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Acceleration, development and technocapitalism at the Silicon Cape of Africa

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Abstract

A lot has changed in the global machine of international development since its inception, but the language of technological acceleration remains ubiquitous today. In this essay, I trace one of the lineages of this new *acceleration* in the post-dotcom-boom Silicon Valley. Informed by the technophilic culture of what Richard Barbrook and the late Andy Cameron described as *Californian ideology*, technological acceleration offers both a language and a model for antipoverty experiments hinging on the elusive market subject of the African entrepreneur.

Drawing on the writings of three Silicon Valley evangelists who have produced a written culture of what I call *poetics of acceleration*, and on four years of ethnographic research in Cape Town, this essay charts the frictional interfaces between technocapitalism and African development, suggesting that these frictions, while vital in the production of new profit frontiers, are also the site of more ambivalent engagements with in-between futures that perhaps outstrip the predictable ends of these entrepreneurial market experiments.

Key words: acceleration; development; Africa; technocapitalism; Silicon Valley; Cape Town.

> 'Development' - one great big wonderful all-purpose god of a machine, eh, Superjuggernaut that's going to make it all right, put everything right if we just get the finance for it. [...] No dirty hands or compromised minds. [...] It's all going to be decided by computer - look, no hands! (Nadine Gordimer, *The conservationist*)

Introduction

In the words of the epigraph that opens this essay, Antonia, a fictional antiapartheid activist in Nadine Gordimer's 1974 *The conservationist,* captures the worldview of the novel's main character and antihero. A rich yet morally bankrupt financier, Mehring believes in the technical possibilities of capitalist development. With the right technological tools, he thinks, development would as a *deus ex machina* address the harrowing woes of his white South Africa.

Mehring's beliefs, albeit fictional, are a good representation of the way in which the apartheid state had adopted the language of international development[i]. Keen to legitimize segregation to Western countries, the South African bureaucracy had borrowed key concepts from the 'veritable industry' that framed the relationship between the West and the rest of Africa (Cooper & Packard 1997, p.1). Not incidentally, one of the core policies of apartheid — separate development — was underpinned by the racialized idea that black and white South Africans were at different stages of their modernization paths (Tapscott, 1995).

In economic terms, the notion of different stages of modernization had been expressed in Walter Rostow's 1960 *The stages of economic growth*. Key to Rostow's *Non-communist manifesto* was the insight that, to address poverty, underdeveloped nations needed to enter a phase of fast technological change: the 'take-off stage'. In this phase, with the correct financial frameworks and

technological advances — and possibly aid from developed countries — poor states could accelerate the capacity to generate and distribute wealth.

Although Rostow's ideas have long been given a discursive burial, the notion that technological advancement is key to unlocking the developmental potential of African economies remains very powerful today. Several contemporary experiments with African development are still framed around the linguistic, temporal and economic categories of technological acceleration. Yet, the lineage of these experiments is not in Keynesian or Neoclassical theories of development economics any longer, but should be traced in the culture of post dotcom-boom Silicon-Valley capitalism[ii], in which *acceleration* is an emic category: both a method and a codified organizational practice of profit-driven technological innovation, centred around the economic subject of the startup entrepreneur.

My broader argument is that acceleration (of this Silicon-Valley kind) is filling a gap in the intellectual and practical crises of legitimacy that African development experienced at the turn of the millennium, offering both a language and a model for new market-oriented experiments with antipoverty. Acceleration, in other words, allows me to chart the interface between the formulation of Africa's developmental futures and what Richard Barbrook and late Andy Cameron famously called 'Californian ideology' (1996)[iii]: a culture of market fundamentalism based on a promethean belief in the salvific power of digital technologies. Specifically, I focus on what I call *poetics of acceleration*, a particular cultural instantiation of the post-dotcom Californian ideology enfolding the fast-paced, future-oriented and failure-prone temporalities of technological entrepreneurship. I argue that such poetics, found across Silicon Valley-bred self-help guides and managerial fads, make space for the figure of the African entrepreneur in ways in which older economic models of development did not.

The second argument of this essay is that the application of the Californian ideology to the world of African development is far from smooth. The interfaces where the poetics of acceleration are mobilized to foster and nurture African entrepreneurs are punctuated by cracks and contradictions. While the political economy of these developmental experiments is perhaps oriented to the creation of new frontiers of technocapitalism in Africa, the actual, often brutal application of Silicon-Valley technooptimism meets a larger variety of responses to its fictions and failures.

To explore how the poetics of this kind of acceleration are mustered in the 'technoscape' of development (Appadurai, 1990), Cape Town is my vantage point. At the south-westernmost tip of the continent, Cape Town is often described as the *Silicon Cape of Africa*, or its *digital gateway*. The city hosts the largest number of technology companies in Africa (Startup Genome, 2017), and vehicles a wide slice of global venture capital directed to African high-tech startups (SAVCA, 2018). An unwitting alignment of local developmental governance, large corporations, technology entrepreneurs and colonial legacies, has generated a strong regional advantage in the startup economy (Pollio, 2020b). Although other African tech hubs are emerging, in East and West Africa[iv], both Microsoft and Amazon chose Cape Town as the first node of their cloud computing infrastructure in the continent. As I will detail later, acceleration is not unrelated to the emergence of Cape Town as Africa's leading tech city and as a logistical hub for the global Cloud.

Drawing on four years of ethnographic and archival research in the making of Cape Town's techno-entrepreneurial scene[v], this essay focuses on two manifestations of the interface between Silicon Valley cultural capitalism and development: the introduction of the *Lean Startup* method of acceleration among developmental organization and enterprises; and the acceleration of the United Nations (UN) *Sustainable Development Goals* (SDGs) through dedicated, Africa-wide initiatives that engineer new pipelines for high-risk capital. The two empirical sections of the essay include vignettes of what Anna Tsing (2011) would describe as 'frictions': instances, temporal and spatial, in which the world of African development and the world of technocapitalism rub against each other. Acceleration provides a patch to these frictional interfaces: a shared language between the living legacies of modernization theory and the technocultures of the Californian ideology.

I begin this essay with an outline of the late twentieth century crisis of development, drawing on the selected work of a group of scholars who have discussed the centrality of entrepreneurial empowerment in the contemporary remaking of modernization theory. I then move on to chart how the Silicon Valley ideology shapes contemporary experiments with African development, weaving together the writings of three important entrepreneurs (Eric Ries, Paul Graham and Brad Feld), who, in a kind of self-ethnographic fashion, have produced a global written culture around the poetics of acceleration. My aim is to bring into dialogue several years of ethnographic work with literatures that are not usually read together[vi] — critical ethnographies

of development, digital geographies, and cultural economy of Silicon Valley — to explore the frictional, often misunderstood frontiers of technocapitalism in Africa.

