NVIDIA COMPLICIT CHIPS

A READER IN PROGRESS FOR THE INFRA-RESISTANCE

Accompanying a deep dive into the nebulous world of software-operated hardware, starting from high density chips produced by NVIDIA.

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This (ever in progress) reader was put together at the occasion of the Complicit Chips worksession.

The collection of texts wasn't assembled with the goal of covering all aspects surrounding the complex conflations of software, hardware, global finance, digital aesthetics, securitisation and militarisation. Rather, it aims to provoke thoughts, trigger conversations and support our collective attempt to articulate interdependencies between global financing, AI, hardware development, and computer graphics. Together, we aimed to better understand the depth of the complicity of these industries in extreme violence, inflicted on occupied territories, migrating bodies, on sites of extraction and ultimately on fellow humans.

We hope that, beyond the context of the worksession, the circulation of this reader can support fellow comrades sharing the desire to pursue divestment from an industry which provides the material means to both our most mundane activities and human rights violations all at once and fully intertwined.

This reader was put together by Femke Snelting, Helen Pritchard and Sofia Boschat Thorez in October 2024. If you have any remarks, suggestions, or work you would like to share for a next version, please reach out to us at: titipi@titipi.org

And if you would consider adopting software attempts at not being complicit in supporting the genocide in Palestine, you can consult the following booklet: https://titipi.org/pub/infraresistance.pdf

In a promotional video for Global CST in 2011, made when he was president of Colombia, Santos praised the company as "people with a lot of experience." Santos told an Israeli TV program that he was excited about the Israeli trainers used by the firm: "We've [Colombians] even been accused of being the Israelites of Latin America, which personally makes me feel really proud." The show mentioned Colombia's 2008 raid into Ecuador and killing of FARC's second-in-command Paul Reyes. The narrator praised the mission: "All of a sudden, the methods that proved efficient in Nablus and Hebron begin speaking Spanish."[7]

The US Treasury under the Trump administration imposed sanctions on Ziv in 2018 for supplying weapons and ammunition to both the South Sudanese government and opposition, a nation at war since 2013. Ziv denied that he was an arms dealer by claiming he had helped the poor nation with its agricultural needs. The US lifted its sanctions in February 2020 without giving a reason. A United Nations report in 2015 confirmed that Israeli weapons were fueling South Sudan's civil war.

The September 11, 2001, terror attacks on New York and Washington turbocharged Israel's defense sector and internationalized the war on terror that the Jewish state had been fighting for decades. On the night of the attack, former Prime Minister Netanyahu was asked on American TV what the attacks had meant for relations between the two nations. "It's very good," he immediately said. He quickly corrected himself: "Well, not very good, but it will generate immediate sympathy." He thought that the assault might "strengthen the bond between our two peoples, because we've experienced terror over so many decades, but the United States has now experienced a massive hemorrhaging of terror."[8] Seven years later, in April 2008, Netanyahu gave a speech at Israel's Bar Ilan University and reiterated the same message. "We are benefiting from one thing, and that is the attack on the Twin Towers and Pentagon, and the American struggle in Iraq," he said. These events had "swung American public opinion in our favor."[9]

Netanyahu was only partly right because he likely did not consider, or even care, that the Western public might become increasingly repulsed by indefinite occupation. Still, by 2004 Israel's economy had recovered from the dot-com crash of 2000 and the Palestinian Intifada, which had scared away international investors. For years Israeli companies did not bother

holding their annual meetings in Israel because so few foreigners showed up.

But Israel had products that the world wanted. Its arms industry fully embraced the homeland security sector, bringing in billions of dollars in revenue for missiles, drones, and surveillance equipment. The message was unambiguous: "We have been fighting a War on Terror since our birth. We'll show you how it's done."[10]

After the 2008 global financial crisis, Israel's resilience in the face of economic collapse was spun into a narrative of unique self-determination. It was best summarized in a 2009 book released by the Council on Foreign Affairs called *Start-Up Nation: The Story of Israel's Economic Miracle*, written by Dan Senor, a former advisor to the US occupation in Iraq, and his brother-in-law Saul Singer, former editorial page editor of the *Jerusalem Post*. The thesis was that Israel thrived due to a range of factors but principally forced conscription. The IDF was a model for the world, the authors claimed, because of the close relationship between the Israeli government and tech start-ups, the former funding and supporting the latter.[11]

In a 2014 interview, Singer expanded on the book's thesis, explaining that Israel is itself a start-up: "That is an idea that took a lot of drive and risk-taking to turn into a reality." Furthermore, Israel is a "country of [mostly Jewish] immigrants, and immigrants tend to be more driven and willing to take risks."[12] In countless interviews over many years, Singer and Senor spent time talking about "innovation" but little about what was actually being developed to generate the biggest profits: defense companies whose primary aim was to monetize the occupation and sell that experience in controlling another people to a global market.

In one section of *Start-UpNation*, the authors gush over the IDF and American military, believing that both in different ways provide a model for leadership and success, completely ignoring the realities of what these organizations have done in the last decades, particularly in occupying Muslim lands. "While a majority of Israeli entrepreneurs were profoundly influenced by their stint in the IDF," they write, "a military background is hardly common in Silicon Valley or widespread in the senior echelons of corporate America."[13]

The collective belief among Israeli Jews in supporting a Jewish-majority state was supposedly essential for developing world-class weapons and technology. One Israeli entrepreneur, Jon Medved, compared this unfavorably to the US: "When it comes to US military resumes, Silicon Valley is illiterate. What a waste of kick-ass leadership talent coming out of Iraq and Afghanistan."

This kind of thinking led to more than a decade of Netanyahu pushing for Israel to become one of the world's leading tech developers, with an expertise on weapons, surveillance and cyber tools. Both the Israeli government and private companies promoted their products as effectively battle-tested on Palestinians. For example, Israeli technology was sold as the solution to unwanted populations at the US–Mexico border where the Israeli company Elbit was a major player in repelling migrants. European governments also wanted to monitor refugees, so Israel Aerospace Industries (IAI) drones were employed for the task.

The start-up nation ideology requires constant marketing, however, because the competition is fierce. In 2022 IAI launched an advertising campaign to lure potential new recruits from the often better-paying tech sector. The ads aimed to convince young Israelis that working in the defense sector was the most ethical decision they could make. Not everyone was convinced, with one person tweeting in response: "They [IAI] should have just written: 'Instead of writing code that will get thousands of people addicted to poker [when working in tech], come work with the IAI and write code that will kill those very same people with guided missiles, drones and smart munitions'."[14]

"Cyber is a great business," Netanyahu told Tel-Aviv University's seventh annual cybersecurity conference in 2017. "It's growing geometrically because there is never a permanent solution, it's a never-ending business." A *Forbes* contributor, Gil Press, who attended the event, later wrote that after briefings from Israel's Ministry of Foreign Affairs he concluded that the success of Israel's surging cyber sector was due to massive government support and placing the military as a "start-up incubator and accelerator." It was taking a large part of the then global US$82 billion cybersecurity industry by often testing new cyber defenses in Israel before making them global. What this meant in practice was that

many of the "problems" that Israeli firms were positing would be "solved" by veterans of the IDF.[15]

More than two decades after September 11, 2001, Israel's gamble paid off with surging global interest in its defense and surveillance sectors. In 2020, Israel spent US$22 billion on its military and was the twelfth biggest military supplier in the world, with sales of more than US$345 million.

The world indeed took notice. Global public opinion in the US toward Israel has taken a nosedive since 2001. Liberal and Democratic voters are increasingly skeptical of Israeli actions. Consensus in the Jewish community has become impossible. A survey in 2021 conducted by Jewish Electorate Institute, a group led by leading Jewish Democrats, found that 34 percent of Jews agreed that "Israel's treatment of Palestinians is similar to racism in the United States," 25 percent agreed that "Israel is an apartheid state," and 22 percent agreed that "Israel is committing genocide against the Palestinians."

A 2022 survey by the major pro-Israel lobby group, the American Jewish Committee, confirmed this trend. Nearly 44 percent of young Jewish Americans didn't feel very connected to Israel and more than one in five millennial American Jews backed one democratic state in Israel and Palestine. Another study in the same year, conducted by Pew Research Center, found that young Americans under the age of thirty viewed both Israelis and Palestinians equally favorably.

Israel's deteriorating image in many Western nations has had little impact on the desire by mainstream Israelis to continue the occupation, the key source of disquiet from London to New York. If anything, it has made Israeli Jews more belligerent and determined to maintain the status quo because there has been virtually no political, military, or diplomatic price for doing so. The post-9/11 war on terror reinforced Israel's decades-long practice of helping other states fight their own battles against unwanted populations. It was done with arguably less embarrassment because now the world's only superpower was doing exactly the same thing, regardless of whether it was led by a Democrat or Republican president.

Israel has thus fully embraced the "war on terror" and richly profited from it. One of the most successful though bloody counterinsurgency battles of the early twenty-first century was the Sri Lankan government's destruction of the Tamil Tigers militant group. Israel played a key, though largely

FEATURE

Imperialism, climate crisis and Palestine liberation

We need to look at the Palestinian cause as a fundamental cornerstone to our struggles against US-led imperialism and global fossil capitalism, argues **Hamza Hamouchene**

30 August 2024

6 to 7 minute read

Settlers setting Palestinian land and olive trees on fire in Beit Ummar, West Bank in 2009

CREDIT: PALESTINIAN SOLIDARITY PROJECT

At the climate Summit, COP 28, held in Dubai in December 2023, Colombian President Gustavo Petro declared that 'Genocide and barbaric acts unleashed against the Palestinian people is what await those who are fleeing the south because of the Climate Crisis…What we see in Gaza is the is the rehearsal of the future'.

I think he is right. The genocide in Gaza can be a harbinger of worse things to come if we don't organize and fight back vigorously. The empire and its global ruling classes would be willing to sacrifice millions of black and brown bodies as well as white working-class people so they can continue accumulating capital, amassing wealth, and maintaining their domination.

Shifting costs to nature

Capitalism has always been a system of unpaid costs. The costs are systematically externalised and shifted somewhere else: a) to women and carers in terms of social reproduction that is largely

unpaid, b) from urban to rural areas, c) from North to South where sacrifice zones are created, a dynamic facilitated through dehumanisation, othering and racism; and d) externalising costs to nature and treating it for centuries as an entity to dominate and plunder, if not to commodify but also considering it as a waste sink. This led to the ecological and climate crisis.

The impacts of the global climate crisis we are going through are differentiated through class, gender, and racial lines, as well as between urban and rural areas, North/imperial cores vs South/peripheries. They are also distinguishable through coloniser-colonised lines.

Palestinians and Israelis inhabit the same terrain but there is a huge disparity in impact and vulnerability because Israel settler-colonialism has grabbed, plundered and controlled most resources from land to water to energy and has developed, on the backs of Palestinians and with the active support of imperialist powers the technology that will help to relieve some of the impacts of the climate crisis.

> “The impacts of the global climate crisis are differentiated and distinguishable through coloniser-colonised lines”

Global climate justice and Palestinian liberation

It may feel misplaced or even not appropriate to talk about climate and ecological issues in the context of genocide in Gaza, but I would argue that there are important intersections between the climate crisis and the Palestinian struggle for liberation. In fact, I would say that there will be no global climate justice without the liberation of Palestine and that the Palestinian liberation is also a struggle to save the earth and humanity. This is not mere sloganeering, and I will explain in the paragraphs below.

First, Palestine today perfectly demonstrates the ugliness of the current system and concentrates its deadly contradictions. It also shows its tendency to be moving towards the usage of cruel outright violence on a large scale. Gramsci once said: ‘The crisis consists precisely in the fact that the old is dying and the new cannot be born…In this interregnum, a great variety of morbid symptoms appear’.

Second, what is taking place today in Gaza is not just genocide. I am not sure we have the right terminology to describe all the destruction and death unleashed today on Palestinians. Notwithstanding this observation, what is also happening is an ecocide or what some described as a holocide, which is the annihilation of an entire social and ecological fabric

Third, the genocidal war in Gaza as well as other wars also highlight the role of war and the military-industrial complex in exacerbating the ecological and climate crisis. The US army on its own is the single largest institutional emitter in the world, larger than whole Western countries such as Denmark, and Portugal. In the first two months of the war in Gaza, Israel’s emissions were higher than the annual emissions of at least twenty countries. About half of these were due to weapons transportation by the US to Israel. The US is not only an active player in the genocide but also a significant contributor to the ecocide taking place in Palestine.

Fourth and this is my main argument (based on the work of Adam Hanieh and Andreas Malm): we cannot dissociate the struggle against fossil capitalism and US-led imperialism from the struggle to liberate Palestine. Israel as a Euro-American settler-

colony in the Middle East is an imperial advanced outpost. Alexander Haig, US secretary of state under Richard Nixon once Put it bluntly: 'Israel is the largest American aircraft carrier in the world that cannot be sunk, does not even have one American soldier and is located in a critical region for American national security'.

The Middle East and the global fossil regime

The importance of the Middle East in the global capitalist economy cannot be overstated. Not only does the region today play a major role in mediating new global networks of trade, logistics, infrastructure, and finance, it is also a key nodal point in the global fossil fuel regime and plays an integral role in keeping fossil capitalism intact through its oil and gas supplies. In fact, the region remains the central axis of world hydrocarbon markets, with a total share of global oil production standing at around 35 percent in 2022. Israel has also been seeking to play a role as an energy hub in the East Mediterranean (through newly discovered gas fields such as Tamar and Leviathan), an aspiration bolstered by the EU's attempts to diversify its energy sources away from Russia in the context of the War in Ukraine. The genocide that Israel is carrying out wasn't an obstacle for granting licences to various fossil fuel companies to explore for more gas in the first weeks of the genocidal war.

Two main pillars today form edifice of US hegemony in the region: Israel and the oil-rich Gulf monarchies. Israel as the number one ally in the region plays a fundamental role in maintaining the domination of the US-led empire in the region (and beyond) as well as its control of its vast fossil fuel resources, mainly in the Gulf and Iraq. It is within this framework that we need to understand the US' and its allies' efforts in politically and economically integrating Israel in the region from a dominant position: pioneering technology, weaponry and surveillance material but also water desalination, food production through agribusiness, energy, etc.

The normalisation deals between Israel and other Arab countries go back to the Camp David Accords of 1978 between Israel and Egypt and to the peace treaty between Jordan and Israel in 1994. A second wave of normalisation, the Trump-brokered Abraham Accords, took place in 2020 with the United Arab Emirates (UAE), Bahrain, Sudan, and Morocco.

