ARTICLE PUBLISHED IN *ELECTRA*, SPECIAL ISSUE ON ATTENTION, LISBON, 2024, P. 52-67

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From the Attention Economy to Curiosity Finance and A.I. Synthetics

Two Conceptions of Attention

Over the last 30 years, discussions about "the attention economy" have moved from the fringe of academic journals and artists' projects to the mainstream of Netflix documentaries and moral panics[1]. What, during the early 1990s, sounded like a strange idea in Georg Franck's first formulations (attention circulates among us like a currency, and mass media operate as its banks), or like a crazy prophecy in Michael Goldhaber's more provocative statements (attention might replace money as the main currency)[2], now seems fairly obvious and banal. This is a most welcome change: gaining a keener collective awareness of the mechanisms and dynamics upon which our systems of communication (and our perceptions of the world) actually rest is a crucial first step, if one hopes to escape from the planetary death trap mediarchical capitalism is cornering us in.

These growing discussions have set in place what Kenneth Rogers calls an "attention complex", which is to be understood as a complicated entanglement of multiple issues and different disciplines, but also as a bundle of connected interests and agendas (comparable to the 'military-industrial complex'). As he rightly points out, this complex has been going through a major transformation over the past years—evolving from an original hypothesis of scarcity to a challenge in synthetic cognition[3]. Since Herbert Simon's famous 1971 article[4], almost everybody has theorized "the problem of attention" as an issue of scarcity: too many things to see (watch, learn, know), not enough attention (time)—economics being traditionally defined as the optimizing management of a scarce resources.

Within such a paradigm, the dominant tone of the discussions has been anxiety-ridden, if not apocalyptic: the "crisis of attention"—about which a founding publication by Jonathan Crary already warned us since 1999 that it had been a permanent feature of capitalism for more than a century—was approached in terms of deficit and deficiency, pathological and clinical (ADHD, burn-out), or social and moral (distraction, dispersion, Fear of Missing Out)[5].

Over the past decade, however, another aspect (often more discretly present in the previous discussions) seems to be increasingly foregrounded: what if, instead of lamenting our "information overload", one attempted to study, understand, practice, improve our capacity to develop a different type of attention, which would accommodate to the

[1] This research has been supported by the EUR ArTeC financed by the French National Agency for Research (ANR) through the PIA ANR-17-EURE-0008. It also owes much to the collaboration with Enrico Campo, as it does to discussions on A.I. with Grégory Chatonsky.

[2] Georg Franck, "Ökonomie der Aufmerksamkeit", *Merkur* 534/535 September/October 1993, p. 748-761, and Michael Goldhaber, "Principles of a New Economy", 1996, http://www.well.com/user/mgoldh/principles.html.

[3] Kenneth Rogers, *The Attention Complex. Media, Archeology, Method* (London: Palgrave McMillan, 2014), as well as "Quick Bites", chapter one of Enrico Campo & Yves Citton (dir.), *Politics of Curiosity. Alternatives to the Attention Economy* (London: Routledge, 2024).

[4] Herbert Simon "Designing Organizations for an Information-Rich World", in Martin Greenberger, *Computers, Communication, and the Public Interest* (Baltimore: Johns Hopkins Press, 1971).

[5] See Jonathan Crary, Suspensions of *Perception* (Cambridge, MA: MIT Press, 1999), as well as Enrico Campo, *Attention and its Crisis in Digital Society* (London: Routledge, 2021).

superabundance of information as an asset and a source of satisfaction, rather than being crushed by its curse? Coming from the literary field, in the early 2000s, Katherine Hayles defended the merits of what she called "hyperattention"—a capacity superficially to scroll through a multiplicity of heterogeneous data with a 360° vision—as a fully valid alternative to our dominant vision of narrowly-focused "deep attention", while Franco Moretti was developing a computerized "distant reading" of very large corpuses, and while Pierre Bayard, professor in literature at the University Paris 8, was provocatively teaching us "how to talk about books we haven't read", since a legitimate part of literary knowledge comes from the ability to situate a work within a landscape of publications we don't have the time to read, but need to know (something about them) nevertheless[6].