Before moving on, a clarification is in order, because the concept of *acceleration* has multiple histories and genealogies which I cannot fully address here. Most notably, I do not explore the cultural field of *accelerationism*, a diverse intellectual movement which questions the relationship between technology and capitalism (Wark, 2019). For so-called *accelerationists*, technocapitalism should be intensified, accelerated, and automated. Accelerationism has spokespeople both left and right of the political spectrum. For right-wing accelerationists, there is no better alternative than an accelerated capitalism. For left-wing accelerationists, by speeding up the self-destructive nature of capitalist forces, a new world order may stem from reaching the breaking-point of technological advancement. My aim in this essay is not to critique these positions (cf. Noys, 2014), but to offer an alternative — if anything in its African geography — cultural economy of Silicon-Valley acceleration. Attentive readers will no doubt recognize the similarities and the discrepancies between the accelerationists' acceleration and the acceleration of development that I discuss hereafter.

Millennial development and the Californian ideology

By the late 1990s, even the World Bank was ready to abandon the Washington consensus (Fine, 1999). It was not the first time that development had traversed a crisis of legitimacy, particularly in Africa, where the aid apparatus had been ridden with failures, pivots and fixes since its inception (Mitchell, 2002). This time, the shared attitude of the World Bank and other Washington institutions was that more entrepreneurial forms of development were needed to address the predicaments of the developing world. This was both a response to the policy failure of previous developmental paradigms such as structural adjustment (Best, 2014) and a rejoinder to critics — most prominently the anti-globalisation movement— who argued that international development had served the interests of large corporations and done little to lift the majority of the world out of poverty (Elyachar, 2002).

Such a 'gentler' and more entrepreneurial version of development (Roy, 2010, p.7) found a very explicit articulation in the United Nations (UN) Millennium Development Goals (MDGs),

and in a series of doctrines that were explicitly presented as market solutions to structural poverty. These diverse theories — ranging from the influential writings of neoliberal gurus like Hernando de Soto and C.K. Prahalad to the appropriation of the 'informal economy' and 'social capital' by humanitarian NGOs (Elyachar, 2005; Li Murray, 2007) — shared a common subject: the *Third World* entrepreneur. For example, the *bottom of the pyramid* (BOP) approach, which started as a call by late economist Prahalad (2005) for multinational corporations to engage the largely untapped market that existed within the poorest section of the world's population, soon shifted from seeing the poor as consumers (Schwittay, 2011) to romanticizing them as entrepreneurs (Karnani, 2009; Dolan, 2012). Accordingly, survivalist practices at the bottom of the pyramid could be harnessed and imitated to monetize the incipient market solutions that existed among the poor (Elyachar, 2012; Dolan & Roll, 2013). In a similar vein, de Soto's controversial writings on *dead capital* (2000) championed a developmental approach based on the idea that formal regimes of property (and the difficulties in proving property titles) limited the entrepreneurial potential of poor people (Mitchell, 2008). Microfinance and other *empowerment* schemes also hinged on the financialized subject of the rational yet entrepreneurial woman (Rankin, 2001). In other words, entrepreneurship is a thread that connects the disparate discourses and practices of what Ananya Roy has called 'millennial development' (Roy, 2010) — the neoliberal reinvention of modernization theory at the turn of the last century.

A similar trajectory can also be observed in the recent past of contemporary South Africa, the country from which this essay originates. While the apartheid state had used the concept of development to justify segregation (Tapscott, 1995), the rainbow nation embraced the language of empowerment and entrepreneurship as key tools of reconciliation (Manzo, 1995). Notably, the early 2000s' *Black Economic Empowerment* (BEE) program applied the concept of *entrepreneurial empowerment* to redressing the imbalances of economic apartheid. The current *National Development Plan 2030* still relies on the notions of 'entrepreneurial communities' and 'inclusive growth' to tackle extreme poverty and inequality with business development support. In her analysis of these post-apartheid economic policies, anthropologist Deborah James (2011) has thus spoken of 'redistributive neoliberalism': a developmental project of nation building caught between the forces of entrepreneurialization, financialization and the need to reallocate wealth in a deeply divided economy[vii].

While this is a very selective map of contemporary development scholarship, and in fact entrepreneur-centric forms of intervention coexist with older paradigms of development — especially given today's reenchantment with infrastructure-led modernization and megaprojects (cf Mains, 2019) — two key insights drawn from the economic anthropology of the BOP are important here. First, as Dolan and Rajak write, these experiments reflect 'a shift in the wider development industry from the grand schemes of macro-economic restructuring and social transformation that once animated national dreams of modernity, to the entrepreneurial individual as the catalyst to human improvement and national growth' (2018, p. 236). The related move from neoclassical *homo oeconomicus* to the more entrepreneurial, risk-taking, market subject that Nigel Thrift has wryly described as 'homo silicon valleycus' (Thrift, 2000, p. 688), not only nurtures the influential rise of experiments with behavioural economics[viii] (Berndt, 2015; *Stein et al*., 2021) but also poses an important question concerning the need to foster entrepreneurial capacities among the African poor (Dolan & Rajak, 2016). While this appears to be a fundamentally practical question, it is one that has struggled to find a clear response among development experts who experiment with purposively entrepreneurial antipoverty models (cf. Kolk *et al*., 2014).

In fact, the diversity of doctrines that compose 'millennial development' (Roy, 2010) is, in my reading here, a symptom of the fraught place that the figure of the entrepreneur holds in development economics and in economics more generally. Already in an oft-quoted 1968 paper, published in *The American Economic Review*, William Baumol wrote that the entrepreneur was one of the most 'elusive' figures in economic thought (p. 64). Despite the centrality of entrepreneurship as an economic fact, Baumol went on to explain, the entrepreneur was missing from the mainstream theories of the time[ix]. Neither did neoliberal economists have an easy task in integrating entrepreneurship in their 'thought collective' (Plehwe, 2020), as the rational economic 'man' followed a winding path from the very beginning of its intellectual journey (Elyachar, 2020). The same can be said about development economics, where neoclassical theories of static efficiency have dominated the field until recently, leaving little room for theories of the entrepreneur and of technological change, as former World Bank's chief economist Joseph Stieglitz has recently argued at length (Stiglitz & Greenwald, 2014).

