developed over decades of techno-scientific speculation. And, as he likes to remind his readers, he's still a musician: perhaps more in the lineage of La Monte Young—and more 'world music'—than a literal follower of Conlon

Nancarrow's austere modernism, Lanier has turned out film scores and classical compositions, as well as performing with such figures as Terry Riley, Philip Glass and Yoko Ono. After three decades of media buzz it has become something of a cliché to refer to Lanier as a 'renaissance man' or 'visionary'.

You Are Not a Gadget (2010) wove together enduring Lanier themes—the fate of music and the musician in a digital world; scientific possibilities for a 'post-symbolic' communication; the disjunction between the banality of the technological mainstream and the open horizon of sci-fi possibilities we could be exploring—with an attack on various tenets of standard Silicon Valley thinking. Narcotized by ideologies of free/open source software and free culture, which were supposed to bring about a generalized hi-tech gift economy, America had sleepwalked into a situation in which the jobs and incomes of the 'middle class' in general, and creative/intellectual professionals in particular, were under threat while the lords of the computing clouds accumulated stratospheric fortunes from their 'meta' positions on these developments. These processes should not be understood deterministically, as unavoidable outcomes of technological progress, because software more than any other technology expresses its designer's worldview and decisions. Thus, while the 'lock-in' that comes with large systems is a real problem, it ought to be possible to rethink our technology—and the worldview it expresses—from the ground up. And a superior alternative to Silicon Valley machine-worship would be a romantic, humanistic orientation, attentive and open to the irreducibility of experience, promoting the place of the creative, productive individual, rather than consigning this figure to technological redundancy.

Who Owns the Future? is an extension of these arguments, going into greater detail in both its critique of the socio-technological present and its speculative vision of an alternative. Roughly the first two-thirds of the book are concerned with the former, while the final third focuses on sketching the latter, though Lanier eschews any straightforward structure of argument, cycling through a set of interrelated thoughts and often only fleshing out an idea several chapters after it has first entered the discussion. He also injects various playful digressions via a series of 'interludes', on subjects ranging through Aristotle and the ancient polis; the need for public ownership of basic infrastructure; a taxonomy of the 'humours' by which we conceive future relations of technology, people and politics; philosophical meditations on consciousness and the nature of the universal; humorous critical sketches of the freakishness and religiosity of Silicon Valley's latter-day Saint-Simonians; a defence of the book as expression of the integral individual. Given the anarchic quality of Lanier's construction, it would be trying to follow it in detail, but I will attempt to reconstruct the argument here in terms of its two broader phases: critique and alternative.

The central concern of this book is that, with the ocean of free information unleashed by the Web, more and more of the value created by real people is effectively moving 'off the books'—going unremunerated, unaccounted for, unmediated by any economic transaction. This is perversely leading to the shrinkage of one area of the economy after another, while wealth in information and computing power expands at an accelerating clip. These developments have already taken their toll on 'creative industries'—the music industry is Lanier's favourite example—and will threaten broader swathes of the economy as existing technologies ripen. Three-dimensional printing, driverless cars, mass online courses and robotization may between them transform manufacturing, transport, education and healthcare. Unchecked, such tendencies will lead to a future of hyper-unemployment, confronting us with a question:

> What should the role of 'extra' humans be if not everyone is still strictly needed? Do the extra people—the ones whose roles have withered—starve? Or get easy lives? Who decides? How?

Lanier is not alone in having these worries, even in business circles. What is distinctive about Lanier's analysis is his diagnosis of 'off-the-books' data creation as a major part of the problem. Free information is, for Lanier, a bad, unsustainable idea that got written into the technological infrastructure partly as an ideologically-driven design flaw, and partly as a matter of mere convenience. For Lanier, the principal mystification that has enabled these developments is a widespread anti-human fetishization of computation and information, which treats these as if they are free-standing and intelligent or meaningful in themselves. The reality is that computers are simply complicated deterministic systems which can only have meaning to human users, and behind every computation or bit of data there is ultimately a hidden person. Free information is never really free, for someone somewhere had to produce it.

Technological anti-humanism is partnered with what Lanier referred to in *You Are Not a Gadget* as 'digital Maoism': a philistine glee for levelling all into the amorphous digital crowds let loose by Web 2.0. Both tendencies obscure the integral creative individual who is the hero of Lanier's story, and both are amalgamated in the object of his *Ideologiekritik*. The standard 'melodrama' that pits 'good guys' (Linux, Wikipedia, the Pirate Party) against 'bad guys' (intelligence agencies, big Hollywood studios, Third World dictators) is now obsolete, because the 'open Internet is already corrupted beyond recognition'. Indeed, the illusions of the 'free' and the 'open' have contributed significantly to the establishment of new coercive structures centralized in the giant server farms of Facebook, Google, the NSA et al. As such, the Internet has become a top-down hierarchy which can no longer

be conceived as a 'purist's emergent system'. 'Twitter revolution' narratives that pit social-media crowds against old forms of power play into the hands of these new structures—which may often be merely network-enabled versions of older entities.