At stake is a conception of attention based on *synthetic cognition* rather than analytical focusing. While both aspects are in fact present most of the time in our daily mental gestures, putting the emphasis on one rather than the other has great consequences. It is my contention that the academic world greatly misunderstands the causes and strengths of what it disqualifies as "conspiracism" by failing to read it as the result of a necessary (and potentially healthy) need to relocate punctual "facts" within the bigger picture of social dynamics. "Conspiracists" and "anti-conspiracists" base their conception of "truth" on putting emphasis on a different attentional mode: the former synthetically consider as true what fits within a big picture of social domination (too bad if one or two assertions fail the fact-checking test!), while the latter analytically consider as true what punctually refers to an actual fact that can be verified through authorized procedures (the overall meaning of such facts being left to the interpretations of "ideologues")[7].

The hegemony of (neo-)liberal thought over the past half a century has habituated us analytically to break down (political) situations into (legal) procedures in order to rearrange our (productive) relations so as to maximize (economic) growth, calculated along the interests of (financial) capital. Whether in terms of injustice, inequality or ecocide, this has legitimately raised many forms of resentment, on the Left as well as on the Right sides of the political spectrum. Both forms of resentment are rooted in the unsatisfied need to find accountability and responsibility for the global situation we find ourselves in. Their call for a comprehensive view of our situation is disqualified as "conspiracist" from the point of view of an attention complex (neoliberally) biased towards an analytical definition of truth, to the expense of a more synthetic approach.

Insofar as it is strongly articulated with a certain conception of economics as the optimizing management of scarce resources, this same hegemony has also habituated us to approach any problem in terms of a certain lack (want, shortage, deficit, deficiency), which needs to be analytically identified, in order to be remedied through an appropriate punctual (productivist) solution. By pushing us to focus on one problem after another, the attention complex prevents us to see that most of us—in the middle classes of the Western world at least—live among a superabundance of resources, goods and services. Counter-ideologies promoting "sobriety" and "degrowth" are slowly gaining ground, but they require a fundamental reconfiguration of our mental infrastructures, overcoming the inertia of our currently hegemonic attention complex.

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[6] N. Katherine Hayles, *How We Think. Digital Media and Contemporary Technogenesis* (University of Chicago Press, 2012); Franco Moretti, *Distant Reading* (London: Verso, 2013); Pierre Bayard, *How to Talk About Books You Haven't Read* (New York: Bloomsbury, 2009).

[7] See my article "Conspiracies In and Against Mediarchies: Literary Guide to a Metarealist Gameplay" to be published in the *Cambridge Journal of Law, Politics and Arts*, 2024, as well as the dossier "Conspirations hors complots" in the journal *Multitudes*, n° 91 (Summer 2023), available online at https://www.cairn.info/revue-multitudes.htm.

Towards a 'Curiosity Economy'?

While the attention complex may be evolving away from the (anxiety-ridden) scarcity discourse towards a more forward-looking consideration of our capacity to deal with the superabundance of information, it seems in the process of being overtaken in progressive circles by the rise of "Curiosity Studies" over the last five years[8]. To make a long story short—and to acknowledge its status of story, more than of positively established truth—one could say that while a first reaction to the attention complex consisted in reclaiming the emancipatory powers of distraction[9], another counter-discourse is now taking shape around an attempt to displace the decisive factor of our societies' future, from an economic crisis of attention towards a political reevaluation of curiosity.

Attention	**Curiosity**	**Distraction**
Mostly discussed as exogenous (exposed to PUSH)	Endogenous (inner drive to PULL)	Exogenous (subjected to PUSH)
Subjected to authority	Insubordinate	Alienating
Unequivocally good	Morally ambivalent	Unequivocally bad
Gender neutral (or associated with men)	Strongly associated with women (Eve, Pandora, etc.)	Strongly associated with today's youth
Directional & figural focus (*mono-pragmosunè*, '*known unknowns*')	Background & 360° (*poly-pragmosunè*, '*unknown unknowns*')	Scattered & unstable (*a-pragmosunè, 'unknown knowns'*)
Structural separation between the subject and the object of attention	Dynamic feedback between curious objects and curious subjects	Evaporation of the subject absorbed and dismantled by temptational objects

As summarized in the table above, excerpted from a common work with Enrico Campo[10], the main consequences of such a displacement consist in emphasizing several peculiarities of curiosity: the pro-active behavior of curious subjects, their endogenous move towards pulling a (missing but reachable) bit of information; their attraction towards weird ("curious") aspect of our environment; their wide, uncontrollable (or even anarchistic) openness to surprises (potentially leading to critical self-questioning), by contrast with a dominant view that posits attention either as duly disciplined and focused (the attentive student, drinking the teacher's every word), or as sinfully distracted and dispersed (the scatterbrain youth, victim of the commercial ads and social networks of platform capitalism).