What I am suggesting is not a strictly performative reading of economics, as I am not linking a gap in these theories to a practical outcome. Rather, my argument is based on two

empirical observations. The first observation, as I have sketched thus far, is that many of the doctrines of millennial development, from microfinance to *dead capital*, are or contain spurious theories of entrepreneurship. They may not have a fully-fledged epistemic system, as both keynesian and neoclassical development economics do, but they are still theories of the entrepreneur 'at large' (Callon, 2006), in which the latter 'emerges as both beneficiary and catalyst, producer and product of this new economy of development' (Dolan & Rajak, 2016, p. 512).

The second observation, which I will explore in the remainder of the essay, is that at the frictional interfaces of technocapitalism and development in Africa, one does not encounter grand economic theories, but the various self-help books, managerial fads and entrepreneurial guides that Silicon Valley capitalism has produced to make sense of itself. Nigel Thrift (2005) has described this phenomenon as 'knowing capitalism': the production of a culture of self-narration that functions as a force of production itself. My proposal is that the Californian ideology, particularly through what I call poetics of acceleration, is taking on the shortcomings of the economic doctrines of millennial development, which have wrestled with the need to model and induce entrepreneurial behaviour, while aligning new forms of African technooptimism with the promises of a 'second coming' of entrepreneurial capitalism (Comaroff & Comaroff, 2000).

Therefore, my argument in what follows is not so much about the temporal qualities of acceleration as it is about its generative poetics, which become a cultural foil for the bounded, compressed temporalities during which technological entrepreneurship and its narratives are experimented in the creation of antipoverty markets. In other words, I am addressing acceleration as a technocultural narrative rather than as a temporality in itself, although futurity is an important facet of it. In this sense, I take a cue from Dolan and Rajak (2018), who have shown that the 'near future' (Guyer, 2007) is the site of both aspiration and agency for the African entrepreneurs who are cast as the market subjects of millennial development, despite a widely discussed tendency of neoliberal capitalism to operate through either presentist or millenerarian promises (cf. Allison & Piot, 2014). In the conclusion of the essay, I will build on this insight, showing how both the fictions and failures of this new economy of development are, in fact, often rescripted into near futures which are neither fully pragmatic nor technooptimist. Strategic and hopeful at once, these in-between futures perhaps escape, or at least coexist with, the buoyant profit aspirations which are forging Africa's next frontiers of technocapital.

Lean accelerations

During my first field research in Cape Town, in the Autumn of 2015, I met a self-trained tech entrepreneur who slept with a copy of Ash Maurya's *Running lean* on his bedside table. Inside the book, he kept a folded printout of the *lean canvas*, a template that allows entrepreneurs to apply the so-called *lean methodology* to their own startups. The book and the template, as 'placeholders' (Riles, 2000), pointed to hopeful futures of profit and social change, and reminded him to be methodical about engaging such futures. These two objects, as I explain in this section, are also a vivid representation of the material, even affective, presence of lean acceleration theories in the world of African development.

Running lean, the book that rested on my interlocutor's bedside table, is an offshoot of *The lean startup* publishing machine initiated in 2008 by Eric Ries, who has since trademarked the concept of *Lean startup* and sold millions of copies of the eponymous volume. An entrepreneur, investor, and author, Ries is among the best-known evangelists of what I have called *post-dotcom boom* Californian ideology. Specifically, Ries gave a name —Lean Startup— to a trend that had informed almost a decade of new Silicon Valley companies emerging from the ashes of the tech bubble. Borrowing a term that had been used in management studies to describe Toyota's production system as opposed to Fordist mass production, Ries highlighted a shift in the approach of digital ventures since the tech burst. Like Toyota's production manager Taichi Ohno had done in the 1940s, post-dotcom boom companies had recognized the need to better understand their mistakes and their customers. By analysing this shift, Ries explains that acceleration is one of the ontological temporalities of a tech startup. He writes:

> The fundamental activity of a startup is to turn ideas into products, measure how customers respond, and then learn whether to pivot or persevere. All successful startup processes should be geared to *accelerate* that feedback loop (p.18, emphasis added).

The third and last chapter of *The lean startup — Accelerate* — specifically deals with the process of accelerating the feedback loop, a series of activities, from customer interviews to prototyping, that need to be experimentalized according to a protocol that Ries summarizes in three steps: 'build, measure, learn'.

I encountered Ries's lean methodology in one of the first large technology conferences that I attended in Cape Town, in the winter of 2015 — the annual South African Innovation Summit (SAIS). Held in the Green Point stadium, a controversial legacy of the football World Cup that South Africa hosted in 2010, SAIS is one the most important gatherings for innovative businesses in the country. Though privately organised, many government agencies support the event, which is also a stage for cross-institutional networking. As with several of these conferences, tickets are very expensive, because the production value is high. A line-up of illustrious guest speakers — from international tech entrepreneurs to government officials — has been carefully choreographed to offer both public and private perspectives on the state of technology innovation in South Africa and Africa as a whole.

In the early morning of the first day, while field attendants are taking care of the stadium's manicured grass, South Africa's most prominent futurologist Dion Chang opens SAIS with a keynote on how 'the future should become part of the present' as a way of 'doing business or social innovation'. A skilled public speaker, Chang stuns the audience with a dazzling video mashup of innovations happening in Africa: drones fly over a rural village bringing Internet connectivity; a quadcopter endowed with an iPhone-controlled defibrillator lands somewhere in the Savannah and saves the life of a white tourist stricken by a heart-attack; trendy African women use their phones to hail a flying Uber-chopper in an unnamed, bustling metropolis.

Such images of aethereal technologies have a long history in the way in which Californian ideologues have portrayed the future of poor countries, as exemplified by Alvin Toffler's *The third wave* (1980)[x], in which airborne devices bring broadband development to rural settlements. For Toffler, flying broadband drones would allow poor countries to 'leapfrog' modernization, skipping the industrialization phase entirely. There is an uncanny resonance between Toffler's neoliberal accelerationism, the scenes that Chang has conjured, and the more recent Google's helium-filled balloons that will purportedly bring connectivity to rural Africa. More importantly, these images set the stage for Africa's technological renaissance in a looming future that is within reach.

Two days later, on the last day of the summit, the focus of the gathering shifts more specifically to humanitarian development. One of South Africa's largest business foundations (the philanthropic branch of a large sin industry corporation) has organised a masterclass on social innovation with Professor K, a well-known management scholar who has been invited from a

prestigious foreign university. According to the blurb, the workshop is dedicated to social entrepreneurs and will be a crash course in *The lean startup* methodology.