> "The Palestine liberation struggle is not merely a moral and human rights issue but is a struggle against US-led imperialism and global fossil capitalism"

Before the 7th October attacks, it was expected that Saudi Arabia and Israel, under the patronage of the US, would sign a similar deal cementing the US imperial designs for the region. This would have liquidated, once and for all, the Palestinian cause. Hamas, an integral part of Palestinian resistance, disrupted these plans through its 7th October attacks.

The Palestine liberation struggle is thus not merely a moral and human rights issue but is fundamentally and essentially a struggle against US-led imperialism and global fossil capitalism. There will be no climate justice without the dismantling of the deeply racist Zionist settler colony of Israel and without the overthrow of the reactionary Arab regimes, chiefly the gulf monarchies.

Palestine is a global front against colonialism, imperialism, fossil capitalism, and white supremacy. It is incumbent on all of us from

climate justice activists to anti-racist organizations and anti-imperialist agitators to actively support Palestinians in their liberation struggle and uphold their undeniable right to resist by any means necessary!

The task in front of us is very challenging but as Fanon once exhorted us to do, we must, out of relative obscurity, discover our mission, fulfil it, and not betray it.

This is a lightly edited version of a speech that Hamza Hamouchene gave in a panel at the Black Lives Matter Liberation Festival, held on 13 July 2024 in London

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In Clover

Laleh Khalili

When McKinsey Comes to Town: The Hidden Influence of the World's Most Powerful Consulting Firm
by Walt Bogdanich and Michael Forsythe.
Bodley Head, 354 pp., £20, October 2022, 978 1 84792 625 8

Vega Gupta's wedding was a four-day, three-million dollar extravaganza held at a five-star hotel in Sun City, South Africa, in May 2013. Two hundred guests arrived from New Delhi on a chartered Airbus that was allowed to land at a nearby military airbase. Vega's uncle Atul Gupta met the guests, who were taken to the resort without any passport or visa checks. One hundred and thirty chefs had been flown in from India to cook 'strictly vegetarian' Chinese, Greek, Italian, Indian, Mexican, South African and Thai food. Personal servants were allocated to the most important guests. South African attendees included President Zuma's daughter Duduzile, his son Duduzane (accompanied by Miss South Africa, Tatum Keshwar) and Zuma's billionaire benefactor Vivian Reddy. Heads of several government ministries, South African Airways, the South African Revenue Service, the national electricity company Eskom, and the state rail, maritime and pipeline agency Transnet, also turned out for the occasion – along with fashion, media, sports and Bollywood celebrities, university vice chancellors and senior partners of McKinsey & Company, KPMG and Deloitte South Africa. In a leaked email, the CEO of KPMG Africa enthused to Vega's uncles: 'I have never been to an event like that and probably will not because it was an event of the millennium.'

Atul, the second of the three Gupta brothers, was the first in the family to emigrate to Johannesburg, where he set up a computer business in 1994. His brothers, Ajay and Rajesh 'Tony' Gupta, soon joined him, encouraged by the business-friendly policies of the new ANC government. The Guptas cultivated connections with ANC politicians and invested in media, infrastructure, cable television, and coal and uranium mining. Rajesh, the youngest, was Duduzane Zuma's business partner, and Duduzane sat on the board of several Gupta concerns. Duduzile Zuma and one of Jacob Zuma's wives were also hired by Gupta businesses.

After Zuma's downfall in 2018, a commission of inquiry led by Justice Ray Zondo found that the Guptas, aided by the president, had cajoled, threatened and bribed civil servants and politicians to help their businesses. The report describes how the 'Zuptas' replaced the heads of government organisations and diverted billions' worth of contracts to companies secretly or openly owned by them. In one instance, contracts for a dairy farm intended to provide employment and nutrition for impoverished communities were issued to a Gupta shell company and the payments routed to secret accounts in the United Arab Emirates. While the animals starved on the farm, the payments were used to meet the bill for Vega's wedding party. This may have been the most brazen of the brothers' acts of state capture, but not the most important: their manoeuvrings hobbled the South African taxation agency's revenue collection abilities and bankrupted state-owned businesses including Eskom, South African Airways and the arms manufacturer Denel. According to Cyril Ramaphosa, the South African president, the Guptas plundered an estimated $32 billion – around 10 per cent of the country's annual GDP.

They had help. The report also charted the entanglement of transnational professional services companies in the Zupta money-making machine. Bell Pottinger, the now defunct public relations firm that worked for unsavoury people and governments from Pinochet and Asma Assad to Lukashenko and the governments of Bahrain and Egypt, ran an 'economic emancipation' campaign on behalf of the Guptas and Duduzane Zuma attacking 'white monopoly capital' – as distinguished, presumably, from the Guptas' non-white monopoly capital. Europe's largest software maker, SAP, paid kickbacks to a Gupta front company to get its customer service software licensed for use by South Africa's Department of Water and Sanitation. At the behest of Zuma, who regularly met with the firm's managing partner in South Africa, Bain & Company consultants reorganised the South African Revenue Service. A raft of experienced officers were lost and the agency's investigative powers curtailed. KPMG, which audited the Guptas for fifteen years, wrote off Vega's wedding costs as a business expense. PwC, the auditor of South African Airways, concluded that the company was in compliance with regulations, when it was actually being deliberately mismanaged and looted by Zupta front organisations. The airline declared bankruptcy in 2019.

Strategic consultants at McKinsey & Company were also implicated in the undermining of South African Airways. Among the charges levelled by the Zondo report is 'the use of external service providers when there were already ably qualified and skilled staff working within the various [agencies]. This use of duplicate external service providers was often a means by which corruption was allowed to flourish.' McKinsey South Africa also partnered with two Gupta front companies, Regiments Capital and Trillian Capital Partners, to secure contracts with Transnet and Eskom. In each case, Zupta functionaries in the state-owned enterprises worked closely with the Gupta front companies, enlisted their help in devising bid conditions, informed them of the details of rival tenders, and used unusual fee structures to overpay them. Infrastructure projects, especially when funded by the state, are always highly remunerative for consultants, planners, designers and engineers. And despite their protestations to the contrary, these state projects keep consulting firms in clover.

McKinsey, founded in Chicago in 1926, opened its first overseas office in London in 1959. Soon, the company was working on projects at the BBC, British Rail, the General Post Office, the NHS and the Bank of England, charged with reorganising, finding 'efficiencies' and generating savings. McKinsey helped nationalise British Steel, and then helped privatise it. In 1967, the British Transport Docks Board commissioned it to produce a report on containerisation. Dockers in London and Liverpool had been striking throughout the year in an attempt to decasualise the process of hiring workers. As the minister of labour, R.J.

Gunter, reported to Parliament,

> there has been a virtually complete strike of dockers in Liverpool and Birkenhead since 18 September. In London, the Royal Group, West India and Millwall docks, and to a lesser extent London and St Katharine's docks, have also been affected. These strikes, which are unofficial, now involve about 16,000 men, and have caused serious interference with trade, in particular with exports.

In its report, McKinsey suggested that containerisation was the palliative for an unruly workforce whose demand for better wages and working conditions was eating into the profits of the shipping and port management companies. McKinsey argued that containerisation would better utilise 'material resources … through improved process control'. More important, 'expensive labour can be replaced with cheaper capital equipment.' Cutting back on labour was not only value for money: it removed the unpredictable human factor.

I WAS HIRED by the Houston office of Andersen Consulting straight out of an engineering undergraduate degree in 1991. Every spring, the consulting firms arrived on campuses and scooped up imminent graduates with good grade point averages. They hired everybody from engineers to English majors, though those with a technical education were put on a starting salary of $27,000 a year; the humanities graduates earned a few thousand dollars less. In the 1980s and 1990s, the Big Six accounting and professional services firms – previously the Big Eight, later Big Four – all had consulting operations, which enabled them to provide clients with strategic advice and software services as well as fulfilling their original tax and audit functions. Andersen Consulting was the only one to have branched off from its parent company, Arthur Andersen, under a slightly different name.

The Andersen Consulting new hires were shipped to a programming bootcamp in St Charles, a suburb of Chicago. None of us had cars, so the three weeks there were spent entirely on campus, working overtime, getting blind drunk and secretly snogging one another in the stairwells. The bootcamp wasn't just about teaching us a programming language (COBOL was soon obsolete anyway). It was really a process of habituation – or indoctrination – into working very long hours and performing competence and confidence. Afterwards, we were all sent back to our respective offices and from there to client sites. Many of us wished we could work in the New York or Chicago offices, but those jobs seemed to be reserved for graduates of Ivy League universities. Regional offices served the businesses based in their states, and the practice continues today.

My first client was USAA, a San Antonio-based insurance company serving the US military, as well as veterans and families. I think we were installing a piece of customer service software for them, built from scratch. The Andersen team at USAA included two dozen new consultants like me. We weren't earning a great deal but were being charged to the client at hundreds of dollars per person per hour. We worked long hours: seventy or eighty-hour weeks weren't unusual. We learned software design on the job, but never really knew much about the business, compared with the experienced USAA employees whose tasks we were automating.

There was an expectation of massive staff turnover at Andersen, and if you hadn't made 'senior' in two years, you were gently ushered out of the firm. When I hooked up with another Andersen consultant in Atlanta, I moved there and got a similar job at Price Waterhouse (which later merged with Coopers & Lybrand to become PricewaterhouseCoopers or PwC). I was assigned to projects designing customer service software for the local mobile phone company; circulation and advertising systems for mid-sized newspapers owned by Thomson Reuters throughout North America; and, best of all, pre-internet matchmaking software to be installed in kiosks and used by lonely hearts.

A few years after I left Andersen, the company changed its name to Accenture. A commercial dispute had begun between Andersen Consulting and its audit and tax counterparts at Arthur Andersen, after the latter set up a rival in-house consulting group. After three years, a commercial arbitrator decided to sever the relationship between the two firms, and in January 2001 the consulting business was forced to give up the Andersen name. A few months later, when Arthur Andersen's criminally negligent audit of Enron led to both companies' collapse, Accenture's $100 million rebranding exercise must have seemed like a blessing in disguise.

When I was first hired, Andersen Consulting had 21,000 employees. Today Accenture employs 721,000 consultants around the world, has 10,000 managing partners, and is listed on the New York Stock Exchange. The vast majority of staff are involved in installing software – often designed by specialist firms like Oracle or SAP – and managing the data storage and access infrastructures for large firms and governments.

In the US and abroad, the Big Four professional services firms and Accenture work alongside Booz Allen Hamilton, which provides technical consulting services primarily to governments, including military and intelligence agencies. Edward Snowden, who in 2013 leaked a trove of signals intelligence data and revealed US domestic and foreign mass surveillance programmes, was a Booz Allen consultant at the NSA and before that an agent at the CIA. Booz Allen also helped the UAE set up its intelligence agency with the blessing of its US counterparts, passing on skills in 'data mining, web surveillance, all sorts of digital intelligence collection' to the Emiratis so that they could, for example, better track Iran's activities.

MANAGEMENT CONSULTING, in its various guises, was the bastard child of Frederick Taylor's 'scientific management' and engineering-besotted railway planning in the age of US continental colonisation. The top-tier strategists in central offices descend from the former; the software developers in regional outposts from the latter. Strategic corporate work in the early years included consulting on executive compensation, product marketing surveys, organisational restructuring, and budgetary and operational controls. On the engineering and technical side, large-scale complex systems like energy providers, railways and maritime transportation lent themselves to pseudo-scientific consulting bromides that provided – for a handsome fee – copyrighted guides to efficiency, strategic growth and operational effectiveness. The aim was to maximise profit, enrich management and shareholders, and circumscribe worker militancy. Outside the US, as the Cold War raged, management consultants were willing foot soldiers in the global battle for capitalism. A 1960 report by the *New York Times* exalted the US firms that were 'aggressively' packaging and marketing management advice on 'whatever their specialities – dams, textiles, or general management help'. As the *Times* put it, 'besides being asked to aid United States companies seeking to stake out new markets abroad' consultants were also 'in heavy demand among the foreign concerns eager to resist the invaders'.

The first consulting firms to set up offices in Europe – McKinsey, Booz Allen Hamilton and Arthur D. Little – initially served corporate clients. But they also worked closely with governments in Asia, Africa and Latin America. In Puerto Rico, Richard Bolin of Arthur D. Little advised the US colonial administration and was involved in setting up a factory enclave subject to minimal regulations in 1947 – he called it Operation Bootstrap. The enclave became a model for export processing zones, or free zones, worldwide. Bolin developed the use of maquiladoras in Ciudad Juárez on the Mexico-US border. The number of these factories increased hugely after the North American Free Trade Agreement was signed in 1994. They are known for their exploitative conditions and the horrific femicide of workers and local activists, memorialised in Roberto Bolaño's monumental novel 2666.

Booz Allen Hamilton's clients in the 1950s mapped the US's Cold War interests. The former CIA agent Miles Copeland – father of the Police drummer, Stewart Copeland – was employed by Booz Allen fresh after instigating coups in Syria and Iran. In 1953, he was sent to Egypt on assignment from both his former and current employers. His Booz Allen consulting work involved tracing the complex holdings of the Egyptian national bank, Banque Misr. The CIA wanted him to help President Nasser set up a new intelligence agency, the Mukhabarat. In the same year Booz Allen was brought in to set up a register of land ownership in the Philippines, where Edward Lansdale of the CIA was directing covert operations against the Huk insurgency of landless peasants. In the face of communist and anticolonial demands for the expropriation of large landowners – including US companies – management consultants instead touted the benefits of gradual reform, including issuing titles to small plots of land, to relieve revolutionary pressures.

In 1957, McKinsey was hired by Royal Dutch Shell, then the world's largest oil company, to decentralise its management across its two headquarters in The Hague and London. The decentralisation model was so ardently adopted – in the US, it was applied even to universities – that by the early 1970s, as the historian of management consulting Christopher McKenna has argued, the major firms had 'quite literally decentralised most of the large companies in Europe'. To keep their profits flowing in, management consultants turned to big state institutions, reorganising government departments, conducting industrial studies and evaluating international markets.

Even when their projects failed – Walt Bogdanich and Michael Forsythe write that a McKinsey-led reorganisation of the NHS in 1974 was a 'proliferation of paper' and a bureaucratic mess – they were hired again and again by the British government to reduce employee numbers and institute unpopular reorganisations that seemed merely to thicken the ranks of middle managers. They also provided plausible deniability to the ideologues in power. The abundance of privatisation projects initiated when Thatcher was prime minister was presented as being driven simply by the need for good management. But McKinsey's work continued – and accelerated – under New Labour. Tony Blair's policy adviser on the NHS, Penny Dash, went on to join McKinsey, and a McKinsey senior partner, David Bennett, became Blair's chief policy adviser, and later the chief executive of Monitor, the NHS regulator. The revolving door between McKinsey, regulators, policymakers and businesses is a consistent feature of the consulting businesses.