In order to prevent any Manichean binarism between good curiosity and bad attention, I would like, in the following pages, to suggest that there already is a 'curiosity economy', no less extractivist than the attention economy, but that a reconsideration of curiosity may nevertheless pave the way towards promising changes.

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[8] See for instance Ilhan Inan, Lani Watson, Dennis Whitcomb & Safiye Yigit (ed.), *The Moral Psychology of Curiosity* (London: Rowman & Littlefield, 2018) ; Papastephanou, Marianna (ed.), *Toward New Philosophical Explorations of the Epistemic Desire to Know: Just Curious about Curiosity* (Newcastle: Cambridge Scholars Press, 2019) ; Perry Zurn and Arjun Shankar (eds.) *Curiosity Studies: A New Ecology of Knowledge* (Minneapolis: University of Minnesota Press, 2020); Perry Zurn, *Curiosity and Power. The Politics of Inquiry* (Minneapolis: Minnesota University Press, 2021).

[9] See Paul North, *The Problem of Distraction* (Stanford: Stanford University Press, 2011); Paul Sztulman & Dork Zabunyan (eds.) *Politiques de la distraction* (Dijon: Les Presses du réel, 2021); Aloisi, Alessandra, *The Power of Distraction. Diversion and Reverie from Montaigne to Proust*. (London: Bloomsbury, 2023).

[10] On this evolution, see Enrico Campo & Yves Citton (ed.), *The Politics of Curiosity. Alternatives to the Attention Economy* (London: Routledge, 2024).

There are at least three very different forms of 'curiosity economy' to be mentioned here. The first one is usually absorbed under a broad definition of the attention economy, as it includes all the technological channels of communication, sensory semiotics and rhetorical tricks set in place to trigger and lure our curiosity towards consumerist traps[11].

The second one can be found in recent developments of the cognitivist psychology of curiosity. It started in the 1960s with Daniel E. Berlyn's focus on "arousal": the human subjects avoid boredom by searching for external sources of excitement. It continued in the 1990s with George Loewenstein's "information gap" theory: curiosity is triggered when an information is perceived as missing but reachable. Zachary Wojtowicz and George Loewenstein have recently suggested considering curiosity as a hedonic motivational state aimed towards relieving the load of attentional resources required for attention allocation:

> curiosity exists to direct attention in a way that does not itself require the expenditure of attention. It partially relieves serial, deliberative cognitive faculties from the burden of calculating the relative value of redirecting attention by offloading this task to parallel, associative faculties. These automatic evaluations – formed associatively on the basis of sensory cues – are then re-incorporated into deliberative decision-making as hedonic modifications to the attractiveness of maintaining or redirecting attention[12].

The metaphor of attention as a scarce resource returns here, although at a higher, *meta*-level, where curiosity provides a solution to the lack of attentional resources: it is conceived as a way to short-circuit (by-pass, accelerate, precipitate, spare) the attentional effort invested in appraising what objects are worth attentional investment. Insofar as it operates automatic evaluations motivated by spontaneous sensory cues, curiosity reduces the resources required for the deliberate allocation of attention, while providing nevertheless a more-than-aleatory principle of selection.

As an example, if I am a tourist visiting a city for the first time, instead of having to wonder and ponder beforehand whether this neighbourhood is more interesting than that one—which would require hours of reading guidebooks and surfing websites—I let myself be guided by what triggers my curiosity from street to street, corner to corner. This comes with many potential advantages: I can start exploring and experiencing the city as soon as I arrive, instead of being absorbed in a book or a screen; I directly follow what attracts *me*, according to *my* singular tastes and expectations (instead of aligning myself with the preferences of the authors of the book or website); I expose myself to unforeseeable encounters with out-of-the-map haecceities (singular and "curious" things or events, which I did not even suspect I would or could appreciate before I stumbled upon them). By making curiosity my guide, I "save" time and energy: I "direct attention in a way that does not itself require the expenditure of attention", I "offload the task [of orienting myself] to parallel, associative faculties"—while at the same time, I get a chance to free myself from shared and authoritative pre-judices (opinions pre-adjudicated by others in position of authority). This second, psycho-cognitive, 'curiosity economy' seems to be a source of pure benefits.