Despite the description, few entrepreneurs have come along. There are, however, representatives of various important developmental NGOs based in Cape Town. In fact, the real targets of the masterclass are not social entrepreneurs *tout court*, but organisations that may become profitable by 'doing good', including the developmental arms of private corporations. Many of these not-for-profit organizations exist as a response to the South African *Broad-based Black Economic Empowerment* (BBBEE) scheme, a procurement system that forces large corporations to garner points based on the percentage of black ownership, black suppliers, black managers, etc. Up to 45 out of 100 points can be gained by using philanthropic and developmental entities to deliver enterprise development and 'socio-economic' development. Put simply, a private company can acquire BBBEE points by demonstrably 'producing' black entrepreneurs through philanthropic initiatives.

Professor K explains that the first part of the masterclass is a showcase of examples of the way in which 'advanced capitalism [is] cracking the shell of humanitarianism', followed by a practical workshop in which participants will learn to use and apply *The lean startup* methodology to their organization. When we get to *The lean startup*, after a long list of case studies, the learning content centres around the business model canvas (BMC), one of the key tools of the lean methodology. Whilst business plans are based on a great number of numerical hypotheses, business models define how value is created for the customers and for the company using an entirely different method of qualitative abstraction. As Professor K illustrates, the BMC frames different forms of value, and allows to measure the future in terms that are not strictly monetary. This, he says, presents a valid opportunity for developmental enterprises.

The BMC is not an abstract entity, but a material object around which the rest of the masterclass revolves. Participants are all given a black-and-white paper copy of the BMC, a template developed by Alexander Osterwalder to frame the '9 building blocks' of a new venture, from customers to costs. To understand how to compile the template's blank fields, we watch a video in which a management expert explains how Nespresso's coffee pods fit the BMC. At that point, somebody from the audience sarcastically asks if the tool could be 'applied to something less evil'.

As a response, we collaboratively test the BMC on a real case on which Professor K recently worked as a consultant: a company producing self-adjustable spectacles to be sold in rural Africa. It is a classic example of the early BOP approach — whereby commodities are created to specifically target the poorest section of the global market. According to his anecdote, Professor K joined the startup at a moment when the founders could not figure out how to scale up their sales. By introducing the BMC, the Professor-turned-consultant showed them that the problem of the company was in the way they abstracted its value proposition. Self-adjustable glasses were too boring, as they did not come in different colours and shapes. The startup had made the wrong assumption about what BOP customers wanted.

Professor K's point is that the BMC allowed the abstractions that the startup needed to carve out the market problems. By separating instances into *fields* and *blocks*, the BMC formalised a process that detached economic issues from social ones, logistic issues from aesthetic ones and so forth. For Ries, this process of abstraction is key to accelerate the feedback loop and become profitable (2008). Despite what Professor K announced at the beginning —that the BMC would be useful to capture non-monetary values — the remainder of the masterclass focuses on using the BMC to recognize or increase profit opportunities for the participating organizations. Beyond a few sarcastic comments and heads shaken, *The lean startup* perfectly fits the developmental mandate of BBBEE NGOs, formulating a Californian solution to the need to accelerate their entrepreneurial capacities.

What we start seeing, with Professor K's masterclass, is the almost effortless translation of a Silicon Valley-codified method of acceleration, *The lean startup*, for the purpose of making development organizations more entrepreneurial, and, given their specific mandate, more capable of producing African entrepreneurs. While business mantras have long percolated to the world of international aid (cf. Mitchell, 2017), *The lean startup* aligns more closely to the practical need of fostering entrepreneurial capabilities at both organizational and individual levels. And yet, not all interfaces are this smooth. A good example of frictions generated by *The lean startup* method is in a failed BOP enterprise, whose CEO Robert and I met around the same time that I attended SAIS 2015. We caught up in the courtyard of Cape Town's business school, on a sunny winter morning. At the time, his startup, the Enterprise Academy, was about to shut down. The story of its downfall, which Robert told me on that occasion, is insightful.

A former education expert-turned manager, Robert had been running the Enterprise Academy for two years in Cape Town, but the initiative had been conceived in the early 2010s at a business university in London. The concept of the Enterprise Academy was to create profit by delivering high-quality business education at the bottom of the pyramid. South Africa, Robert told me, had been chosen as a trial setting to then expand to other parts of the developing world. Such experimental approach had informed the ethos of the organization from its very outset. The creator of the Academy had been able to involve the World Bank to fund the experimental phase, and JPAL, another world-leading institution in poverty expertise, to run a randomized control trial on the World Bank-funded seed.

JPAL is the brainchild of Abhijit Banerjee's and Ester Duflo's, who have recently obtained the Nobel prize for their studies on the economics of poverty. Their approach champions a fact-based, metric-driven testing of antipoverty initiatives (cf. Donovan, 2018). In the specific case, the Enterprise Academy selected two groups of BOP entrepreneurs, working under the same conditions. The first group would receive the Academy's training, while the second group would receive a placebo (no training at all). Using the expertise from JPAL, the Academy then tracked their performances according to specific indicators (such as revenues and sales) and evaluated the metrics of the trainees against the metrics of the control group. In other words, the Academy and JPAL mimicked a medical experiment, with the purported scope of rendering the World Bank investment accountable as well as making the Academy — if metrics were positive — appetible for future investors.

The similarities between *The lean startup* and the JPAL methods are remarkable. In the Academy's case, the metrics-driven approach of the JPAL trial explicitly matched the Build/Measure/Learn mantra promoted by the lean methodology. More broadly, both techniques are meant to reduce *waste* and to accelerate the feedback loop in order to understand mistakes before it is too late. Both approaches are also predicated on a critique of technocracy: Banerjee and Duflo address the top-down view-from-nowhere of development technocrats; Ries addresses the technocentric mindset of software developers who do not understand future users. It was Robert himself who pointed that out to me, explaining that he had originally trained himself in the lean approach in order to understand, as scientifically as possible, if the Academy's proposition would deliver value at the bottom of the pyramid. JPAL offered a method that not only did align with the

premises of the experiment, but would also accelerate the gathering of feedback data required in *The lean startup* approach.

Ironically, JPAL's founders Banerjee and Duflo are also sharp critics of BOP doctrines: they have argued that there is no capital to be harvested at the bottom of the pyramid (2011). Yet, their randomized control trials, as in the case of the Academy, are often mobilized by World Bank experiments that are couched in the BOP doctrine[xi]. Even more ironically, their metrics-driven approach, combined with the teachings of the Lean Startup (which encourages unprofitable startups to fail fast) was the eventual reason for the failure of the Academy. Unfortunately for Robert, the randomized control trial data was, at best, contradictory. When metrics showed that results were meagre[xii], Robert was forced to close the organization down, in spite of the fact that he had successfully delivered business education among informal entrepreneurs who were financially illiterate.