At the heart of these developments are what Lanier calls 'Siren Servers'. These are large-scale concentrations of computing capacity which gather data from a network for analysis, and which use the resulting information asymmetry 'to manipulate the rest of the world to advantage'. Siren Servers aim to be a 'perfect investment'—avoiding the risk of producing anything themselves, and handing off remaining risks to others through byzantine license agreements which nobody reads. They aim simply to channel, hoard and manipulate the information of those who are exposed to 'risk'. Siren Servers do not even have to be all that innovative—as long as they can find a way to grow quickly and establish one or another particular 'monopoly' position. Through these developments, 'all activity that takes place over digital networks becomes subject to arbitrage, in the sense that risk is routed to whoever suffers lesser computation resources', while 'reward' accrues to the owner of the bigger computer. Such tendencies are not unique to tech companies: Walmart's data-driven supply chain optimization pioneered the Siren Server model, and Lanier interprets the growing centrality of data centres and 'quants' to Wall Street as an instance of the same pattern. Indeed—in what is surely a case of conceptual overstretch—Lanier even sees the Siren Server in the growing exploitation of data by political campaigns and nation-states.

The torrent of free data let loose by the Web has been a gift to these Siren Servers, which 'channel much of the productivity of ordinary people into an informal economy of barter and reputation, while concentrating all the old-fashioned wealth for themselves.' And this brings us to Lanier's vision of a utopian alternative: if, instead of spreading an informational gift economy, the Web had universalized a system of micropayments, monetizing data as it went, we could be looking forward to a future of boundless economic growth as that data expands indefinitely. Thus what is needed is effectively a radical expansion of 'accounting' to put prices on all the data currently given away for free—not just that consumed by the average person, but also any economically valuable information produced by everyday net-mediated lives increasingly tracked by stat-gathering, model-building data centres. This amounts to a sort of informational revision to the Lockean 'property in the person': not only myself and whatever material things I produce with my labour, but also all the data I produce—even as a mere side-effect of my existing—are my property, and I should thus be remunerated for use of such data. This is 'an idea that takes capitalism more seriously than it has been taken before', says Lanier. But if we fail to

take such steps, he thinks, we will face growing insecurity and the threat of an authoritarian 'socialist backlash'.

In terms of social analysis, Lanier's argument is characteristic of a generalized contemporary anxiety in the US about the future of the 'middle class'. His conceptualization of this class is derived from the comparison of two statistical distributions: bell curve and winner-takes-all. When wealth takes a bell-curve distribution, most people have similar, middling quantities of wealth, and there are vanishing quantities of very poor and very rich. But when it assumes a winner-takes-all distribution, most people have comparatively little, while a minority gets astonishingly wealthy. The present epoch has of course tended towards the latter, and this seems to have been particularly the case where networks are involved. This, Lanier thinks, is bad for everyone, since growth requires a strong middle class of consumers. He thus sees a need for a 'cyber-Keynesian' remedy which will intervene politically in the flows of finance and establish 'levees' to guarantee the wealth of this class—something analogous to the structures of mid-20th-century social democracy. But Lanier is not Paul Krugman: he is sceptical about the capacity of traditional elites to keep pace with technological innovation sufficiently to be able to regulate it or manage it macro-economically, and thus thinks of network design as a more fitting location for *de facto* legislation and economic regulation. If Tim Berners-Lee's Web was badly designed, such that it has promoted a winner-takes-all or Siren Server model, it should be possible to produce a new, middle-class-friendly design.

For Lanier, a superior alternative to the Web is suggested by tech pioneer Ted Nelson's Project Xanadu, which first formulated hypertext in the early 1960s but has remained fundamentally unrealized. A central idea of Xanadu was that file copying would not be permitted since, on a network, it should only be necessary to have a single, authoritative version of a file—for it could be accessed from anywhere across the network anyway. An implication of this simple premise was that property rights would be more easily maintained, and context would also be preserved rather than lost, when cited rather than copied data was re-presented in other settings. Another central idea was that links between documents would always be two-way, in contrast to the one-way links characteristic of the Web: if I link from my document to yours, my link is registered in your document as well as mine. It follows from this premise that there would be less need for entities like Facebook and Google: with regard to the former, the anonymity of the Web would be reduced from the start, bringing me into direct contact with anyone linking to or commenting on my data anyway, without the need for this to be mediated by a single, closed system that can map my relationships in all directions; as for the latter, network structure and a sense of what was important would be more immediately apparent just from where the links

went, and there would thus be less need for the structure of the entire Web to be constantly mapped and re-mapped by something like Google.