Financial Derivatives as a Curious Form of Blindness

There is, however, a third form of 'curiosity economy' which seems to enact emblematically, at the collective level, the function of cheap (because irreflexive) orientation expressed in this psycho-cognitivist account of curiosity. We usually refer to it as "financial

[11] See for instance Franck Cochoy, *On Curiosity. The Art of Market Seduction* (Manchester: Mattering Press, 2016).

[12] Zachary Wojtowicz & George Loewenstein, "Curiosity and the Economics of Attention", *Current Opinion in Behavioral Sciences* 35, October 2020, p. 137.

markets". In their Hayekian idealization, they are justified as impersonal procedures of discovery: since nobody knows what the future will be, let a maximum of players evaluate their options and make their bets, on the basis of their diversity of intuitions, (crackpot) theories and social positions – and the aggregated result will come as close as possible to an optimal solution, thanks to these distributed efforts of curiosity. This conception of what Hayek called a "catallaxy", the ideal impersonal order emerging through free markets, was explicitly based on the need to short-circuit the reflective moment of social planification (a fatal source of countless errors and grim "totalitarianism" in Hayek's view[13]). What is the socially acceptable function of financial markets, if not to "relieve serial, deliberative cognitive faculties [of the central State] from the burden of calculating the relative value of redirecting [resources] by offloading this task to parallel, associative faculties", based on the private hope for higher rates of profit?

Since Hayek's time, financial markets have been restructured by the unimaginable proliferation of derivative products: a whole other layer of bets has been superimposed to the distribution of productive investments, collectively hedging the risks of each investment by letting traders *meta*-bet on any type of future evolution likely to affect the returns on these investments (soon letting trader *meta*-meta-bet on their previous guesses, in what seems to be an endlessly recursive gambling autophagy)[14].

This shift of emphasis from assessing productive opportunities to assessing risk deeply resonates with the collapsologist mood of our 2020s, and it could provide Curiosity Finance with a life-saving task: while attention, in its dominant definition, plays the role of the good student/trader methodically reading the text/equation prescribed by the teacher/economist, Curiosity Finance—apparently distracted from "the real economy"—looks out through the window and foresees a hurricane coming[15]. To paraphrase the intellectual brilliance of the Bush White House (pairing Karl Rove with Donald Rumsfeld): far from the "known unknowns" to which "the reality-based communities" pay attention (i.e., those who "believe that solutions emerge from your judicious study of discernible reality"), Curiosity Finance has become "an empire" which foresees and creates "other new realities", thanks to its capacity to stumble upon "unknown unknowns".

The tough and rough question is: will curious derivative bets on the probability of hurricanes be enough to save our asses? There are indeed many reasons to distrust Curiosity Finance. Even if financial derivatives help us measure our mindboggling entanglements by "bundling together" heterogeneous bits of reality[16], they continue to entrap us in cost analysis, while we desperately need a synthetical approach to the overall mis-structuration and mis-incentivization of our ecocidal economies. In the Capitalocene context, Wojtowicz and Loewenstein's functional definition of curiosity sounds like a praise for blindness. We should *not* be "relieved from the burden of calculating the relative value of redirecting attention"! To the contrary, this calculation is exactly what we need collectively *and reflexively*, deliberately to do—and it *does* take time and energy (and dissensus and conflict)—but continuing to "offload this task" to overpaid (and high-on-steroids) financial traders (or White House executives) committed to pursue business as usual is simply suicidal!

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[13] Friedrich Hayek, *Law, Legislation and Liberty*, (University of Chicago Press, 3 volumes, 1978-1981).

[14] On attention and derivatives, see Yves Citton, "Attentional World-Making, Meta-Attentional Derivatives, and Hyperstitional Ambivalence" in Warren Neidich (ed.), *An Activist Neuro-Aesthetics Reader*, Berlin, Archive Books, 2022, p. 370-387.

[15] See D. Graham Burnett, "The Bonds of Catastrophe. Betting on Disaster", *Cabinet Magazine*, issue 57, Spring 2015.