The Enterprise Academy is thus a case in point of the frictions between the accelerated temporalities of the Californian ideology and the contradictions of BOP development, which pledges to 'eras[e] poverty through profit' (Prahalad, 2005). Robert had learned, by his own admission, that it was possible to address poverty without generating profit, but that he had to keep 'playing the capitalist game', he told me, as we saluted goodbye. Albeit cruel, the accelerated failure brought about by the lean methodology had taught him that economic inclusion and profit did not necessarily come together, he explained. And that he needed to be more strategic about the fictions of both: he called it 'the game'. As we will see in the next section, both fictions and failures of the post-dotcom-boom Californian ideology are a key component of the new, accelerated pipelines of technology capital in Africa.

Accelerating the pipelines of capital

In January 2020, a few weeks before the global outbreak of Covid-19, it was the screenshot of a histogram that became viral in the African twittersphere of tech influencers. The graph captured the growth trend of venture capital (VC) in Africa. Compiled by a global investment platform that owns a panfrican VC branch, the chart showed a 74 per cent growth in VC tech deals on the

continent. A striking exponential curve. From less than US$ 300 million in 2015, the VC funding raised by African tech startups in 2019 totalled more than US$ 2 billion (Partech Partners, 2020).

A couple of months earlier, in November 2019, the Master of Ceremonies at the final event of Startupbootcamp Afritech — an Africa-wide entrepreneurial competition — had discussed similar data (for the first time in 2018 VC capital in Africa had crossed the one-billion psychological threshold), and described the 'Great African Acceleration'. It is a 'tectonic shift', she explained, for which 'African startups are developing disruptive solutions'.

To support this tectonic shift, and connect it with capital, each year Startupbootcamp Afritech scouts tech entrepreneurs across Africa and brings them to Cape Town for a fast-paced training school. Startupbootcamp Afritech is, indeed, an *acceleration* program. It starts with a hunt for potential tech startups, through local competitions in other cities across the continent, and culminates with a three-month residency in Cape Town. On the final day, the startup founders present their pitch to potential investors, venture capitalists[xiii] and otherwise. Like SAIS, Startupbootcamp is a highly choreographed event, in which nothing is left to improvisation. More on this later.

As an *accelerator* (or *acceleration program*), Startupbootcamp Afritech replicates in Africa an organizational practice through which early-stage investment in technology startups is funnelled in a pipeline that involves entrepreneurs, mentors, corporations, data infrastructure and various forms of high-risk capital. There are several competing definitions of what an accelerator is, but instead of bearing on academic debates in organization and management studies, I refer to the writings of two of the most prolific evangelists and narrators of the accelerator model: Paul Graham and Brad Feld. Respectively, they are cofounders of two of the largest (by capitalization) acceleration programs in the world: Y combinator and Techstars. The former, started in 2005, has been the cradle of well-known global companies such as Airbnb and Dropbox. The latter, founded a year later in Boulder, Colorado, is now a multibillion-dollar franchise with programs in five continents.

Graham and Feld are brilliant columnists, with dozens of essays in their names, addressing both technical and cultural facets of digital entrepreneurship. Brad Feld is also the author of *Do more faster: TechStars lessons to accelerate your startup* (Feld & Cohen, 2010) and the even more

popular *Startup communities: Building an entrepreneurial ecosystem in your city* (Feld, 2012), a book that has become a field guide for policymakers seeking to produce startup hubs in their cities. Elsewhere, I have discussed (Pollio, 2020b) how Graham's writings circulated at the origin of the Silicon Cape organization, a not-for-profit grassroots group that represents, promotes, and brands the tech ecosystem in Cape Town. Graham's essays on Silicon Valley and New York's Silicon Alley were considered foundational to understand the endemic factors of a startup network's success. Later on, when Silicon Cape was forced to confront its own whiteness and lack of gender diversity, Feld's *Startup communities* became a reference instead. For Feld, one of the key ingredients of a thriving innovation ecosystem is its capacity to embrace diversity and promote inclusiveness by way of collaboration rather than zero-sum competition.

According to both Graham and Feld, an accelerator can be defined as an initiative that periodically brings together a cohort of nascent startups for a short period of time, and rapidly trains them — thanks to mentors in various fields of business development — to become investment-ready for early-stage capital. Graham explicitly links the effort to give an organizational structure to seed capital to the origins of Y Combinator as the first-ever accelerator (Graham, 2012). A common form of early-stage investment, seed capital consists of a small amount of money that builds the necessary financial leverage for a startup to reach its market and break even (that is, the point when total revenues start generating a profit against the total costs); in exchange, the seed investor receives a stake (usually in the form of private equity) in the company. As most startups fail, seed is a usually but not always a small but very risky investment. Before Y Combinator, seed capital was usually provided either by what, in the Californian ideology jargon, is known as the *triple F* — family, friends and fools — or *angels*. The latter are investors who do not offer just capital but also mentorship and training. The breakthrough idea of Y Combinator was to expand and accelerate the angel investing model, by creating a protocol for optimizing the selection of possible candidates, and for merging mentorship, training, and capital[xiv].

By the end of the 2000s, the model provided by Y Combinator and Techstars had travelled globally. It was adopted by both governments and corporations to either streamline profitable, job-creating innovations or to create virtuous cycles for high-risk capital (often both at the same time[xv]). Acceleration programs are now ubiquitous in the 'financescape' (Appadurai, 1990) of

African development too. The World Bank, for example, not only launched an initiative to map startup incubators and accelerators in Africa (Pollio, 2020a), but even ran its own acceleration program: *XL Africa*. The program, like Startupbootcamp Afritech mentioned earlier, featured an Africa-wide selection of promising startups and a short investment-readiness residency in Cape Town, where more than twenty additional accelerators are active as of the end of 2019[xvi]. But how does this type of acceleration speak the language of millennial development? How does the cultural economy of acceleration shape its actual developmental economies in Africa?

To address these questions, Cape Town's Tech Month is a good place to start. A rather recent initiative, Tech Month is a showcase of Cape Town's primacy and maturity in the African startup economy. Held in November, when the Austral Spring blooms in the city, the festival features Africacom (the largest ICT fair in Africa), winery retreats for African investors, local conferences such as *Tech Week*, open days to the city's main technology incubators, and the final pitch events of Africa-wide acceleration programs. In the windy, clear days of November 2019, I attended several of these events, including Startupbootcamp Afritech, which more explicitly than others was formatted as a developmental enterprise.