Bogdanich and Forsythe's book is a damning account of the way McKinsey has made workplaces unsafe, ditched consumer protections, disembowelled regulatory agencies, ravaged health and social care organisations, plundered public institutions, hugely reduced workforces and increased worker exploitation. It begins with an account of McKinsey-driven cost-cutting at US Steel, which led to the deaths of two steelworkers. Similar measures at Disney resulted in a young man being crushed to death on the Big Thunder Mountain rollercoaster. Decades after the consequences of smoking became clear, McKinsey continued to work for the big tobacco producers. As the extent of the US opioid epidemic became apparent, McKinsey advised Purdue Pharma to find 'growth pockets' where OxyContin could be more easily prescribed, and lobbied regulators for laxer rules on prescriptions. McKinsey's unethical activities pack the pages of this book, while its supercilious vocabulary of 'values' and 'service' runs like an oil slick over slurry.

The primary product sold by all management consultants – both software developers and strategic organisers – is the theology of capital. This holds that workers are expendable. They can be replaced by machines, or by harder-working employees grateful they weren't let go in the last round of redundancies. Managers are necessary to the functioning of corporations – or universities, or non-profit organisations – and the more of them the better. Long working hours and bootstrap entrepreneurialism are what give meaning to life. Meritocracies are a real thing. Free trade, laissez-faire capitalism and reduced regulation are necessary stepping stones towards the free market utopia. There is also a faith that this work is helping 'create positive, enduring change in the world', as McKinsey's mission statement puts it.

Many management consulting firms' most lucrative contracts are with crisis-hit governments. Healthcare services during the Covid pandemic were a huge source of profit. A ProPublica investigation in July 2020 found that McKinsey was making '$100 million (and counting) advising on the [US] government's bumbling coronavirus response', but it wasn't clear 'what the government has gotten in return'. Around the same time, the UK government paid the firm £560,000 for a six-week project to provide 'mission and vision' for the track and trace programme headed by the Tory life peer Dido Harding, herself a former McKinsey consultant. Harding's husband, John Penrose, another former McKinsey consultant and a Tory MP, was at the time the 'anti-corruption champion' at the Home Office. During the pandemic, he hit the headlines for trying to absolve Owen Paterson, a fellow Tory MP, who had improperly lobbied on behalf of a private firm specialising in Covid testing.

By May 2021, the UK government had paid more than £600 million to management consultants for Covid-related projects, with Deloitte's £279 million contract to deliver a track and trace system the largest single item. Accenture and McKinsey had 32 contracts between them. The details of many of these are still to be revealed. Meanwhile, NHS Digital, the national provider of information services to the NHS, paid 15 per cent of its 2018-19 budget to Accenture for software projects. The chair and one non-executive director of NHS Digital were former senior employees of the firm. In September 2021, Accenture was awarded up to £2.6 billion in contracts with the UK government, for hardware, software and IT advice.

A US government website records the number of federal contracts given to various contractors. For some consulting firms, the trajectory of spending has risen steadily since 2009. The graph showing McKinsey, Boston Consulting Group and Booz Allen Hamilton contracts spikes during the Trump administration. The Department of Homeland Security

and the Pentagon paid all three firms lavishly for ‘engaging human-centred design’, developing a ‘culture of continuous improvement’ and other meaningless bits of management-speak festooned with cryptic acronyms. In many cases, the contracts are labelled ‘solicitation only one source’, meaning that no rival bids were sought. Two contracts with the US government procurement agency, the General Services Administration, which earned McKinsey $1 billion between 2006 and 2019, had to be terminated because the company refused to submit to an audit.

McKinsey’s most controversial recent public contract in the US was with Immigration and Customs Enforcement. It had been tendered under Obama, and was originally awarded for a reorganisation of the agency. After Trump took office, the project became quite different: to help the agency halt ‘illegal immigration’. McKinsey’s report for ICE suggested cost-cutting measures such as reducing food and medical budgets in detention facilities, as well as speeding up deportations. McKinsey was also awarded contracts with Customs and Border Protection for projects on ‘impedance and denial capability’ and ‘programmes that discourage illegal entries’. The subject of one contract was a single word: ‘Wall’. When the younger and more liberal consultants at McKinsey expressed their distress about the company openly doing the xenophobic president’s dirty work, the senior partner in charge sent an email to the entire firm reminding staff who they worked for.

Overseas, McKinsey, Boston Consulting Group and Booz Allen Hamilton have aligned themselves with Mohammed bin Salman, who has monopolised the levers of power in Saudi Arabia since his father became king in 2015. Booz Allen’s work in the kingdom predates his rise. In 2012 the US government sent it there to prepare and instruct the Saudi navy. The company also has a contract to train Saudi Arabia’s cyber workforce, especially in ‘information operations’.

McKinsey and Boston Consulting have provided the crown prince with the jargon of capitalist efficiency. McKinsey has been so entangled in Saudi government business that the Ministry of Planning is nicknamed the Ministry of McKinsey. It was also responsible for a report about the poor public reception of bin Salman’s policies, in which detailed profiles of critics were featured alongside their photographs. Khalid al-Alkami, one of the profiled men, was arrested before the report was released in 2018. Another critic, Omar Abdulaziz, a Canadian resident, was called out for having written ‘a multitude of negative tweets on topics such as austerity and the royal decrees’. Abdulaziz’s two brothers in Saudi Arabia were arrested, and Pegasus spyware, widely sold by Israel’s NSO Group to repressive Arab regimes to monitor dissidents, was put on his phone. Jamal Khashoggi, who was murdered in the Saudi consulate in Istanbul in 2018, had been among Abdulaziz’s regular contacts.

In 2016, Boston Consulting and McKinsey staff accompanied five of the crown prince’s courtiers on a tour of the US, where they regaled tech bros, think-tankers and media magnates with bin Salman’s plans for the kingdom. Not long afterwards, Thomas Friedman of the *New York Times* wrote a rapturous profile – ‘I, for one, am rooting for him to succeed.’ McKinsey also sketched the framework for Saudi Arabia’s Vision 2030 – a festival of privatisation, technological innovation, commercial disruption and other familiar bromides – and Boston Consulting Group produced the final report. The crowning glory of bin Salman’s vision is Neom, a futuristic city being built near the Jordanian border in north-west Saudi Arabia. In the non-fantasy world, Neom is an inexhaustible resource for foreign consultants. In the fantasy world, the Neom plans drafted by McKinsey, Boston Consulting and Oliver Wyman include flying cars, robot maids, hologram faculty teachers, a giant artificial moon, glow-in-the-dark beach sand and a medical facility whose aim is to ‘modify the human genome to make people stronger’. Not to mention the Line, a pair of 105-mile-long buildings designed to accommodate nine million people. The marketing material calls it a ‘revolution in civilisation’.

Many of the promised features involve subtracting ordinary humans from the social equation. Robot maids and self-flying taxis won’t organise a union, and hologram faculty won’t give children any revolutionary ideas. The brave new world of labour discipline is already here, and management consultants’ cost-cutting measures and new techniques for the evasion of regulation have ushered it in. One gets the sense that Bogdanich and Forsythe think the consultants they write about are rotten apples, but the barrel is sound. Their own material makes clear, however, that all the services often spoken of as merely helping businesses and government departments run more efficiently – management consulting, audit, software development – are in fact focused on enabling capitalists to enrich themselves further without the inconvenient interference of workers, taxpayers or regulation. Thanks to the hegemonic model McKinsey and other management consultants invented, these firms not only make and remake businesses and government in the image of their laissez-faire fantasies, but see homo economicus as the last word in modern selfhood.

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political stakes at play here. Especially when these processes of "planetary gentrification" (Lees et al. 2016) become enmeshed in new technological environments—one thinks, for instance, of real estate apps that combine locative media routines with pricing and other speculative mechanisms—the city once again becomes a privileged site of accumulation. New strategies of urban governance intertwine with software and database techniques that intersect with the booming world of logistics. It is to this sphere that we now turn.

The Elasticity of Logistics

Like the concept of operations itself, logistics has strong military resonances. According to the military historian Martin van Creveld, logistics arose in the years 1560–1715 as a means for armies to liberate themselves from the "tyranny of plunder" (Van Creveld 1977, 5), by which he means the need to obtain food and other supplies by pillaging and looting from populations in their vicinity. Although the concept of logistics is not developed directly in Carl von Clausewitz's classic *On War* ([1832] 2007), it is possible to derive an understanding of logistical practice from this work (Proença and Duarte 2005). Clausewitz describes what today would be understood as logistics as "preparatory activities" ([1832] 2007, 75) for war. These activities include recruitment, training, marching, eating, and other pursuits considered prior and extraneous to actual military engagement. There can be no doubt that Clausewitz's reflections on war and politics have been influential on subsequent generations of thinkers. Michel Foucault's (1978) famous reversal of Clausewitz's dictum that war is the continuation of politics by other means is only the most recent and celebrated instance of this influence. However, it is a less well known nineteenth-century military thinker who is credited with recognizing the growing importance of logistics in modern warfare. In *The Art of War* ([1838] 2008, 200), Antoine-Henri Jomini, a Swiss officer who served with Napoleon at Jena, asks whether logistics is becoming a "general science, forming one of the most essential parts of the art of war." Today the proposition that military operations, like those in other spheres of human activity, are limited by lines of information and supply seems a truism. But these were notions that were violently forged in the face of material developments and historical transformations. Present-day thinkers (Cowen 2010; LeCavalier 2016) who trace the diffusion of logistical practices into civilian economic life are fond of quoting Jomini as a predecessor who recognizes the leading role of logistics in the organization and execution of war.

Discussions of the so-called logistics revolution of the mid- to late twentieth century explore continuities between the history of logistics as a military art and its more recent history as a means of managing the movement of people and things to achieve economic, communication, and transport efficiencies. In this respect, the study of logistics is haunted by the thesis of the militarization of society. The expansion of business logistics and its related infrastructures is frequently hedged by fears regarding military and geopolitical ambitions. Consider China's recent investments in deepwater shipping ports in countries such as Myanmar, Bangladesh, Sri Lanka, and Pakistan. US and Indian military planners have argued that these commercial ventures form a "string of pearls" that could be converted into a series of naval bases that surround the Indian subcontinent (Dixon 2014). The line between economic and military activity remains thin, at least in the eyes of parties with vested interests. As in the case of the Internet, which also evolved from military technologies, the prospect that logistics advances or intensifies the relation between war and capital cannot simply be conjured away. Indeed, contemporary logistical systems not only offer a means of securing supplies for capitalist enterprise but are also crucial in instituting networked forms of geopolitical security that aim at channeling and monitoring flows rather than interrupting or blocking them (Cowen 2014).

The emergence of logistics as a business proposition and civilian practice dates to the post–World War II period. The logistics revolution culminated in the 1960s, when the introduction of a systems analysis approach to transport and distribution dynamics began to reshape the world of production (Allen 1997). Changes that occurred in this period and its aftermath include the spatial reorganization of the firm, the interlinking of logistics science with computing and software design, the introduction of the shipping container, the formation of business organizations and academic programs for the production and dissemination of logistical knowledge, the development of real-time technologies for monitoring labor, the emergence of global supply chains, and the search for cheap labor rates in poor areas of the world. Logistics moved from being an exercise in cost minimization to becoming an integrated part of global production systems and a means of maximizing profit. The myth that production stopped at the factory gates, challenged in feminist theory and politics, as well as in the

celebrated thesis of the "social factory," was shattered with the evolution of more sophisticated management systems that made the practice of trading labor and transport costs off against each other a more exact science. The assembly and marketing of goods across different global locations, with objects and knowledge constantly moving among them, served to blur processes of production, distribution, and consumption. Logistics also made the organization of global space more complicated and differentiated. Geographical entities such as special economic zones and logistics hubs sprang up to attract investment and organize the business of global production. Increasingly, logistics also came to play a role in service economies and production processes in the media and digital industries.

"If you think of Wall Street as capitalism's symbolic headquarters," writes Kalvin Henely (2012) in a review of Allan Sekula and Nöel Burch's film *The Forgotten Space* (2010), "the sea is capitalism's trading floor writ large." In choosing the world of container shipping to explore the often forgotten logistical conduits and circuits that sustain and contribute to current systems of trade and production, Sekula and Burch join a long line of thinkers who take the empty bulk of the shipping container as a potent symbol of the changes logistics has introduced to contemporary economic and labor practices. Supposedly introduced by the entrepreneur Malcolm McLean in the early 1950s (Levinson 2006) and given an important fillip by the US military's development of the CONEX (Container Express) system, which was put to effective use in the Vietnam War, it was not until 1968 that the International Organization for Standardization corralled key shipping, railroad, and trucking companies to agree on global standards. The container's global diffusion through the spread of intermodal transport systems was marked by labor struggles and attendant changes in economic geography, including the decline of industrial ports such as New York and London and the opening of East Asia as a major site for industrial production. Shifting the object of measure in shipping from weight to volume and introducing a modular logic by which transport costs could be submitted to processes of financialization, the container remains the icon of logistical standardization and efficiency. Yet the imbalances of trade that are characteristic of capitalism's variegation mean that the global movement of containers is uneven, and much logistical energy today is devoted to the shipping and storage of empty containers (Neilson 2015). As Tsing (2009) observes, logistical systems produce as well as eliminate frictions and inefficiencies. Their negotiation and exploitation of geographical, societal, and other differences that they cannot fully control by means of internal governance

mechanisms is a key factor to take into account when asking how logistics has changed the conduct of production and trade.

Although Marx did not use the term "logistics," its importance to capitalist enterprise was already specified in *Capital*, volume 2 (Marx 1978). According to the argument advanced in that volume, capitalist production needs to reduce the circulatory time of capital as much as possible, because during that interval the capitalist cannot convert surplus value into profit. Although the turnover time of capital consists of both production and circulation time, logistical processes tend to dissolve the heuristic division between these two. "Transportation," Marx writes, "is distinguished by its appearance as the continuation of a production process within the circulation process and for the circulation process" (Marx 1978, 229). Logistical efficiency is thus an important part of profit maximization. More than a matter of cost reduction, or the mere transportation to consumers of goods to which surplus value has already been added, logistical modes of coordination are integral to production itself. This analytical frame still provides a powerful way to understand the role of logistics within the heterogeneous landscapes of contemporary capitalism. Logistical operations are important to the reduction of capital's turnover time, whether deployed in economic domains strongly identified with logistics such as transport and communication or applied more generally—for instance, in activities associated with literal extraction and finance.