[16] Randy Martin, *Knowledge LTD. Toward a Social Logic of the Derivative* (Philadelphia: Temple University Press, 2015).

Artificial Intelligence as a Curious Form of Synthetics

Now, of course, Wojtowicz and Loewenstein's definition paves the way for another curious solution to our civilizational conundrum: when they portray curiosity as consisting in "automatic evaluations formed associatively on the basis of sensory cues", it is hard not to think of what is now much discussed under the misnomer of Artificial Intelligence (A.I.). Aren't most of financial transactions now performed from machine to machine by automated speed-trading? Won't GPT-9 promise us to have "solutions emerge" from its reshuffling of indiscernible realities, to solve the climate puzzle, recombine DNA and restore biodiversity, before inventing "other new animals" (much more curious than we could imagine) in a fully automated post-human empire?

While the attention complex is busy deploying the automation of our attentive faculties[17], here too, putting the emphasis on the merits of curiosity—while keeping at bay the immediate pressure of economics—may act as a game-changer. This may yield promising results under at least three conditions.

First, since all intelligence is somewhat "artificial", and since the "intelligence" of neural networks is highly problematic, one should follow Ilan Manouach and Anna Engelhardt's suggestion to substitute the more accurate term of *synthetic cognition*[18]. One of its many advantages is to present the operations of neural networks on big data as providing a form of synthesis within our world misguided by an excessive bent on analytics. Even if, of course, computation based on binary coding can also be seen as the triumph of analysis and grammatization, the emerging use of Large Language Models (LLM), with all its problems, may be a turning point towards much-needed, higher capacities of synthesis.

Second, the main danger of LLM is not to be situated in the computing machines, in their biased results, or even in the sloppy data on which they are made to operate, but in the status we, as human agents and as social beings, attribute to the statements they generate. We are currently led to receive them in a structure of communication very similar to that of *a consultancy*[19]: the main problem (not the only one, of course) with sexist or racist and other plain wrong statements coming from Chat-GPT and other similar 'stochastic parrots'[20] is that we assume a position where we would listen to them as if they were coming from a McKinsey report—and the problem is obviously, upstream, from the type of (obedient) attention we have been led collectively to pay (very expensively) to consultancies like McKinsey & Co. In a typically skeuomorphic remanence of the age of printed media, we read statements made by LLM as if coming from (the Good) book(s), i.e., as if they were "intelligent" (whose etymology is grounded in the gestures of humans reading (-*legere*) each other's (*inter*-) reflection. Apparatuses of synthetic cognition should not be consulted to receive (or push!) truth-statements meant to guide and orientate us in reality; they should be respectfully treated as providers of experimentations in alternative modes of thinking/seeing/listening/meaning.

Third, as a consequence, instead of "paying attention" to their inexistent intelligence, we should rather *develop a curiosity for their curiosities*. The strange property of the adjective "curious"—which, in different languages, can refer equally to a curious *subject*, eager to discover 'unknowns unknowns', and to a curious *object*, which puzzles and disorients its

[17] See Yves Citton, "Automatic Endo-Attention, Creative Exo-Attention: the Egocidal and Ecocidal Logic of Neoliberal Capitalism" in Benjamin Roberts & Patrick Crogan (ed.). *Automation Anxiety*, special issue of *New Formations. A Journal of Culture/Theory/Politics*, n° 98, Dec 2019, p. 101-118.

[18] Ilan Manouach & Anna Engelhardt, *Chimeras: Inventory of Synthetic Cognition* (Athens: Onassis Foundation, 2022).

[19] I owe this important intuition about AI and consultancy to the work of artist Carole Grand, who is writing a dissertation on the topic.

[20] See Emily Bender et al., "On the Dangers of Stochastic Parrots: Can Language Models Be Too Big?." *FAccT* '21, March 3-10, 2021.

observer's judgement—allows for a most precious feedback loop between the here and the beyond. Finding something 'curious' can go both ways: while the thing in question is intriguing, its 'curiosity' may turn out to be just too weird, to the point of being repugnant, or, if its threatening aspect can be overcome, it may open the perspective of unsuspected forms of joy. The experience of curiosity is what allows me to push back the boundaries that circumscribe my tastes and expectations.