Startupbootcamp Afritech is part of a global franchise which includes thematic accelerators in other cities: a fin-tech program in London, smart city accelerators in Amsterdam and Dubai, fashion-tech in Milan, and so forth. Although Afritech does not have an explicit 'vertical', but a generic, horizontal, 'African' theme, the declared focus areas of the program feature fields of innovation that are unequivocally developmental, from 'connectivity', to 'financial inclusion' and 'mobile payments' (cf. Maurer, 2012).

In its 2019 edition, Afritech had evaluated a total of 1910 applications from 58 countries (98 per cent of which from Africa) and selected ten startups for the residency in Cape Town. The all-male startup cohort had then received compressed training to achieve rapid commercial traction, with the help of a long list of corporate partners, which act as much more than just external sponsors. In fact, large corporations are a key component of the pipeline for high-risk capital that the accelerator model seeks to engineer. Some of these corporate sponsors are investment and venture capital funds that, in exchange for providing training and mentorship to the graduates, gain first-hand access to the most promising African entrepreneurs every year. Other sponsors are global tech firms such as Google and Amazon. By offering in-kind support — for example limited

access to cloud services — these global tech companies engineer a future customer base across Africa. If successful, the graduates will need more and more storage space and further security solutions, and will therefore have to rely on additional, expensive cloud services. They will also bring the cloud to parts of Africa that are yet to be reached by its long shadow.

The most important partners are not, however, technology companies but large Panafrican financial institutions, mostly insurances and banks. For them, acceleration programs like Afritech produce knowledge about future markets and customers, particularly at the bottom-of-the-pyramid frontiers. Multinational corporations, as Elyachar has discussed (2012), use developmental NGOs to learn about the BOP and produce 'next practices' for their businesses. Acceleration is, in this sense, the next economy's next practice: banks and insurers manoeuvre these accelerated competitions to boost their knowledge about the tech-capital nexus of financial inclusion. This is the not-so-subtle subtext of Afritech partners' involvement (in fact, it is the objective explicitly stated in the promotional brochure of the competition).

Startupbootcamp Afritech does generate investment opportunities for these financial institutions too, but more importantly it fosters a two-fold market making mechanism: the innovation departments in these large corporations provide mentorship to the entrepreneurs and in exchange they get a better sense of how the African tech ecosystem of financial inclusion works in its day-to-day operations. New, better targeted banking and insurance services emerge from a deeper knowledge of the BOP's next tech practices. At the same time, these financial institutions, like Amazon and Google with their clouds, get to sell their products to the startups that they have helped, from credit, to insurance, to other more sophisticated services. To use Prahalad's words (2005), it is a 'win-win' pipeline that connects the cold, temperature-controlled rooms of Amazon's data centres to the warm street transactions of informal African traders, via the glazed corporate offices of the financial industry complex.

The centrality of these large financial companies is evident at the final day of Afritech, hosted in the theatre of one of the oldest African insurance companies. As with other events of this kind, the staging is fundamental. A beautifully shot video teaser opens the gathering. Each startup is welcomed to the stage by a charismatic announcer. A victorious jingle signals the end of their 5-minute pitch, in which they have summarized their business models and their achievements thus far. The Powerpoint slides are sleek and minimalistic. Mentors have helped entrepreneurs develop

a corporate identity, and polished their presentations — including the jokes and the anecdotes that speakers use to enthral the audience.

One of the startups offers a mobile payment platform for informal traders. Its Kenyan founder explains that his business idea involves rechannelling transaction fees to provide informal traders with services that they would not otherwise access, like insurance. A Uganda-based company offers bookkeeping software for investment clubs — a common type of informal male-only social network that works as a saving scheme for its members. Through software bookkeeping, investment clubs — normally unbanked — also get access to formal financial services, such as investment in options and stocks. These startups have made it to the final round for their capacity to create market opportunities for financial institutions that are yet to gain access to the BOP economies of street traders and investment clubs.

A Nigerian startup has developed an artificially intelligent fraud detection system for insurance claims. Also Nigerian is a company that created a blockchain-based land registry that aggregates property titles and allows banks to ease access to credit. By collaborating with the Nigerian Mortgage Refinancing Company, they are already servicing more than a hundred thousand land titles across several states, explains the founder. Their business idea brings De Soto's *dead capital* to the encrypted world of blockchain technologies.

Dreams of truly knowing African markets loom large. 'Africa has a data problem', explains the founder of a machine-learning research software that targets informal markets and sells data to advertising companies. He is soft-spoken and persuasive. But the most eloquent speaker is perhaps the founder of a BOP delivery service, a Senegalese entrepreneur who created a parcel-tracking mechanism that incorporates informal couriers into the logistics of large e-commerce platforms. In his particular case, Amazon is at the two ends of the win-win pipeline — the cloud and the ground. With thousands of parcels delivered each month, he receives what feels like the loudest round of applause of all.

Not all startups target the BOP or have a clear developmental narrative. Yet, in the glossy, colourful brochure given to the public, the last few pages are dedicated to explaining how each accelerated company addresses one or more of the SDGs. Goal 8 and 9, given their banking and industry/finance focus, are the most represented. More generally, as the title states, Afritech is

described as an initiative that is using technological innovation for the purpose of "accelerating the Sustainable Development Goals". It does so through pipelines that, at least on paper, produce BOP win-win mechanisms: for global corporations, a better knowledge of BOP markets and possibilities to invest in or acquire natively African technological innovations; for the makers of these innovations, the chance to shape African technological futures, according to their desires and aspirations.

Still, none of these desired pipelines is devoid of friction. Even at events like Afritech, in which success is the only acceptable language, there are winners and losers. Thousands of African entrepreneurs have not been selected for the acceleration phase. Among the winners, many of them are bound to fail. *The lean Startup* methodology — which they have learnt during the Cape Town residencies — has taught them to fail fast (Tonkinwise, 2016). Despite their promising ideas, investors will ignore many of them. Others will receive seed capital, but will never access any later-stage form of investment. They will eventually need to recognize that the promises of profit at the BOP are extremely limited. Technology startups are ephemeral everywhere, but even more so in Africa, 'where capital is constrained in a very narrow band' —a venture capitalist told me, during an interview in March 2015. What he had in mind, he explained, was the Schumpeterian notion that many companies with the same business model need to fail before their potential is recognized. Failure is so widespread that it becomes indistinct yet productive noise for African venture capitalists.