Lanier thinks Xanadu, with the integral place it gives to property and provenance, offers a better model for how to design networks that might promote the preservation of the 'middle class'. But it is not simply a matter of returning to Nelson's old design. Lanier also sketches an elaborate system of micropayments by which all network participants are to be remunerated for the use of any economically valuable data they produce, gradually accruing a multiplicity of revenue streams over the course of lives lived online. The effective enforcement of information scarcity would help to promote the kind of symmetry in buyer–seller relations that has always been the projected idyll of the marketplace. He envisages a continuing role for the state as guarantor of the identities of network/market participants—something that would effectively realize the long-latent identity of citizen and bourgeois subject. The necessary decisions that would proliferate in such an economy could be managed by a future 'decision-reduction' industry, which would sell its services on the open market. Accountancy would become a glamorous profession, tasked with expanding the frontiers of the market to ever more potential data commodities. 'Legacy' contributions to value would be factored into computations of price, in addition to conventional relations of supply and demand, providing ballast to stabilize markets against the usual ebb and flow of confidence. Revenue streams due to the dead would default dwindlingly to their heirs, 'rolling off according to a smooth function'. 'Risk pools' of limited size would manage a collectivization of risk while preventing it from being generalized to the whole of society. Economic 'avatars' would enable people to experiment freely with varied 'transaction styles', mixing credit with cash, one-off payments with instalment plans.

How will we get there? There will—of course—be a peaceful transitional phase, avoiding any nasty stuff like revolution, in which people will be able to experiment voluntarily with the possibilities of the proposed 'humanistic information economy'. But in case we were doubting Lanier's Leninist realism, he deploys a sort of 'tyranny of structurelessness' argument against any notion that this could be an entirely bottom-up affair: real power is top-down, and we are fooling ourselves if we think we can avoid it. And of the various possible agents that might effect such a transition—geeks, startups, governments, Siren Servers (yes, that set, in that order)—Lanier seems to lean towards a confederacy or cartel of the latter as the most plausible option. In short, what Lanier seems to be proposing is that the Silicon Valley scene and any other interested Siren Servers get together out of enlightened self-interest to engage in a global project of social engineering which will supersede markets and politics as we currently know them, in order to save capitalism from itself by realizing a market utopia.

Lanier's shadow-boxing partner throughout all this is a vision of Marxism or socialism that would befit a hard-bitten Cold Warrior. This is the necessary dark alternative to his utopian techno-capitalism, the future that we risk if we don't find a solution to the problem of the threatened 'middle class'. Again, he isn't alone in having such concerns: Erik Brynjolfsson and Andrew McAfee feel a need in their latest book, *The Second Machine Age*, to define their own prescriptions for similar maladies against projections of non-capitalist alternatives. But anti-communism is a peculiarly persistent theme in Lanier's writing. Given the general absence, for the duration of his literary career so far, of any significant social agent that might actually put such an alternative on the agenda, this would appear an odd ideological tic—perhaps the residue of an old polarization between a 'new communist movement' and the hippy new communalists who first peopled the electronic frontier. But its presence here might be read more interestingly as a function of Lanier's own concern with speculative utopias, and with the secular trajectory of capitalism—concerns which cause his thinking to repeatedly run up against a nightmarish Marxist double.

In Lanier's taxonomy of the 'humours' by which we conceptualize future relations between technology, people and politics, he notes that there often seems to be a process of 'switchback' in which one humour segues into another. His central example of this is the way the triumphalist technological fantasies of the 'brashest entrepreneurs' blur into something 'weirdly socialist'. He thinks there may be some slide in his own position from a 'Ted Nelson' into a 'Rousseau' humour. But perhaps there is something more radical here. Given that the future of Lanier's imagining is one in which means of production will be abundant and distributed—3D printers will print 3D printers—the capitalism he envisions could hardly be much like that analysed by Marx in terms of a fundamental separation of the mass of people from those means. Neither private property nor the egalitarianism of the marketplace that Lanier projects onto the future was, of course, ever a sufficient condition for capitalism. What is more, if we are to accrue wealth even as a mere side-effect of our digitally-mediated lives, remunerated for just being our creative selves, are we not looking at a transcendence of capitalist wage labour? Perhaps Lanier's plan to save capitalism contains some 'transitional demands' in disguise.

While there is plenty to criticize in the particulars—there are howlers here that could have been avoided with a Wikipedia search—there isn't space in this review, and it would perhaps be unfair to take Lanier more seriously than he takes himself. It would also, perhaps, involve a genre mistake: one doesn't quibble with Charles Fourier's numerical prescriptions on the size of social groups. Indeed, there is something Fourier-like about Lanier: he tells us in an aside that he is working on a project to relocate

tectonic faultlines in less destructive locations by gluing faults and exploding open new ones, as well as 'a gigantic lighter-than-air railgun to launch spacecraft'. Fourier too may be read as a sort of satirist. Speculative utopias perform a function in the critique of the present. But what is perhaps most interesting about Lanier's utopia is that it criticizes the present itself as a case of utopianism gone astray: it is the attempt to realize the *bad* utopia of a high-tech gift economy that has brought us to this dysfunctional point. And if we fail to deal with these dysfunctions we risk passing over into another bad—Marxist—utopia, where the lassitude granted individuals by the market is subsumed by an all-encompassing nightmare of 'politics'. It is thus to fend off the threat of one utopia, and to heal the wounds inflicted by another, that Lanier proposes his own. But there can hardly be a more banal, anti-human utopia than one which puts a price tag on our every utterance.