These dynamics are particularly relevant to our relations with apparatuses of synthetic cognition. The dominant instrumentalization expects them to tell us what we want to know: we are typically in the domain of the 'known unknowns', since the very structure of the consultation reserves the formulation of the questions to human authorities. Developing a curiosity for the curious outcomes of synthetic cognition reverses the roles: the computation of big datasets is valued insofar as it pushes us to imagine the unimaginable, to get a glimpse of the unconceivable, to encounter the unexpectable (the weird, the queer, the trans: some bits of what lies beyond the threshold of our pre-existing categories).

This is best exemplified by the counter-use of AI practiced and advocated by artist Grégory Chatonsky[21]. Such work demands constant, careful, clever, virtuoso efforts to work against the averaging grain of the stochastic parrots, which statistically operate by calculating *the mean* among materials deemed relevant through inductive filtering of big data. The computational 'latent space' on which these models operate – i.e., the mathematical structure assigning the probability for a word/pixel to be followed/neighbored by another word/pixel, based on processes of statistical induction – results from centuries of curious investigations made and recorded by generations of human subjectivities (lately under Western, and English-speaking, domination)[22]. While the basic material of the latent space is the outcome of human curiosity, its product, insofar as it is a statistical average, tends to downplay our eccentric curiosities by tending to align its results with the majoritarian means. The real challenge of A.I. therefore consists in welcoming its amazing super-power of synthetic cognition, strategically useful in order to counter-effect our analytical scatterbrain (neo-)liberal condition, while at the same time resisting its innate tendency to average-out the eccentric, through tactical and artful moves tweaking its results towards the curious (the 'unknown unknowns') rather than the mean.

In Praise of (Un)Controlled Hallucination

One last (but certainly not conclusive) word. As Andy Clark argued in *Surfing Uncertainty*, all "perception is controlled hallucination":

> naturally intelligent systems do not passively await sensory stimulation. Instead, they are constantly active, trying to predict (and actively elicit) the streams of sensory stimulation before they arrive. Before an 'input' arrives on the scene, these pro-active cognitive systems are already busy predicting its most probable shape and implications[23].

The French language embodies this intuition by strongly binding *attention* with *attentes* ("expectations"). We all begin by (partly) hallucinating what we see. Stochastic parrots push this logic to its extreme, since the don't 'see' anything: their images and statements are pure hallucinations—projections of realities that have a good chance to exist, if we are to trust what human curiosity has been recorded stating about them.

[21] See http://chatonsky.net/.
[22] For a splendid description of what is a stake, see Adrian Mackenzie, *Machine Learners. Archaeology of Data Practice* (Cambridge MA, MIT Press, 2017).
[23] Andy Clark, *Surfing Uncertainty. Prediction, Action and the Embodied Mind* (Oxford University Press, 2016).

As a mental gesture of focusing on a particular perception, attention is obviously precious in order to control our hallucinations. It does so by analytically checking the matches and the discrepancies between the probabilistically expected and the actually perceived. While we should obviously be grateful for the work of fact-checkers, we should remember that our feeling of understanding and our capacity to orientate ourselves in the world are deeply anchored in our (at best, controlled) power to hallucinate a cognitive synthesis which unavoidably reduces the infinitely complex entanglements that weave our lives.

Because this activity of attentive fact-checking (and debunking) is necessarily based upon what we already know (as it consists in checking the unknown against the known), it is greatly insufficient in historical moments like ours, where the worm of ecocidal extractivism has permeated virtually all categories of knowledge. In order to 'transition' to other forms and other contents of knowledge, we need to open up our minds to their beyond. We need actively to search for, and appreciate, the weird, the queer, the trans: the curious. The insubordinate side of curiosity (which the myths of Pandora and Eve illustrate, blaming it on women) positions it well to welcome some amount of uncontrolled (but careful) hallucinations—always remembering the etymological proximity between curiosity and care (*cura*).

What is most desperately needed, however, is not only curious things (although they can function as peepholes to other possible worlds), but rather curious syntheses: alternative hallucinations projecting alternative expectations and alternative meanings onto our superabundant realities. In 1980, while theorizing the rise of neoliberalism, Michel Foucault predicted—hallucinated—"a new age of curiosity[24]": it is not too late to dream it up, and act it up.

[24] Michel Foucault, "The Masked Philosopher" (1980) in *Ethics, Subjectivity, Truth* (New York: The New Press, 1997), p. 321-328.