Crucially, however, such reduction of turnover time does not necessarily mean that processes of production, circulation, and exchange necessarily become faster. Despite the elegant theorizations of Paul Virilio ([1977] 2006), logistics is not the fetishization of speed. Certainly, in many domains of current economic activity, the increased 24/7 pace of production and trade is legion. The instance of high-frequency trading, discussed in chapter 1, is a particularly redolent example. Yet while HFT in many ways represents the becoming logistical of finance, the reduction of capital's turnover time also paradoxically commands strange forms of slowness. Perhaps this is most evident in that form of economic activity that we have identified as the most iconic of contemporary logistical practices: container shipping. In this field, the cutting edge of efficiency is so-called slow steaming. Container ships are becoming both larger (and thus capable of carrying more boxes) and slower in their cruising speeds (a factor that introduces savings and efficiencies due to reduced energy costs). This tendency, which is closely linked with processes of financialization of shipping and consequently of shipbuilding that have made the sector highly unstable in recent

years (see Bologna 2013, 131–47), is driving many logistical developments in commercial shipping, including the refitting of many ports with cranes and other kinds of equipment capable of handling the largest class of post-Panamax craft, the subsequent opening and closing of shipping routes, and the investment in large infrastructural projects such as the widening of the Panama Canal. But it is not these changes on which we want to remark. Rather, we emphasize the *making elastic* of time and temporality mandated by logistical operations that aim to reduce capital's turnover time—the command to both speed up and slow down that is characteristic of current capitalist development and crisis. This paradoxical and contradictory temporal movement accompanies and supports the spatial stretching of production processes and supply chain operations that signal an economic predicament in which, as Tsing puts it, "deviations from older models of capitalism are not just defects of the system [but] have become the system" (Tsing 2015, 330).

As we have argued many times, such temporal and spatial elasticity is a crucial aspect of how the operations of capital are currently reconfiguring the world. It would be a mistake, however, to understand logistics merely as a system for searching out and connecting diverse firms and labor forces on the basis of cost or other parameters. Deborah Cowen (2014, 3) argues that "logistics is not just about circulating *stuff* but sustaining life." Logistics actively produces environments and subjectivities, including those of workers and labor forces, through techniques of measurement, coordination, and optimization. This is to say, it is not simply a socio-technical system that adapts to existing economic and material conditions. As Brian Larkin (2013, 329) writes about infrastructures more generally, they "also exist as forms separate from their purely technical functioning" and show "how the political can be constituted through different means." A prominent instance of such infrastructural power can be found in the logistical production of spaces that are not only economic but also political in their constitution—territories, we might say. In *Border as Method* (Mezzadra and Neilson 2013a, chap. 7), we provided a preliminary framework for understanding the global proliferation of multiple kinds of zones and corridors, as well as for analyzing the "lateral" practices of arbitrage and circulation that link and move among them. In chapter 3 of this book, we explored the precedents for this expansion of zones and corridors in early modern processes of colonization and trade. The role of chartered companies and privateers in establishing far-flung "factories," concessions, and trading routes provides a fascinating history that parallels and troubles the formation of

the nation-state while also illustrating how imperial geographies evolved through the mixing of commercial and political violence. Cowen's (2014, 8) claim that logistics "maps the form of contemporary imperialism" registers the continuation of this amalgam of commerce and politics in current expressions of logistical power.

Our intention is not to catalogue or explain how, beginning in the 1970s, zones began to spread rapidly in both number and type. Others have accomplished this task with more detail (Meng 2005) and style (Easterling 2014) than we can hope to muster here. Suffice it to say that we understand zones not primarily as spaces of sovereign exception, although clearly a sovereign gesture is involved in their establishment, but as sites where a multiplicity of normative orders (some of them legal in the hard sense, but others less so, such as corporate social responsibility protocols or the rule-governed scripts than run logistical software packages) interact and conflict in ways that firms and governments can manipulate to their advantage. Thus, a specific politics characterizes zones as well as infrastructural places such as corridors (Grappi 2016, 115–30). While zones classically are spaces in which state-sanctioned labor, tax, and industrial safety legislation are suspended or relaxed, they remain susceptible to strategies of supply chain governance that increasingly adhere to the imperatives of what Joshua Barkan (2013) calls corporate sovereignty. In this sense, zones are part of what we call in chapter 6 the state of capitalist globalization. Far from being sites that necessarily facilitate the establishment of labor conditions or logistical practices that are radically different from those that exist outside them, they tend to make obvious and singularly manifest that which is often hidden or obscure in wider social economic domains. In other words, zones render visible and legitimize arrangements that are frequently informal or emergent in the economy at large (Neilson 2014).

One way to conceive the zone is to emphasize how it makes clear the connection among different operations of capital. This becomes particularly obvious in large-scale planning or infrastructure projects that aim to link up or articulate zones into larger spatial-logistical formations. In their account of the Delhi-Mumbai Industrial Corridor, Ishita Dey and Giorgio Grappi (2015) emphasize how logistical operations join extractive exercises of land grabbing and financial arrangements of private-public partnership to establish new relations among the state form, neoliberal politics, and processes of market governance. Particularly important to Dey and Grappi's analysis is an investigation of how these arrangements produce labor power and labor struggles along the way. Their account of the Maruti-Suzuki

strike of 2012 shows how this seemingly traditional industrial struggle is connected to the development of the corridor model and heterogeneous dimensions of labor that extend far beyond the factory site where the shutdown occurred. Crucial here is "the need to think the industrial dispute in places such as Maruti-Suzuki together with struggles around land or other resources along the corridor without disavowing the relevance of the wage or considering the struggles of peasants and informal workers as radically separated from it" (Dey and Grappi 2015, 164). As Ferguson (2015, 94–102) argues in the South African context, the prospect of separating formal from informal labor is increasingly fraught (see also Du Toit and Neves 2007). In this perspective, logistical labor can be understood not only as the production and circulation of commodities, whether material or immaterial, but also as various forms of hustling, tapping into flows, or distributive labor that spring up, and in many cases dominate, in situations where capital has done its work of dispossession.

The nexus of logistics and labor is an intense site of struggle and connection. Stefano Harney and Fred Moten contend that logistics "was founded in the Atlantic slave trade, founded against the Atlantic slave." Although they recognize that "logistics could not contain what it had relegated to the hold," they argue that it is in the slave trade that logistics finds its "ambition to connect bodies, objects, affects, information, without subjects" (Harney and Moten 2013, 92). The status of the slave as "not just labor but commodity" (93) impels and inspires the dream of logistics "to dispense with the subject altogether" (87), "to move objects and move through objects" (92), to pacify and eliminate the subject, to substitute the subject with "human capital" (90). These are politically potent claims that provide a tragic historical precedent to explain an important feature of contemporary logistical systems: their striving for resilience, or "fault tolerance," for an ability to go on operating despite breakdowns or interruptions, for the accommodation or avoidance of hindrances, whether they result from natural disasters or labor stoppages. Classically, logistical labor is understood to hold a double position, subject to forms of monitoring and measurement (just think of the real-time labor management systems in place in the contemporary warehouse) but also holding a "strategic position," which means that even minor industrial actions can have effects that ricochet down the supply chain (just think of the masculinized militancy of the dockworker). Harney and Moten's argument finds in the figure of the Atlantic slave a kind of historical imprint that marks current logistical efforts to route around the double bind of this subjectivity, to render it redundant, superfluous, or

even just precarious by choosing another path, an ontological passage that attributes to the object an unassailable priority.

Importantly, this argument should not be understood to imply that the contemporary logistics worker is a slave in the juridical sense. As Harney and Moten are aware, current logistical operations are driven by software packages and algorithmic processes that themselves rely on such possibilities of switching and rerouting. Florian Sprenger (2015) explains how technologies of data transmission function by breaking data into small "packets" that are sent by different routes and recomposed at their point of arrival. If a packet cannot travel by one route, or encounters an unexpected delay, it is simply handled by another server. Through this system of bursts and flows, communication appears smooth and instantaneous. The same logic applies in the domain of logistical coordination and transport. The movement of people and things appears smooth, but this smoothness is an illusion created by the bursting of information and materials across diverse systems and locations that do not necessarily piece together seamlessly. Realizing that such seamlessness is an illusion is crucial to understanding the logic that animates contemporary logistical operations. As Ned Rossiter (2016) argues, what we colloquially call logistical nightmares arise at points in the network where the interoperability among different systems breaks down. By locating such points and addressing our research and political efforts to them, we obtain a powerful perspective on how capital hits the ground, observing technological mismatches, labor struggles, social inequalities, and even cultural conflicts that spill over into the operations of extraction and finance. Nowhere is this more evident than in the world of finance, where the logistical introduction of HFT has made possible new forms of volatility and crisis.

Finance beyond Finance

"On May 6, 2010, the prices of many US-based equity products experienced an extraordinarily rapid decline and recovery. That afternoon, major equity indices in both the futures and securities markets, each already down over 4% from their prior-day close, suddenly plummeted a further 5–6% in a matter of minutes before rebounding almost as quickly." This is the beginning of the joint report by the Commodity Futures Trading Commission and Securities and Exchange Commission on what has come to be known as the flash crash of 2010. A large trade of E-Mini contracts ex-

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Tracking and tracing: geographies of logistical governance and labouring bodies

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Abstract. Shifts in the production of national and global territories have coincided with new forms of biopolitical governance and surveillance, producing a simultaneous expansion and contraction of spatial and temporal mobility. In the logistics industries the mainstreaming of Radio Frequency Identification, the extended monitoring networks of GPS telematics, and the implementation of voice picking in warehouses have all had significant impacts on the mobilities of labour. Given the increasing scholarly interest in logistical geographies, this paper investigates these three advancements put to use for the regulation of bodies in the market environments of global capital from a techno-historical perspective, to provide a frame for further discourse on global supply chains, labour struggles, and security cultures.

Keywords: RFID, voice picking, GPS, surveillance, bodies, logistics

Introduction

> "What you don't need is more information. You need information you can use."
>
> Chief Executive of GS1, the standardisation body for barcodes and Radio Frequency Identification (RFID); in Nusca (2011)

> "A 'political anatomy', which [is] also a 'mechanics of power' [defines] how one may have a hold over others' bodies, not only so that they may do what one wishes, but so that they may operate as one wishes, with the techniques, the speed and the efficiency that one determines."
>
> Michel Foucault (1977, page 138)

At the end of June 2012 Google released a Maps Coordinate tool to follow workers. The phone application was devised to allow employers to monitor the geolocation of workers in real time. Given the voluminous use of Google maps, said to attract an estimated 1 billion users a month, and the growing mobile workforce, estimated to be around 1.3 billion by 2015—over one third of the global workforce—it was unsurprising that Google expressed confidence that its tracking application would be picked up across the industry spectrum (Griffith, 2012). Google is not unfounded in its assertion; the ability to govern the movements of workers has long been the prerogative of employers, especially in the logistics industries. This has grown more acute in terms of both the technologies and the velocities of surveillance and control. A recent white paper entitled "Corporate irresponsibility: Deutsche Post DHL's global labour practices exposed" (ITF and UNI Global Union, 2012) outlined some of the concerns felt by workers in an industry typified by precarious labour conditions. Not only were violations occurring around freedom of association with union groups and breaches of health and safety laws, employers were adopting stricter monitoring activities including the use of lie detector tests in the warehouses and transport sectors in Colombia, Costa Rica, and South Africa. That inequitable labour conditions are rife along the supply chain is well known and has already been the subject of much discussion (Bonacich, 2005; McClelland, 2012; Sealey, 2009).

However, less visible are the technological systems and calculative regimes implemented to ensure the expedient circulation of capital along the chain.

This paper seeks to make visible some of these systems and regimes. While the interests of geographers have been captured by new technological innovations in the realms of (often urban) space and data consolidation (Crampton and Elden, 2006; Rose-Redwood, 2006) and surveillance (Der Derian, 1990; Graham and Wood, 2003), accounts of mobile and digital technologies to manage workers within logistics industries are lacking. This is a critical area for enquiry, not only because of the immediate interplay of technology, surveillance, and labour, but also because of the larger issues around the composition of workplace geographies as spaces of biopolitical control (Crang, 1999; Sharp et al, 2000), as the Google Maps Coordinate tool anticipates. I contribute a crucial perspective that brings the apparatuses of tracking to light and the effects they are having on the everyday experiences, bodies, and velocities of workers. I begin by situating the contemporary context within reconceptualisations of global and national space through market governance. I link these shifts to a rise in both logistical and informational economies. Drawing on literature that explores the connections between technology and lifeworlds, I argue that instrumental to the current logistics paradigm is the technological extension of governance onto the registers of bodily movement and expression. This form of electronic governance, which acts to redefine and normalise behaviour, displaces traditional disciplinary control (Graham and Wood, 2003). By assembling the histories of three of the most ubiquitous technologies found in the logistics industries, I aim to bring attention to some of the advances in sensing and recording techniques conjunctive to the transformations of macrogeographies and microgeographies of supply chain capital and its management.

Geoeconomics, surveillance, and the regulation of the labouring body

The logistics industry is part of a global process of geoeconomic redefinition. The production of national space has been of interest to geographers for decades (Bowman, 1942; Lewis and Wigen, 1997; Ó Tuathail, 1996), as have the newer lines and flows of territorial space in neoliberal capitalism (Agnew, 1998; Harvey, 2006; Sassan, 1991). More recently, there has been growing awareness of the formation and management of national and international border zones through supranational firms and supply chains (Coe et al, 2010; Cowen and Smith, 2009; Tsing, 2009). Within this paradigm we have witnessed significant changes in the geographies of governance. Put more precisely, the ways in which territories are being demarcated, and the control of these demarcations, are changing. The acceleration of the modern logistics industries since the Second World War has emphasised the mutability of nation-state borderlines (Aoyama et al, 2006). The particularities of neoliberal capitalism and the proliferation of supranational trade have necessitated an expression of control through logistical flow rather than through geopolitical territory; at stake is the differential transit of people, commodities, capital, and information across and through nation-state boundaries through the management of global supply chains (Allen, 1997; Busch, 2007).