As a merciless juggernaut, this accelerated development machine churns few successful companies out of thousands of applicants, ideas, dreams and unrelenting hours of work. It is for this reason that events such as Startupbootcamp Afritech — and the other acceleration programs whose final pitching sessions I attended during Cape Town's tech month — are so carefully choreographed as optimistic performances. Optimism is the lifeblood that global corporations and development organizations need in order to believe that these accelerators are widening the African frontiers of technological entrepreneurship and profit. Belief in these futures is indeed a culturally produced phenomenon, Feld and Graham explain between the lines of their writings on acceleration. It is also a fictional enterprise, as Jens Beckert (2016) has argued, and Karl Marx before him. In fact, several of the entrepreneurs I spoke to perfectly knew that; still, they tackled such uncertainty headfirst. Yet, as I tentatively suggest below, their unflinching confidence is not

just a form of 'wounded attachment' to the 'promise machine' (Appadurai & Alexander, 2020) of accelerated development.

What we see in acceleration programs of the likes of Startupbootcamp Afritech is that companies that seek to profit from such initiatives need the frictions generated by individual failure to expand their knowledge and, eventually, their profits at the African frontiers of technological innovation. Not unlike elsewhere in the world, it is through the multiplication of failure that technocapital flows, often in ways that are socially and emotionally destructive for those who perpetuate it (Appadurai & Alexander, 2020). Still, many of the accelerated African entrepreneurs that I have met, over the years, did not *actually* believe that at the end of acceleration was anything but a very likely chance of failing. Ironically, they confirmed why neoclassical economic theorists could not easily incorporate the figure of the entrepreneur within the character of *homo oeconomicus*, but not because of any seemingly irrational risk-taking inclination. On the contrary, they would inject a very rational agency in the training and other seed programs that they had been selected for. Put differently, their hopes were not in any millenarian fortune, but in a very strategic yet hopeful *in-between future*, as also Dolan and Rajak have shown in their work[xvii] (2018).

'I am here to fail', told me a South African entrepreneur who had been selected for a prestigious acceleration program in late 2015. 'But if I fail in three months, I will have survived three more months', she added, explaining how she had become strategic about the risks of her venture – a startup producing 3d-printed, low-cost, building modules to supply government housing programs. She was a charismatic graduate of the local business school, which she had attended after being selected for one of the entrepreneurial academies that business foundations run to obtain BBBEE points, as seen earlier. Using a parametric architecture software, she had modelled the exact combination of size, cost, and sale price that her bricks ought to have. She was interested in creating the perfect algorithm for distributing the value of technological innovation across the multiple relations of production connecting her startup to marginal urban dwellers living in makeshift housing —something she had herself experienced growing up. Survival, I realized, meant more for her than just maintaining the path of upward social mobility on which these entrepreneurial programs had put her. It involved experimenting with redistributive technological possibilities. Needless to say, her visionary company disappeared halfway through 2016. Like many other entrepreneurs I had met before and have encountered since then, she had become

indifferent and yet strategic about what my informant Robert had eloquently called "the capitalist game" of acceleration, which she kept playing.

Conclusion

Rooted in the promise of entrepreneurial inclusion, millennial development (Roy, 2010) has found a powerful ally in the post-dotcom Californian ideology. After a deep crisis of legitimacy that resulted in multiple, pragmatic, experimental doctrines more or less vaguely centred around the economic subject of the entrepreneur, poverty alleviation and technological innovation are once again, if precariously, aligned in the world of African development. In this essay, I have charted how the poetics of acceleration —as seen in the writings of Ries (acceleration as a method), Graham and Feld (acceleration as an organizational practice) — work to bridge theories of development and practices of innovation, straddling the divide between the rational *homo oeconomicus* of the former and the dynamic *homo silicon valleycus* of the latter. Writing from Cape Town, a city that has in the last decade emerged as one of Africa's tech capitals — its Silicon Cape (Pollio, 2020b) — I have shown how acceleration is mobilized to produce more entrepreneurial forms of antipoverty at the contested, uneven interfaces with global technocapitalism.

The poetics of acceleration are therefore *poiesis* —in the sense of productive cultures— of new pipelines of entrepreneurship and technological innovation in Africa. Such pipelines allow global corporations to use market experiments with poverty to deepen their understanding of and, possibly, their dominion over markets that are yet to be fully colonized by technocapitalism. These experiments are shaping the financial logics and the cultural *technics* of digital technology in Africa. At the same time, whether these new pipelines are truly a frontier of expansion of technocapitalism in Africa remains to be seen. It is certainly the hope of global corporations like Amazon and Google, as well as of Africa's financial giants, that accelerated development turns out to be a fertile terrain for selling products and services at the BOP, and for harvesting natively African innovation with the potential to be monetized at much larger scales. This is what, as we have seen, global capitalist companies see in these practices of acceleration: an unwavering series of win-win algorithms. Development experts also seem to share similar hopes. But we should

perhaps resist such frontierist simplification, which places Africa at the tail end — a mere receiver— of new forms of colonial exploration. To use a Rostow's metaphor, such reading of acceleration places Africa, once again, at an earlier 'stage' of modernization.

More importantly, the empirical evidence that I presented in this paper, though perhaps anecdotal, suggests something different. While technooptimism expands the possibilities of profit, and technopessimim seem to characterize critical scholarship of innovation in Africa (cf. James, 2021), the poetics of acceleration discussed in this essay travel to the small worlds of African development generating much more pragmatic and ambivalent responses. Therefore, what comes to be silenced, in overly technopessimist analyses, are not just the frictions and the cracks that are inherent in the experimental practices that bring the Californian ideology's acceleration to the technoscape of development, but also the different futurities that these experiments beget for the individuals and the collectives who inject their agency in these 'capitalist game[s]'.

In fact, while older forms of development were based on a linear teleology, the reference point of these accelerated experiments lies in the near future, but not in the 'not yet' of modernization theory. This is a small but radical change of perspective, as economic anthropologist Jane Guyer has pointed out (Guyer, 2007). In the case of my informants, such perspective crystallized into hopeful yet strategic ways of dealing with uncertainty and projecting their technological imagination much beyond the constraints of the structural crises in whose analytical longevity Africanist scholarship seems often trapped.

Therefore, Silicon-Valley accelerations may not erase any colonial past, as the mobile phones for which natively African technologies are created can be traced to copper and cobalt mines that date back to the scramble for Africa, but they force us to think differently about the ambivalence of the contact zones between technocapitalism and development. Several contemporary African thinkers are indeed challenging us to explore the discrepant futurities that stem from Africa's new engagements with technology (Mbembe, 2017; Mavhunga, 2018; Sarr, 2020). New philosophies of technics are not just in the wake, but necessary (Mbembe, 2019).