According to Deborah Cowen, there is an increasing "tension between geopolitical and logistical models of spatial calculation" (2010, page 602). This tension arises in part through shifting parameters of border demarcation and an increase in border turbulence (Cresswell and Martin, 2012). For Cowen and Neil Smith (2009), traditional conceptions of geopolitical space are incapable of understanding contemporary national and transnational configurations. They suggest instead a principle of geoeconomics, which is attenuated to the logics of market rule and the ways in which space is regulated beyond the authority of national institutions (Smith, 2005). This is not to say that territoriality has become obsolete, rather that space is recast through logistics toward what Cowen calls "the production of space beyond territory" (2010 page 615). This notion is vital to an understanding of logistical governance.

Discourses of geopolitics have historically been conditional on nation-state authority. The processes of globalisation have complicated this, destabilising the historical symbiosis of national economic, political, and social securities (Cowen and Smith, 2009). In the contemporary situation, the conflict between national borders and global trade is leading to the rebordering of geopolitical terrain through the shifting and mobile spatialities of security (Aoyama et al, 2006; Cowen and Smith, 2009). The logistics industry has been influential in the ways that nation-states formulate security, so much so that it functions more as a forerunner than supporter in corporate and national security strategy (Cowen, 2010, page 602). The logistical systems of supply chains challenge the political and spatial logics of territory, moving anxieties about the disruption of trade from the economic realm to that of security.

Perhaps most important here is the impact that security cultures, logistics and political regimes and technologies of control have on the spaces and movements of labour (Cowen, 2010). The expansions and contractions of national and international borders, such as the maritime border, through the global logistics industries have reshaped citizenship and labour rights, in part through the conflicting demands of national security and trade. In conjunction, the growing collusion between private–public realms has radically altered traditionally perceived regions (Agnew, 2008; Gertler, 1992; Sparke, 2006). The effects of these global processes play out on multiple levels, from the geoeconomic to the cultural and the corporeal, and requires a sensitivity to scales of internal and external differentiation (Neilson and Mezzadra, forthcoming). The multiscalar dynamic is paramount, especially the ways in which internal differentiation becomes clear through all aspects of governance within territories, delineating 'bad' subjects from 'good' and marking out spaces of control that are no longer exceptional but permeate everyday mobilities. This is correlative to contemporary security cultures, which are no longer modelled on direct supervisory techniques such as that of the panopticon tied to its reliance on vision but, as Foucault makes clear, have become more about automated scaled control than "exhaustive surveillance" (2007, page 66).

The augmentation of security cultures has gone hand in hand with the technoscientific advances of the logistics industries (Cowen, 2010, page 613). As this paper will show, the rise of complex and networked global supply chains has coincided with a calibration of technologies used to monitor not only the consignments within those chains, but also the workers and machines that move them. Over the last decade, supply chain management has been employing information and communications technology (ICT) hardware and software to optimise performance and production. Through the logistics of transit and warehousing, just-in-time processing demands the capacity to determine and standardise the speed, rhythm, and flow of commodities and people. In this state the promotion of a particular kind of regulatory power is exercised on the level of life through the regimentation and increased velocity of each working moment. The management of bodies and commodities now encompasses the entire spectrum of movement, from the minute gestures of box packers and the pathways of cranes in the warehouse, to the rest breaks of freight drivers, the call content and duration of call centre workers, and the passage of commodities shipped around the globe.

The collusions of security and logistics can be tied to a new "paradigm of informationalism" (Holmes, 2011), the inception of which coincided with the development of the networked computer in the 1960s. According to Brian Holmes, the advancements of ICTs are inseparable from global labour processes typified by a spatial and temporal intensification of production, management, and distribution practices. It is even further apparent through the vast spatial redeployment and georegulatory change of globalising processes seen in the economies of India and China, and the outsourcing and offshoring of production into Asia, Africa, Eastern Europe, and Latin America (Hudson, 2000; Massey, 1995). This also plays out in terms of digital governance: the encoding of software to automatically determine access, risk, and punishment occurs far away from the point of actual contact, as increasingly does data

handling and interpretation, creating both space–time distancing and compression (Graham and Wood, 2003). In this condition information becomes not only a critical commodity but an administrative technique across all scales of life, resonant with what Nigel Thrift has termed "lifeworld inc." (2011).

The operation of technology in the informationalism and securitisation of labour and global production systems is critical at this time. However, as Cowen points out, while there has been interest in the cartographic functions of mapping and modelling in human geography (Elden, 2007; Lefebvre, 1991), "technical transformations in the conceptualization and calculation of the economic space of globalized capitalism have been almost entirely neglected outside the applied field of business management" (2010, page 612). By bringing the registers of technology, industry, and the military to questions of labour and governance, we can begin to think through the disciplining of logistics workers within the broader conditions of national and international security, migration, and biopolitical power. Such attention to the technological aspects of these global spatial and temporal shifts requires us to unfold the materialities and imbrications of apparatuses, bodies, labour, space, and social and economic reproduction (Bingham, 1996; Wilson, 2011) and look to objects and their mobility to help map out relational topologies (Latour, 2005; Law and Mol, 2001).

This paper analyses three technologies: RFID tagging, GPS (Global Positioning System) telematics, and voice-directed order picking. Looking at these, I discuss how they function, their historical–technical contexts, and their interactions with labouring bodies. Two sites provide illustration, the United Kingdom and the United States of America, chosen largely for the strong responses sounded out by trade unionists, workers, and legal and political scholars. Such constituencies are determining counternarratives to the transnational corporations and industry enterprises applauding these apparatuses for their high return on investment. They have also been chosen because of the significant role they have played in the development, dissemination, and normalisation of tracking and tracing cultures.

While there is research being done on global supply chains and spatial reconfiguration (Harvey, 2006; Hughes and Reimer, 2004), and some notable scholars in geography such as Cowen (2010) are looking to the securitisation of these chains and production flows, what can be further contributed is a focus on the technologies themselves, and their deployment to track and trace workers by constantly tying them to territorial and temporal location. This is nothing new; we can easily recall Foucault's accounts of liberal regimes of power and the evolution of the military and logistical sciences. What is new is the refinement of technologies to build microgeographies of surveillance that are precisely mapped out through bodily movement and rhythm, a "hyper-coordination" (Thrift, 2005) of Taylorist motion management (Adey, 2009; Cresswell, 2006). Key here is how developments in bio–techno–disciplinary techniques are refining the spatial and temporal existence of bodies, what Foucault referred to as the "temporal elaboration of the act" (1977, page 151), through a "positive economy" (page 154) of time that seeks the intensification and maximisation of efficiencies.

The technologies under investigation illustrate how this kind of hyper-coordination takes place through assemblages of mechanical devices and digital hardware and software designed to recognise a range of individual bodily rhythms and speeds. This is part of the "new doctrine of bodily signs" explored by Thrift (2011, page 10), who suggests the need for a "physical geography of bodily interactions". I would propose that a geography of bodily interactions would bring much to an analysis of labour and surveillance, and may act to further reveal the political implications of such a condition (Bigo, 2006). The information abstracted from the bodies of workers is translated into categories and definitions (Adey, 2004) that serve to delimit the subjectivity of workers from their labour output; the use of such technologies can reinstate lines of racism and ableism through the selective compilation and interpretation of data. However, this differentiation is often obfuscated; as Stephen Graham and David Wood

point out, "digital surveillance systems tend to be developed, designed and deployed in ways that hide the social judgements that such systems perpetuate" (2003, page 242). Technologies such as those examined here are employed by market rule discourses that stratify productivity over labour rights, and the definition of strict parameters of movement suggests that anything beyond these parameters constitutes disruption and failure. The framing of the unimpeded flow and security of commodities in the same breath as the unimpeded productive movements of workers requires ongoing engagement with the political prospects of these surveillance regimes. The mechanisms put to use within logistics warehousing and freight can illuminate something of the ways in which contemporary forms of capital are remaking geographies of production, management, and distribution through spatial calculation that articulates itself across geoeconomic, corporeal, and virtual scales.

I Radio Frequency Identification

> "The conception of a control mechanism, giving the position of any element within an open environment at any given instant (whether animal in a reserve or human in a corporation, as with an electronic collar), is not necessarily one of science fiction."
>
> (Deleuze, 1992, page 7)

Surveillance has been broadly defined by David Lyon as "any collection and processing of personal data, whether identifiable or not, for the purposes of influencing or managing those whose data have been garnered" (2001, page 2). We might begin with RFID, as it is perhaps the most ubiquitous and multipurpose technology for tracking and tracing contemporarily available. In supply chains RFID allows for the pinpointing of consignments as they pass through the entire production and distribution process, from the factory floor to the consumer. Resonant with what Deleuze identifies as elementary to 'control societies', RFID is a system of electronic tagging, which is used to identify and trace animate and inanimate objects and beings, and store information. It comprises three parts: the microchip tag, the receiver, and the back-end database required to manage the data from the tag. Its instantiation came from the early combination of radio broadcast technologies and radar. A notable innovation was its use by the British Royal Air Force during the Second World War to differentiate friendly aircraft from enemy aircraft (US Department of Commerce, 2005).

The late 1960s saw the first commercial applications of RFID, by corporations such as Sensormatic and Checkpoint, in the form of electronic article surveillance used to tag clothing against theft, which was expanded in the 1970s (Roberti, 2007). It was during the research and development boom in the 1970s that applications such as the tracking of animals, vehicles, and factory automation came to the fore. At the same time, tag size was decreasing and improvements in functionality allowed for the mass implementation of these technologies in the 1980s, resulting in the mainstreaming of RFID (Landt, 2005). In the USA tagging was deployed predominantly for transportation and personnel access, while in Europe interest remained with the tracking of animals, as well as in industry and business. An important factor in this global expansion was the coincidental advancement of the personal computer, which was crucial to the assemblage and analysis of the data being produced (Land, 2005).

Notable for the logistics industries and transportation was the implementation of RFID in tollways, expanded across the USA and Europe in the late 1980s and early 1990s (Bidgoli, 2009, page 242). This necessitated protocols for the standardisation of RFID, especially in the pan-European context, but also more globally.[(1)] Toll and rail applications quickly followed in Asia-Pacific, South America, Europe, and South Africa. The multiple use of a single tag (ie, for toll collection, entry to gated communities, parking lots, and so forth) ensued, linking

[(1)] As with much global standardisation, this has encountered various issues and permutations: see Adhiarna and Jae-Jeung (2009), CASAGRAS (2010), and Gerst et al (2005).

At the Razor's Edge of Democracy
Authoritarian Capitalism and Decolonial International Feminisms

Macarena Gómez-Barris

In opposition to state-centric perspectives, ours does not continue to prioritize the state as a privileged site of transformation. At the same time, it does not ignore the state in its limited political capacity.

Verónica Gago, Feminist International (2020)

There was always another truth, behind the truth.

Gabriel García Marquez, The Autumn of the Patriarch (1975)

[extract]

Colonial Authoritarian Origins

Aimé Césaire's Discourse on Colonialism draws a direct line between colonial systems and modern fascism.6 As he states:

> We must show that each time a head is cut off or an eye put out in Vietnam and in France they accept the fact, … each time a Madagascan is tortured and in France they accept the fact, civilization acquires another dead weight, a universal regression takes place, a gangrene sets in, a center of infection begins to spread; and that at the end of all these treaties that have been violated, all these lies that have been propagated, all these punitive expeditions that have been tolerated, all these prisoners who have been tied up and interrogated, all these patriots who have been tortured, at the end of all the racial pride that has been encouraged, all the boastfulness that has been displayed, a poison has been instilled into the veins of Europe and, slowly but surely, the continent proceeds toward savagery.7

In this powerful inversion that moves the object of scrutiny from the colonized other to the savaging subject of empire, Césaire articulates, in Stuart Hall's sense of the word, the concentration camps and the plantation systems of European colonialism to its twentieth century incarnation as modern fascism. The infection that spreads and the poison that Césaire refers to then is the rise of state and populist collusion with mass and targeted racialized death in the twentieth century that currently continues unabated.

Attempts to define recent forms of fascisms by theorists on the political Left, whether Marxists, Troteskyists, autonomists, or anarchists, often miss what decolonial theory reveals, which is how colonial systems of global power are continuous in modernity; though racial capitalism mutates and proliferates, its underlying system is based in colonial extractive relations that originate within racialized structures of punishment and death so aptly described above by Césaire.

As we know from abolition scholars, the history of the police and the military emerged from within plantation and settler colonialism, whose objective was to rule over and repress organized rebellion.8 As Victor E. Kappler describes in the U.S. colonial context:

> New England settlers appointed Indian Constables to police Native Americans (National Constable Association, 1995), the St. Louis police were founded to protect residents from Native Americans in that frontier city, and many southern police departments began as slave patrols. In 1704, the colony of Carolina developed the nation's first slave patrol. Slave patrols helped to maintain the economic order and to assist the wealthy landowners in recovering and punishing slaves who essentially were considered property.9

Colonial slave patrols underpin the system of modern policing that manufactured Indigenous and African-descended people as criminals, displacing the organization of an economic and affective economy founded

upon massive violence and dispossession. And, as Sarah Haley shows in relation to the imprisonment of Black female labor, policing evolved upon the structure of racialized domestic labor. “The sight of black women on the streets in black neighborhoods,” Haley writes, “perhaps with their voices raised, was an assault on the model of a docile black woman in the white domestic sphere, and therefore subject to punishment.”10 The Jim Crow system of punishment that protected white women’s domestic spheres of influence was key to the broader logics of white supremacy as an authoritarian structure that punished nonwhite subjects through a transtemporal penal system we now refer to as the U.S. prison industrial complex and more broadly to carceral capitalism, to name how we are all imprisoned by the digital surveillances of a corporate state.

In the Global North and the Global South, authoritarian systems depend upon structures of punishment and criminality that instantiate a gender, class, and color order that continually criminalizes and widens the net on dissent. As I have written elsewhere, authoritarian states like those that are usually associated with Latin America, Asia, Africa, and the Middle East (or what we might refer to as the Global South), target poor, female, queer, trans, Indigenous, and Black populations, converting those already expelled from the logics of primitive accumulation and dispossession into objectified subjects of the colonial rule of law.11

Authoritarianism and liberal democracy often share a symbiotic relationship, especially given that the racial state deploys differential systems of brutality to secure private property, extracting surplus from Black and Indigenous bodies and biodiverse territories (be they in rural peripheries or urban centers). Capitalism produces high consumer debt ratios and ratifies impossibly unequal concentrations of wealth, while continually repressing any potential opposition. More recently, this has been rhetorically and politically accomplished through a series of authoritarian tactics that include popular appeals to a mythic white past, law and order, anxiety about race and sexuality, anti-intellectualism, and misinformation campaigns and policy maneuvers that perpetuate a series of fabricated histories without addressing the fungible origins of property theft.

A key mark of fascist and authoritarian rule is not only its rhetorical strategies but the symbolic and material targeting of enemies. As Pratap Mehta writes:

> The targeting of enemies—minorities, liberals, secularists, leftists, urban naxals, intellectuals, assorted protestors—is not driven by a calculus of ordinary politics.… When you legitimize yourself entirely by inventing enemies the truth ceases to matter, normal restraint of civilization and decency cease to matter, the checks and balances of normal politics cease to matter.12

Though Mehta describes the fascist directions of Narendra Modi and the BJP in India, similar authoritarian tactics have been utilized in Trump’s America, Duterte’s security regime in the Philippines, Bolsonaro’s racist imaginary of Brazil, and Piñero’s criminalization of protesters in Chile. These autocratic figures work to center their patriarchal authority, challenging the liberal notion of multiracial democratic societies by first attacking racialized and sexualized others.13 Indeed, new forms of global fascism continue to be rendered through patriarchal figures and their monocultural representations. And the authoritarian antistate state casts an ever-widening net over those it criminalizes and capitalism expels. What the current political moment crystalizes is that liberal democracy has never been the end game: Astra Taylor reminds us with her recent book that “democracy may not exist, but we may miss it when it’s gone.”

White and ethnic nationalist sentiments run through nostalgic representations of the past that imbue strong men with virulent capacities. For instance, Donald Trump’s 2017 “Make America Great Again” campaign, Jair Bolsonaro’s recursion to the traditional Brazilian Christian family in 2018, and Duterte’s 2016 “Fearless Solutions, Fast Actions” slogan all aim to interpolate an electorate that gives primacy to militarized security, heteronormative exclusivity, and anti-Indigenous, anti-Black, and antiminoritarian understandings of white phantasmatic national coherence. These strategies also function through ongoing violent expulsions of foreign others. As Jason Stanley described in relation to Trump’s xenophobia, protecting the nation from Foreign Terrorist Entry into the United States was an executive order that not only halted refugees from the war in Syria, placing a travel ban on citizens of seven Muslim Countries, but its specific focus on religious identity contradicted the Establishment Clause of the U.S. constitution. As Stanley notes, this makes evident the fact that the Constitution can be manipulated for fascist political ends.14 I will return to the issue of the Constitution, since it is a document that births the nation-state and structurally organizes illiberal and unequal

societies, yet it has also become a site of revisioning and imagining toward a deepening of radical democracy. Yet I would like to emphasize Stanley's point because it shows that liberal democratic institutions are not a fait accompli but constantly unmasked, reworked, deliberated upon, and manipulated in directions that either produce positive rights or that contribute to their undoing.

In the period of global visible resurgence of far-right ideology, we must also consider how antifeminist and antigay discourses have become central to the dangerous rhetoric used by political leaders, movements, and parties to advance political agendas with fascist underpinnings. The historical connections with targeting queer populations in relation to European fascism is clear, such as the burning down of the Institut für Sexualwissenschaft (a foundation that campaigned for LGBTQ rights) during the German Third Reich and other forms of terror, deportation, and persecution against those Hitler's regime coded as subversive. Bolsonaro's outlandish statements about rather having his son be dead or a drug addict than gay and his effort to ban homosexual references from textbooks are just two of the many examples that could be noted in the current homophobic and transphobic strains of autocratic demagoguery.

Authoritarian Capitalism

Whether a state is "truly fascist" is almost beyond the point, given that authoritarian practices run amok within liberal democracies to feed the beast of capitalist extraction.

For instance, "nature" in capitalism is conceived as an input, where soil, water, timber, minerals, ore, and oil are represented as commodities, converting biophysical resources into primitive accumulation. Given that racialized, poor, Indigenous, and Black communities are more likely to live and exist in spaces where extractive industries operate, they become targeted by the state as that which must be either removed or eradicated. When Indigenous and Afro-Indigenous land and water defenders protect spaces of high biodiversity, they are then made the target of the military security apparatus, precisely because such antiextractive organizing impedes the accumulative progress of the developmentalist corporate state.

India, Brazil, Canada, Guatemala, and Honduras all experience high degrees of targeted violence against antiextractive activists, where the police and military actively rove to secure new territorial frontiers; Black and Indigenous female bodies literally become the block to extractive capitalism. The Honduran state-sponsored militia death of the Lenca Indigenous activist Berta Caceres in 2014 is an example of the overlapping structures of ecocide, feminicide, and genocide that are the core practices of global capitalism under authoritarian governance.

Those experiencing the imperial and colonial imprint of racialized governance both "at home and abroad" understand the demagogic intolerance that sits at the root of the four-hundred-year-old U.S. experiment with liberal democracy. Let me state the obvious. The rise of fascism in the globalized world today may surprise many, but least of all Black, Indigenous, and other colonized peoples who have observed state governance as one long and continuous abuse of power with recent fascisms as its apex expression. In the toxins poured into U.S. communities of color and the Global South or the increased forms of Indigenous land dispossession; in the dearth of quality unionized jobs and increased surveillance practices, and in the dispossessions created by gentrification; in the lack of quality access to housing, health care, clean water, and good public education; in the ongoing attacks on nonnormative bodies and the precarious structures of Black and Brown female labor, the people that capitalism leaves out must be quelled. This is why authoritarianism looms large as a planetary condition, hovering as the polluted fodder that continually erodes democratic gains and capacities.

In the words of Jamil Khader, professor of English literature at Bethlehem University in Palestine:

> Trump's objection to outsourcing, rejection of free-trade treaties, and his call for more government economic intervention are all symptoms of the fact that neoliberal economic policies and the democratic values associated with them can no longer drive capitalist growth. As a result, the crisis of global capitalism today is driving nations worldwide toward new forms of politico-economic organization—namely authoritarian capitalism.

Thinking with this quote, we might conjecture that the ghostly trace of neoliberalism may have had its last gasp. And in its place, we might refer to a new-old system: authoritarian capitalism. As Khader synthetically outlines about democracy's tipping point and the drive of capitalist growth, new consolidations of racialized global capital rely on the rule of law. We can only conclude that authoritarianism and fascism are embedded within institutions of liberal democracy rather than outside of them, precisely because of their entanglement with racial capitalism.

If neoliberalism has ended and we are moving closer to what we might call authoritarian capitalism, what are the ways that this new-old formation begs for a decolonial, queer of color,15 and trans*feminist critique of this fascist and decaying late stage of capitalism? After neoliberalism, what must be burned to the ground to build anew?

The film At the Edge of Democracy by Petra Costa (2019) describes the precarity of a system based on electoral democracy that is built upon unsolid foundations. Its haunting opening describes the origin name for the country in which Costa was born, the Brazil tree, which is now extinct. "Only the name remains," she says on voiceover as if to speak to the phantasms of the colonial Anthropocene.16 She also references the transatlantic slave trade and the inheritances of a nation steeped in the colonial military structures that first put down the rebellions of Afro-descended peoples and then became the root of modern authoritarian regimes. As Costa underscores about the present period when describing the military regime that lasted between 1964 and 1985: "In Bolsonaro's cosmology, militants like my parents should have been killed. It was the face of a country that had never punished the crimes committed under military rule. A country that had been shaped by slavery, privilege, and coups."

After its military dictatorship, one of the longest in the region, Brazil did little to formally address the atrocities of modern authoritarianism, just as it had not confronted its colonial legacies and brutality. There is an important scene in At the Edge of Democracy when the military police activate against the protesters and violently beat a Black man in front of the camera. The filmmaker says on the film's voiceover, "Our democracy was founded on forgetting." This is a profound statement of how racialized brutality and its erasure underlie the making of the nation-state. And such occluded horrors are buried but persist within democratic institutions, even during transition to democracy periods.17 Yet, in this way, Brazil is not exceptional, since the settler nation-state indeed is amnesiac and relies upon the continual recurrence of anti-Black, anti-Indigenous, and misogynistic strategies as its operational foundation.

Writing in the 1940s at the height of Hitler's power, Walter Benjamin observed that "fascism tends to an aestheticization of politics," by which he meant that fascism produces spectatorship that allows popular classes to feel recognized within the structure without upending the relations of power and ownership that produced that structure in the first place. In Surviving Autocracy (2020), Masha Gessen writes of the difficulty of living under Trumpian news cycles, a way of being that is both fragmented and scattered. We may indeed be living within and differentially dying within authoritarian capitalism, a structure of feeling so fragmented and disorienting that it confuses us into not being able to name its deciduous and hidden, but not yet extinct, colonial root.

1. AI and Tech Industrial Policy: From Post-Cold War Post-Industrialism to Post-Neoliberal Re-Industrialization

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Part of:

AI NATIONALISM(S)

Bush I: Semi Chips & Potato Chips

Reagan-era tech policy marked a shift in focus toward civilian industry. This shift became a site of conflict under the Bush and Clinton administrations as Heritage-style conservatives became more organized and gained political power on the right. The New Right stalwarts were critical of Reagan's aggressive trade policy on behalf of semiconductor firms. They were also furious at the government intervention involved in programs like SBIR and the practices of agencies like NIST. The semiconductor industry was at the heart of this dispute. In the words of one analyst writing about SEMATECH, "the half-billion-dollar federal commitment marks a major shift in U.S. technology policy: a turn toward explicit support for commercially oriented R&D carried out in the private sector."[70] As the Cold War wound down in the late 1980s, some imagined "a civilian DARPA that could do for U.S. economic competitiveness what the old DARPA had done for military competitiveness."[71] This view significantly shaped programs like the SCI.

Reagan's defiance of institutions like Heritage on aggressive state intervention for high-tech industries led to significant pressure on his successor, George H.W. Bush. New Right Republicans trusted Bush much less than Reagan and could vent their frustration more easily because Bush was not an emblem of their movement's success. The end of the Cold War added fuel to the orthodox New Right case as well. Was defense spending on the scale of the Cold War necessary? The National Academy, writing in 1999, outlined the novelty of this debate. According to this body, the conflicts of the 1990s constituted "the first time in which fundamental questions are being raised about the infrastructural commitments and organizational principles that have guided federal support for research."[72]

The dismissal of DARPA's director Craig Fields by the George H.W. Bush administration was a pivotal moment in this struggle over the role of the state. Fields's firing was significant because DARPA had a long history of promoting the kind of innovation Field promoted. The pressure on H.W. Bush to make this move came from libertarian-leaning groups. Bush dismissed Fields for pursuing ventures "deemed to be more concerned with improving US commercial competitiveness than enhancing military preparedness."[73] Specifically, Fields was fired for providing too much obvious aid to the semiconductor industry—through dual-use ventures and investments in semiconductor firms. He was "appearing to stray too far into the commercial arena, after having

taken DARPA into a series of new dual-use ventures. But the final straw came when he authorized a $4 million equity investment in a company making semiconductor devices with advanced materials," which was an "obvious breach of the state-market divide."[74] Fields subsequently became the president of the Microelectronics and Computer Technology Corporation (MCC) and played a major role in Clinton administration tech and defense policy.[75]

Even after Fields's dismissal, key figures in the Bush administration were deeply concerned about industrial policy and its effect on the budget deficit.[76] According to Alex Roland and Phillip Shiman's book on the SCI, "[s]everal of the president's close advisers, particularly Richard Darman, the budget director, and Michael Boskin, the chairman of the Council of Economic Advisors, were particularly opposed to any interference in the functioning of the free market."[77] Boskin is famous for his (possibly apocryphal) comment on chips: "Potato chips, semiconductor chips, what is the difference? They are all chips."[78] Darman, a Reagan holdover, similarly demonstrated his commitment to "the free market" when he showed little concern over Japan dumping DRAM chips, claiming: "What's wrong with dumping? It is a gift to chip users because they get cheap chips. If our guys can't hack it, let them go."[79]

Nonetheless, the Bush administration continued Reagan's significant and enthusiastic support for computing, especially the microelectronics industry. For example, the High-Performance Computing and Communications Initiative (HPCCI) began in 1989 as an Office of Science and Technology Policy (OSTP) initiative and was formally legislated in 1991.[80] This program coordinated DOE, NASA, NSF, NSA, EPA, NIH, NIST, NOAA, DOE, and the VA around supercomputing. Due to the pace of microelectronics improvements, infrastructure developed for high-end computers was rapidly diffused to everyday civilian applications, so the program had considerable impact.

The semiconductor industry served as a model for government involvement in other industries as well. As a result of the greater emphasis on industrial needs initiated because of small-business and VC organizing, the federal role in research and development continued to transform under Bush. NSF, for example, "established a number of Engineering Research Centers (ERCs) to better link academic research to industrial needs, and the National Institute of Standards and Technology began its Advanced Technology Program, which funded consortia working on precompetitive research projects of mutual interest," in the model of SEMATECH.[81] Likewise, interdisciplinary science and technology centers (STCs) focusing on areas in computer science[82] began appearing in 1989, funded by multiple agencies, universities, and industries.[83]

The Gulf War created the impression that the technological dreams of Vietnam had been realized, and convinced many in the realist foreign policy camp that their support for tech industrial policy had been worth it. In particular, for AI, a "report by the American Association for Artificial Intelligence (1994) paraphrased a former director of ARPA in saying that DART (the intelligent system used for troop and materiel deployment for Operation Desert Shield and Operation Desert Storm in 1990 and 1991) 'justified ARPA's entire investment in artificial-intelligence technology.'"[84] This use of AI mirrors modern uses. Israel in its present war on Gaza uses AI in similar ways[85] to generate targets that are legitimated by the public's trust in numbers[86] and in tech's infallibility.[87] These military ambitions and uses have shaped the form, funding, and development of information technologies.