In the small space of this essay, my proposal needs to be much more modest: I suggest that while we need to look at the cultural economy of Silicon Valley acceleration to understand African entrepreneurial futures, the latter cannot be reduced to the former. Any predictable outcome of this

new development is not more realistic an assumption than the Californian ideology's promethean trust in the salvific power of technological profits. In fact, African accelerated futures are inspired, financed, funded by Euro-American technocapitalism, perhaps they draw its next frontiers, but they also constantly exceed it, by blurring the lines between success and failure, between the choreographed fictions and the disappointing realities of technological profit at the bottom of the pyramid. These failures and fictions, I suggest, beget in-between futures that still need exploring.

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Endnotes

[i] There are several competing definitions of development, both with capital D and otherwise (cf Hart, 2009). In this essay, I refer to *development* as the machine of knowledge and intervention that, by taking poverty as its entry point, inscribed former colonies — and colonised peoples — in a teleology of modernity, by which they were constructed as 'underdeveloped' and, therefore, in need of a capitalist transition to a modern economy (Chakrabarty, 2000). Frederick Cooper and Randall Packard (1997) have thus defined development as a "technocratic architecture" that informed the political geography of the world in the aftermath of colonialism. For James Ferguson, development was also an 'anti-politics machine' (Ferguson, 1990, p. 250), a technocratic order that, by making poverty a matter of managerial expertise, allowed post-colonial states to at once establish and depoliticize their bureaucratic power.

[ii] But note that a few historians have highlighted the linkages between modernization theorists and the origins of Silicon-Valley capitalism (cf. Mirowski, 2002; Gilman, 2014 [Gilman IS NOT IN THE REFERENCES], Lepore, 2020 [Lepore IS NOT IN THE REFERENCES],).

[iii] The Californian (or Silicon Valley) Ideology is a catchphrase that captures the market fundamentalism of the culture that surrounded the technology boom in Silicon Valley. For Barbrook and Cameron (1996), these libertarian views are based on a 'utopian vision of California [that] depends upon a wilful blindness towards the other —much less positive— features of life on the West Coast: racism, poverty and environmental degradation'. In this essay, I am using both *Silicon Valley* and *California* as metonyms of geographies that exceed these two physical locations. As Gill & Larson (2014) put it, 'Silicon Valley is mobile, or 'transferable' to other identities and places; the metonym offers a 'local' manifestation of high-tech culture that has come to transcend Silicon Valley itself'. (p.532).

[iv] Keeping with the Silicon Valley metonym, one could think of Silicon Savannah in Nairobi and Yabacon Valley in Lagos (cf. chapter 7 of Friederici *et al*., 2020).

[v] The research underpinning this paper began in 2015 as an ethnography of expertise, in which I shadowed and interviewed several technocrats and economic development experts whose work involved rendering antipoverty experiments more entrepreneurial and market oriented. I was interested in how the idea of digital social entrepreneurship had become a powerful technopolitical configuration shaping millennial development. I participated in conferences, hackathons, training sessions, and entrepreneurial competitions. I also explored several archives, intended here in the broad sense of the diverse filing systems that even short-lived startups utilize to organize their knowledge and sense-making activities. Given the digital nature of the work that many of my informants were involved in, in between my first (March-October 2015), second (September-December 2019) and third (December 2020) fieldwork in Cape Town, I kept attending online events, read local tech newsletter, and received constant updates on the Whatsapp groups that Cape Town tech entrepreneurs use as community boards to post anything from job ads to memes. These sector-tracking activities have been complemented informal conversations with experts who have since become friends, and who have been instrumental in tracing some of the lines of analysis that I am pursuing in this essay.

[vi] With notable exceptions, such as Lilly Irani's *Chasing innovation*. For an overview of digital entrepreneurship in Africa, cf. Murphy & Carmody, 2015; Friederici *et al.*, 2020 [Friederici *et al.* 2019 IS NOT IN THE REFERENCES. ONLY Friederici *et al.* 2020 IS SHOWN].

[vii] For a different interpretation of the relationship between redistribution and neoliberalism in Southern Africa cf. Ferguson, 2015.

[viii] For Berndt (2015), however, this move has not really displaced neoclassical economic tenets of individual utility, but simply translated them into a more appropriate paradigm for modelling a rational yet poor economic subject

(Berndt, 2015). For a different take on African economic philosophies centred on the individual as a response to systemic collective failures, cf. Monga, 2016.

[ix] With major exceptions, for example, in the work of Austrian-American economist Joseph Schumpeter. In the social sciences too, entrepreneurship has occupied a complicated place (cf. Swedberg, 2000).

[x] For Barbrook and Cameron (1996) [IN THE REFERENCES ONLY 1996 IS SHOWN. CORRECTION YEAR], Toffler (1980) is a particularly emblematic forefather of the Californian ideology, for his capacity to create a bridge between hippy countercultures and Newt Gingrich's New Right movement.

[xi] For a much more in-depth discussion of randomized experimentalism in development economics see Donovan, 2018.

[xii] I have narrated and analyzed this story in more detail elsewhere (cf. Pollio, forthcoming).

[xiii] I should clarify here that venture capital is a very specific type of equity investment. It is distinct from other forms of early-stage capital, although venture capitalists often diversify their portfolios with different kinds of early-stage funding, and therefore, in popular parlance, venture capital is a catchphrase for any kind of risky investment in startups. I am using 'venture capital' in its narrower sense.

[xiv] Most but not all accelerators are themselves seed investors in the startups that they accelerate. Publicly subsidized accelerators sometimes do not, and only offer in-kind support to access private funders. Corporate accelerators (that is, acceleration programs run by large corporations) may mix the two strategies and only invest in selected startups. It goes without saying that I am simplifying a very complex landscape of organizational and financial architectures.

[xv] As argued by economic geographers who have charted the making of 'startup states' (cf. Moisio & Rossi, 2020; Rossi & Wang, 2020).

[xvi] https://www.siliconcape.com/resources/list-of-accelerators/ [Accessed 10 March 2020]

[xvii] Albeit arriving to a somewhat different conclusion. What they suggest is that the appeal of BOP experiments that nurture entrepreneurial hopes lies in their capacity to equip their 'recruits with the skills to confront and seize the potential inherent in the precariousness of the market, and turn its very insecurity into a bankable opportunity in the medium term'. Relatedly, Birla (2016) has suggested that these failure-prone markets are innerved by a "necroethics of adaptive business competition, of inhabiting uncertainty, precarity, and volatility, and so of enforcing a temporality of obsolescence in the name of survival" (p.665)