70. National Research Council, *Funding a Revolution*, 129. ↩
71. Roland and Shiman, *Strategic Computing*, 7. ↩
72. National Research Council, *Funding a Revolution*, 34 ↩
73. Weiss, *America Inc.?*, 164. ↩
74. Ibid. ↩
75. Roland and Shiman, *Strategic Computing*, 310. ↩
76. Ibid., 315. ↩
77. Ibid. ↩
78. Carl Cannon, "Letter From Washington: The Bill Comes Due," *Forbes*, September 10, 2001, https://www.forbes.com/asap/2001/0910/032.html. ↩
79. Ibid. ↩
80. National Research Council, *Funding a Revolution*, 130–1. ↩
81. Ibid., 154. ↩
82. These areas included computer graphics and scientific visualization, discrete mathematics and theoretical computer science, parallel computing, and research in cognitive science. ↩
83. National Research Council, *Funding a Revolution*, 124–6. ↩
84. Ibid., 225. ↩
85. Ben Reiff, "'A Mass Assassination Factory': Inside Israel's Calculated Bombing of Gaza," *+972 Magazine*, November 30, 2023, https://www.972mag.com/mass-assassination-factory-israel-calculated-bombing-gaza. ↩
86. Theodore M. Porter, *Trust in Numbers : The Pursuit of Objectivity in Science and Public Life* (Princeton: Princeton University Press, 2001). ↩
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INFORMATION OBSERVATORY

Radical :|: International :|: Historical

INTERNET INDUSTRY RUSSIA UKRAINE WAR

Declaration of Withdrawal

MARCH 4, 2023 BY SHINJOUNG YEO

For the past few weeks, the mainstream media have been plastered with news about ChatGPT – a chatbot developed by the Silicon Valley company OpenAI which recently received a $10 billion investment from Microsoft. Will Microsoft revolutionize its Bing search with ChatGPT? How did Google lose $100 million with its mishap on its new AI chatbot? Will ChatGPT change education? Will ChatGPT affect the future of work? We're sure that an AI chatbot is worthy of the corporate media's close probing, but amidst plenty of media coverage on technology, there is a deprivation of critical analysis on the tech industry's involvement in the *current* war between Ukraine and Russia resulting in the killing of thousands of people on both sides NOW – not in some version of the future. We insist this *requires* a series of probing questions and elaboration.

A few months after the war broke out, the US and its allies imposed economic sanctions against Russia.[1] Company after company loudly publicized that they were withdrawing their businesses from Russia; though after a year of the war, hundreds of the US and European companies, including Pfizer, BP, and Re

are still doing business in Russia according to a recent *NY Times* report.[2]

By March 2022, the major tech companies were also joining this drive. Apple stopped selling new products and paused its Apple payment services; Amazon suspended shipments of its retail products and new clients for its cloud services in Russia and Belarus. Google's Russian subsidiary filed for bankruptcy in Russia and suspended ads in Russia on Google's internet properties including YouTube. Microsoft announced that the company was also suspending new sales in Russia.

Despite their public declarations, it is not clear to what extent the US tech industry has actually pulled their businesses from Russia; however, one still wonders what has driven this unusually prompt rhetoric of withdrawal? According to the tech companies, they were responding to an unlawful invasion and a humanitarian disaster. This line of reasoning is inconsistent with the tech companies' previous behavior, as they are doing or have done plenty of business in countries with repressive regimes around the globe and have ignored other humanitarian disasters.[3]

The tech companies' exit from Russia came as a result of governmental edicts. The question then is, what has moved these companies to comply with the US state's current geopolitical ambitions? What is the basis of the interlock? The complete answers to these questions are multi-faceted because we need to consider the tech giants' long relationship with the Democratic party; their interests in domestic and governmental markets; their involvements in US foreign policy; and their leaders' class interests – all of which are intricately intertwined. Further explication of these questions will occupy multiple posts. However, for this piece, we're calling attention to one of the apparent reasons for the tech companies' swift withdrawal announcements from Russia.

On 16 September 2022, Eric Schmidt, former Google CEO and current Chair of the US National Security Commission on Artificial Intelligence – who has also been newly appointed to serve on the National Security Commission on Emerging Biotechnology – visited Ukraine and met with Ukrainian government

officials. Soon after his trip, Schmidt gave a talk at the Cyber Media Forum at Georgetown University.[4] He remarked that he was interested in knowing what the tech industry did to help the war (not peace!).

Sharing his observations from the trip, Schmidt said that the Ukraine government changed a law that had prevented government data from being stored in the cloud – so they could move all their government data to cloud services. Though he didn't reveal which cloud services the Ukraine government would be relying on, one would not have to work hard to guess. He continued:

> *Elon Musk is genuinely a hero here, Elon based on just a verbal statement, was willing to authorize a large number of Starlinks[5] into the country. I won't say their names, but other entrepreneurs, other donors, gave Ukraine a great deal of money that ultimately resulted in what I was told was about 20,000 Starlinks in Ukraine itself. This allowed the strategy of shutting down the internet by the opposition to fail.*[6]

One of Schmidt's unidentified donors was the United States Agency for International Development (USAID). Elon Musk's initial zeal to supply SpaceX's Starlink internet routers fizzled; he asserted that it was too costly for the company and asked for Pentagon funding.[7] According to a *Washington Post* article, Space X donated 3,670 terminals and USAID ponied up part of the bill by purchasing over 1,330 terminals from SpaceX and sending them to Ukraine.[8] To be sure, this is only a fraction of the $113 billion in aid and military assistance to Ukraine[9] – or even of the $67 billion that was allocated for military aid.

Schmidt – who has been a staunch advocate of US digital war-making and of AI innovation to beat China, and who holds investments in AI start-ups for the defense industry[10] – stressed that Ukraine is a valuable case-study of the success of a networked war; indeed, he signaled investors and entrepreneurs to come to Ukraine and get on board with digital militarism.[11] If his signal was too subtle, Ukraine president Volodymyr Zelenskyy's message was made l ' and clear. On 23 January of this year, he made a speech to a US corporate ↑ y group, the *National Association of State Chambers* about rebuilding Ukraine after defeating Russia. Zelenskyy spoke about his plan and said,[12]

> *… when we'll be able to end this war by throwing out the occupiers – in the same manner together we'll be able to start the difficult work of rebuilding Ukraine – our cities, our economy, our infrastructure.*
>
> …It is already clear that this will be the largest economic project of our time in Europe. It is obvious that American business can become the locomotive that will once again push forward global economic growth.

President Zelenskyy proudly affirmed that global financial companies like Black Rock, J.P. Morgan, and Goldman Sachs, as well as defense contractors like Lockheed Martin, have already set up shop in Ukraine – and so have the tech giants. In fact, in May 2022, Google received the Ukrainian "Peace" Prize presented by Minister of Digital Transformation Mykhailo Fedorov in Davos, where the world's billionaires meet to talk about the global economy.[13] Google was the first company to be awarded the prize, but not the last. Shortly thereafter, Microsoft and Amazon were also awarded the same prize.[14]

If peace means no war, a peace prize can't be given to anyone that supports war. This prize was not for peace-making but was instead given for joining in war-profiteering. In turn, the tech companies' declaration of their withdrawal from Russia did not involve striving for any lofty ideal; rather, it was a shallow, self-interested strategy to march headlong into the business of war.

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[1] U.S. Department of The Treasury, "Ukraine-/Russia-related Sanctions," https://home.treasury.gov/policy-issues/financial-sanctions/sanctions-programs-and-country-information/ukraine-russia-related-sanctions.

[2] Liz Alderman, "Leave Russia? A Year Later Many Companies Can't, or Won't" *New York Times*, March 2, 2023,https://www.nytimes.com/2023/03/02/bus ↑ / russia-companies-exit.html.

[3] See Who's Behind ICE? https://mijente.net/wp-content/uploads/2018/10/WHO%E2%80%99S-BEHIND-ICE_-The-Tech-and-Data-Companies-Fueling-Deportations-_v1.pdf, and see Amazon Web Services and Google signed a $1.2 billion contract to provide cloud services to the Israeli government and its military. This technology is used to facilitate the expansion of illegal occupation of Palestine. See Ramzy Baroud, "Billion-dollar deal partners Google and Amazon in Israeli occupation of Palestine" People's World, March 28, 2022, https://www.peoplesworld.org/article/billion-dollar-deal-partners-google-and-amazon-in-israeli-occupation-of-palestine/.

[4] The First Networked War: Eric Schmidt's Ukraine Trip Report, Special Competitive Studies Project, September 13, 2022.

[5] StarLink is a satellite internet operated by Elon Musk's SpaceX. Space X sent Starlink terminals to Ukraine to connect to the satellite internet.

[6] The First Networked War: Eric Schmidt's Ukraine Trip Report, Special Competitive Studies Project, September 13, 2022.

[7] Richard Waters and Felicia Schwartz, "Pentagon in talks to fund Ukrainian troop access to Musk's Starlink," *Financial Times*, October 14, 2022.

[8] Cristiano Lima, "U.S. quietly paying millions to send Starlink terminals to Ukraine, contrary to SpaceX claims," *Washington Post*, April 8, 2022.

[9] "Congress Approved $113 Billion of Aid to Ukraine in 2022," Committee for Responsible Federal Budget, January 5, 2023.

[10] Kate Conger and Cade Metz, "'I Could Solve Most of Your Problems': Eric Schmidt's Pentagon Offensive," *New York Times*, May 2, 2021.

[11] "The First Networked War: Eric Schmidt's Ukraine Trip Report," *2-2-2 newsletter*, September 13, 2022.

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Not Without Us*

Joseph Weizenbaum
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Whenever I am in West Germany, I am amazed by the apparent normality of everyday life. As only an occasional visitor to Germany I see strange things that must by now appear routine, even natural to Germans. For example, holes in the streets that are intended to be filled with nuclear land lines or the closeness of every German citizen to nuclear weapons storage facilities. I notice, in other words, the Germans' physical, but even more their psychological proximity to the final catastrophe.

We in America are no more distant from the catastrophe than the Germans. In case of war, regardless of whether unintentionally initiated by technology allegedly designed to avert war, or by so called statesmen or women who thought it their duty to push the button, Germans may die ten minutes earlier than we in fortress America, but we shall all die.

We have no holes in our streets for atomic land mines. We see our missile silos only now and then, that is, only whenever it pleases someone to show them to us on television. No matter how passionately our government tries to convince us that the nasty Soviets are effectively as near to us as to the Europeans, that they threaten us from, for example Cuba or Nicaragua, Americans are, on the whole, unconvinced and therefore untroubled by such efforts. It would therefore be more astounding were the average American aware of the danger that confronts us all, than that he worries so little about it. The American experience of war allows a "it can't happen here" attitude to grow rather than a concrete fear of what appears to be far removed from the immediate concerns of daily life.

I am aware that it is emotionally impossible for people to live for very long in the face of immediate threats to their very existence without bringing to bear psychological mechanisms that serve to exclude those dangers from their consciousness. But when repression necessitates systematically misdirected efforts or excludes potentially life-saving behavior, then it is time to replace it by a deep look into the threat itself.

This time has come for computer professionals. We now have the power to alter the state of the world fundamentally and in a way conducive to life.

It is a prosaic truth that none of the weapon systems which today threaten murder on a genocidal scale, and whose design, manufacture and sale condemns countless people, especially children, to poverty and starvation, that none of these devices could be developed without the earnest, even enthusiastic, cooperation of computer professionals. It cannot go on without us! Without us the arms race, especially the qualitative arms race, could not advance another step.

Does this plain, simple and obvious fact say anything to us as computer professionals? I think so:

First those among us who, perhaps without being aware of it, exercise our talents in the service of

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*An abbreviated English translation of a talk given to the Gesellschaft fur Informatik, at Karlsruhe, West Germany, on 17. July, 1986. Translated by the author.

death rather than that of life have little right to curse politicians, statesmen and women for not bringing us peace. Without our devoted help they could no longer endanger the peoples of our earth. All of us must therefore consider whether our daily work contributes to the insanity of further armament or to genuine possibilities for peace.

In this context, Artificial Intelligence (AI) comes especially to mind. Many of the technical tasks and problems in this subdiscipline of computer science stimulate the imagination and creativity of technically oriented workers particularly strongly. Goals like making a thinking being out of the computer, giving the computer the ability to understand spoken language, making it possible for the computer to see, goals like these offer nearly irresistible temptations to those among us who have not fully sublimated our playful sandbox fantasies or who mean to satisfy our delusions of omnipotence on the computer stage, i.e., in terms of computer systems. Such tasks are extraordinarily demanding and interesting. Robert Oppenheimer called them sweet. Besides, research projects in these areas are generously funded. The required monies usually come out of the coffers of the military - at least in America.

It is enormously tempting and, especially in Artificial Intelligence work, seductively simple to lose or hide oneself in details, in subproblems and their subproblems, and so on. The actual problems on which one works - and which are so generously supported - are disguised and transformed until their representations are mere fables, harmless, innocent, lovely fairy tales.

> An example: A doctoral student characterized his projected dissertation task as follows.
> A child, perhaps six or seven years old, sits in front of a computer display on which one can see a kitten and a bear - all this in full color of course. The kitten is playing with a ball. The child speaks to the computer system: "The bear should say 'thank you' when someone gives him something". The system responds in a synthetic but nevertheless pleasing voice: "Thank you, I understand." Then the child again: "Kitty, give your ball to your friend." Immediately we see the kitten on the computer display throw the ball to the bear. Then we hear the bear say: "Thank you my dear kitten."

This is the kernel of what the system, whose development is to constitute the student's doctoral work, is to accomplish. Seen from a technical point of view, the system is to understand spoken instructions - that alone is not simple - and translate them into a computer program which it is then to integrate seamlessly into its own computational structure. Not at all trivial, and beyond that, quite touching.

> Now a translation to reality:
> A fighter pilot is addressed by his pilot's associate system: "Sir, I see an enemy tank column below. Your orders please." The pilot: "When you see something like that, don't bother me, destroy the bastards and record the action. That's all." The system answers: "Yes sir!" and the plane's rockets fly earthward.

This pilot's associate system is one of three weapons which are expressly described, mainly as a problem for artificial intelligence, in the Strategic Computing Initiative, a new major research and development program of the American military. Over six hundred million dollars are to be spent on this program in the next four or five years.

It isn't my intention to assail or revile military systems. I intend this example from the actual

practice of academic artificial intelligence research in America to illustrate the euphemistic linguistic dissimulation whose effect it is to hinder thought and, ultimately, to still conscience.

I don't quite know whether it is especially computer science or its subdiscipline Artificial Intelligence that has such an enormous affection for euphemism. We speak so spectacularly and so readily of computer systems that understand, that see, decide, make judgments, and so on, without ourselves recognizing our own superficiality and immeasurable naivete with respect to these concepts. And, in the process of so speaking, we anesthetise our ability to evaluate the quality of our work and, what is more important, to identify and become conscious of its end use.

The student I mentioned above imagines his work to be about computer games for children, involving perhaps toy kittens, bears and balls. Its actual end use will likely mean that some day a young man, quite like the student himself and who has parents and possibly a girl friend, will be set afire by an exploding missile which was sent his way by a pilot's associate system shaped by the student's research. The psychological distance between the student's conception of his work and its actual implications is astronomic. It is precisely this enormous distance which makes it possible not to know and not to ask if one is doing sensible work or contributing to the greater efficiency of murderous devices.

One can't escape this state without asking, again and again: "What do I actually do? What is the final application and use of the products of my work?" and
ultimately, "am I content or ashamed to have contributed to this use?"

I am reminded in this context of a well-known American journalist who, during a Middle East highjacking, suggested that, under certain circumstances, the Israelies shoot ten Arab prisoners, selected from the many prisoners they were at the time holding, and, should the circumstances not change, shoot ten more the next day, and so on. He should not have made this suggestion unless he was prepared to go personally among the prisoners, to look with his own eyes into the eyes of the men to some of whom he will say, "you, you will die today," and then hold the pistol to the heads of those selected for murder and command his own finger to pull the trigger.

Just so should we, once we have abandoned the prettyfying of our language, begin to speak realistically and in earnest about our work as computer professionals. We should, for example, ask questions with respect to attempts to make it possible for computer systems to see. Progress in this domain will, with absolute certainty, be used to steer missiles like the Cruise and the Pershing ever more precisely to their targets. And at their targets, mass murder will be committed.

Such statements are often countered with the assertion that the computer is merely a tool. As such it can be used for good or for evil. In and of itself, it is value free. Furthermore, scientists and technicians cannot know how the products of their work will be applied, whether they will find a good or an evil use. Hence scientists and technicians cannot be held responsible for the final application of their work.

I see this argument concretely manifested in the building next to the one in which I work, the world-famous Draper Laboratory. This institution is devoted almost entirely to missile guidance and submarine navigation. [It was once, by the way, part of the Massachusetts Institute of Technology.] Many of the scientists employed there adopt the argument just stated as their own. They say that the systems on which they work can take men to the moon and bring them back just as these same systems can guarantee that missiles aimed at Moscow will actually hit Moscow when fired. They cannot know in

advance, they say, which of these two or still other goals their work will serve in the end. How then can they be held responsible for whatever consequences their work may entail? So it is, on the whole, with computer professionals. The doctoral student I mentioned, who wishes to be able to converse with his computer display, does in fact believe that future applications of his work will be exclusively in innocent applications like, for examples, childrens' games. Perhaps his research is not sponsored by the Pentagon's Strategic Computing Initiative, perhaps he never even heard of SCI. How then can he be assigned any responsibility for anti human use of which his results might be put?

Here we come to the essence of the matter: Today we know with virtual certainty that every scientific and technical result will, if at all possible, be put to use in military systems. The computer, together with the history of its development, is perhaps the key example. In these circumstances, scientific and technical workers cannot escape their responsibility to inquire about the end use of their work. They must then decide, once they know to what end it will be used, whether or not they would serve these ends with their own hands, that is, with the psychological distance between themselves and the final consequences of their work reduced to zero.

I think it important to say that I don't believe the military, in and of itself, to be an evil. Nor would I assert that the fact that a specific technology that has been adopted by the military is, on that ground alone, an evil. In the present state of the evolution of the sovereign nation-state, each state needs a military just as every city needs a fire department. (On the other hand, no one pleads for a fire station on every corner, and no one wishes for a city fire department that makes a side business out of committing prophylactic arson in the villages adjacent to the city.)

But we see our entire world, particularly its universities and science and engineering facilities, being increasingly and ever more profoundly militarized every day. "Little" wars burn in almost every part of the earth. [They serve in part to test the high-tech weapons of the "more advanced nations."] More than half of all the earth's scientists and engineers work more or less directly in military institutions or in institutions supported in the main by the military.

It is only our already deeply internalized habit of prettifying our language that permits us to speak in terms of weapons and weapons delivery systems at all, when we are, in fact, discussing atomic explosives and hydrogen bombs. Those aren't weapons! They are mass murder machines and mass murder machine delivery systems - and that is how we should speak of them, clearly, distinctly and without evasion. When one once recognizes that a nuclear mass murder machine is nothing other than an Instant Auschwitz, an instant extermination camp, an Auschwitz without railroads or Eichmans or Drs. Mengele - but an Auschwitz just the same - can one then work on systems that steer devices of this kind toward living cities? That is what I ask my colleagues. They must earnestly ask themselves such questions and deeply consider whatever responses they find in themselves. Their answers will finally manifest themselves in their actions - concretely in what they do every day.

Probably the most pandemic mental illness of our time is the almost universally held belief that the individual is powerless. This (self-fulfilling) delusion will surely be offered as a counter argument to my thesis. I demand, do I not, that a whole professions refuse to participate in the murderous insanity of our time. "That cannot be effective," I can already hear it said, "Yes, if actually no one worked on such things ... but that is plainly impossible. After all, if I don't do it, someone else will."

First, and on the most elementary level, I must say that the rule: "If I don't do it, someone else will" cannot serve as a basis of moral behavior. Every crime imaginable can be justified on its basis. For example: If I don't steal the sleeping drunk's money, someone else will.

But it is not at all trivial to ask after the meaning of effectiveness in the present context. Surely, effectiveness is not a binary matter, an either/or matter. To be sure, if what I say here were to induce a strike on the part of all scientists with respect to weapons work, that would have to be counted as effective. But there are many much more modest degrees of effectiveness toward which I aim.

I think it was George Orwell who once wrote "The highest duty of intellectuals in these times is to speak the simplest truths in the simplest possible words." For me that means first of all the duty to articulate the absurdity of our world in my actions, my writings and with my voice. I hope thereby to stir my students, my colleagues, everyone to whom I can speak directly. I hope thereby to encourage those who have already begun to think similarly, and to be encouraged by them, and possibly rouse all others I can reach out of their slumber. Courage like fear is catching! Even the most modest success in such attempts has also to count as effectiveness. Beyond that, in speaking as I do, I put what I here discuss on the public agenda and contribute to its legitimation. These are modest goals that can surely be reached.

But, finally, I want to address such larger goals as for example

* Ridding the world of nuclear mass murder devices and perhaps also of nuclear power generators.

* So reordering the world that it becomes impossible ever again to convince workers of one country that it is a necessity of life that they feel their families on the flesh and the blood and the tears of people of other countries. (That is, unfortunately, the fate of many workers today - and not only of those who earn their daily bread in armaments factories, but equally that of those of us whose daily work is to sharpen high-tech weapons.)

* So reordering the world that every human being has available to him or herself all material goods necessary for living in dignity. (I have often heard well-meaning people say that, if we apply technology, especially computer and communications technology wisely, we may reach this goal in perhaps fifty to a hundred years. But we can reach it sooner, and without waiting for technological advances. For the obstacle is not the absence of technology, it is the absence of political will!)

I once heard Elie Wiesel say: "We must believe the impossible is possible." I understand that in two different ways.

* First, had we been able to believe that "the land of the poets and the thinkers" could give birth to human extermination factories which could compete in efficiency with the automobile factories of Detroit, we might not have had to experience Bergen Belsen. The impossible horror proved possible and became reality.

* Second, it was "impossible" in the America of only 150 years ago to abolish the slavery of the black people. After all, the entire economy of America's South was built on cotton. Cotton could neither be planted nor harvested without the unpaid toil of thousands of human beings out of whose wretchedness the plantation master could squeeze his profit. Nevertheless,

> at first only a few far seeing men and women, dreamers all, in Massachusetts, later many more citizens, realists among them, came to believe the impossible was possible, that the slaves could be freed and slavery ended. And it became possible. And it became reality.

The impossible goals I mentioned here are possible, just as it is possible that we will destroy the human race. None of us can alone achieve the one nor prevent the other. But each of us must believe "it cannot be done without me."

Google workers speak out on Project Nimbus (a series of testimonials published by No tech for Apartheid)

> I'm appalled that Google has been lying to its workers about it's involvement in supporting the Israeli Ministry of Defense. This creates an unsafe environment for workers, where we cannot trust that our company is telling us the truth. Furthermore, Google has been complicit in the retaliation against workers who speak up, contributing to an even more unsafe environment where people fear expressing their opinions due to possible retaliation. Google is nothing without the labor of its workforce. We have a unique opportunity to come together and demand that Google stop it's retaliation against workers and end it's contract with the Israeli government. I do not condone my labor being used for the targeted murder of innocent civilians and I won't stay silent.

– Scout, DEI Program Manager, Google

> The weight of knowing that my labor can contribute to the oppression of Palestinians through Project Nimbus and Google's contracts with Israel regularly fills me with a profound sense of shame and outrage, particularly amidst Israel's ongoing AI-powered genocide. This understanding deeply undermines any sense of long-term investment I have in the company outside of access to healthcare or similar.
>
> Adding to the burden, as a Muslim and disabled person, I have keenly felt and explicitly experienced a glaring absence of institutional support in cultivating a positive and inclusive work environment for others like me, especially colleagues who are Palestinian, Arab, Muslim, and Jewish. Furthermore, the suppression of and retaliation against workers who have reasonably expressed concerns about their work enabling violence or injustice against Palestinians—a job most of us did not join Google for—has been deeply disturbing. If asked, I would not be able to, in good conscience, recommend Google as a place to work to anyone with a conscience.
>
> Despite Google's claims of caring about disability inclusion and responsible AI, the reality feels like a sham. There was a time when Google was able to convince me to move to a new city because I wanted to help realize Android’s goals of being "for everyone," but Project Nimbus and Google's decision to prioritize profit over principles have shattered any illusion I may have harbored about the company’s genuine concern for its users, employees, or the broader world. Despite publicly espousing lofty ideals, the company's alignment with entities that flagrantly violate international law and human rights—including their AI-powered targeting of the most vulnerable Palestinians—is a betrayal of any professed values.

– Farheen M, UX Designer, Google

> I'm disgusted at the fact that my work has a very high probability of being used to commit genocide right now. Sometimes I try to block it in my mind because I just don't wanna think about it. My productivity has been at an absolute minimum because of this, I just can't bring myself to do work. If Google cares about it's bottom line, it needs to drop this contract.

– Software Engineer, Google

Project Nimbus disturbs me deeply. I feel alienated from my work and guilty of being an employee of Google. I have spoken to many employees who are too scared to express their discomfort with Project Nimbus. Many Googlers are psychologically distressed that they could enable the potential abuse of human rights. It would greatly serve Google to abandon contracts that divide the workplace and do not live up to the standard of "Don't be evil".

– Furkan Toprak, Software Engineer, Google

As someone that works at YouTuber, I wonder how much misinformation on Project Nimbus is shared by the algorithm. The very same algorithm that boost Zionist content and shadow bans Palestinian content, like any other big tech algorithm. What big tech doesn't know, is that they are not shit with the people or what they call "users" and the people are slowly waking up by the masses- this is only the beginning.

– Jesus, Partner Operations Manager, Google

I identify as Jewish, I was raised in a Jewish household and was Bat Mitzvah'd. The genocide and control of Palestinians by the Israeli government is the opposite of all the morals and values I learned from Judaism. We've been prosecuted so many times, why would we turn around and do this to others? Google's participation in this horrific violence through Project Nimbus makes me ashamed to work for the company.

The weaponization of "anti-semitism" as a tool to justify the genocide in Palestine *almost* makes me ashamed to be Jewish too. But Im not ashamed of my Judaism, because Judaism taught me to speak up on behalf of marginalized folks who aren't being heard in the ways they deserve. It taught me to fight against injustice and to fight for what's right. And that's why I'm against Project Nimbus.

– Pazia, Software Engineer, Google

How can we continue to work with a government which is committing and being investigated for the crime of genocide? How can our company expect us workers to sit quietly while our innovation is being traded away for militarism and empire? Project Nimbus must end.

– Mohammad Khatami, Software Engineer, Google

I think all workers in tech companies should have a say in selling controversial technology. As a worker of conscience, I do not think that we should be enabling surveillance and supporting the military, especially one which threatens the livelihoods of millions of people. Unfortunately, because of how lucrative these multi million dollar contracts are, companies are incentivized to keep workers in the dark in how the technology will be used. This lack of transparency is concerning as contracts like Project Nimbus will be swept under the rug while countless people suffer.

– Alex Hong, Software Engineer, Google

Project Nimbus and the unwillingness of Google and Amazon to divest from it is a wake-up call for everyone in tech.

For a long time, the tech industry in the US has claimed to be apolitical while not shying

away from working with militaries around the world, aiding surveillance, not doing enough to protect user data, and aligning with oppressive governments. Those of us who come from other parts of the world see the disregard with which tech companies in the US operate especially when it comes to black and brown people around the world. Even within the companies, voices that try to point out this disparity face targeting, harassment, retaliation, and termination. As tech workers with access to unimaginable amount of data and computational power, we cannot stay silent. We see how AI systems are being used to kill people in Palestine, how Facebook aided the genocide in Myanmar, the role of tech in the rise of Islamophobia in India, and plenty of other instances. Tech executives are increasingly unwilling to listen to workers even when it's clear that this culture is affecting workplace conditions and making us culpable for large scale violence and genocide. I used to be a tech worker who had bought into the myth of meritocracy and neutrality of tech companies, but the reality is very different. It is time for us make our voice heard as workers and disrupt the status quo.

– Software Engineer, Google

Every day, it makes me uncomfortable to work at a company with leadership that excitedly approved of Project Nimbus and its partnership with Israel.

The obsession with AI at Google feels deeply unsettling. All this talk about its power, and zero acknowledgement of its darkside. As someone of Pakistani and Afghan descent, I'm familiar with how the U.S. government used drone technology to murder innocent kids and families in Pakistan and Afghanistan. Kids like Tariq Aziz. I think about the drone operator sitting in a cushy chair out of Nevada. Killing from a distance.

Knowing cloud technology has an AI component, I worry as a Google worker how Google might be complicit in supporting the disgusting and inhumane genocide of Palestinians by Israel. How will its AI Cloud technology be used to continue the subjugation of Palestinians? Are there AI Sales Representatives from Google going to Israel to speak about how they can continue treating Palestinians like animals? Will Google's products be used by the Israeli government as a backbone to building horrific AI technology like The Gospel? Or are they purely focused on the dollar signs?

Google, don't continue to be on the wrong side of history. Your own workers like me and many others are asking you not to.

Palestine zindabad, long live Palestinian resistance <3

– Zuha Khan, Senior Programmatic Account Manager, Google

It is impossible to feel excited and energized to work when you know your company is providing the Israeli government products that are helping it commit atrocities in Palestine. I work on Google Nest, and it feels disingenuous to be working to create a Smart Home that takes care of the people in it, when Project Nimbus is helping Israel destroy the homes of Palestinians, and take their lives.

– Tina Vachovsky, Staff Software Engineer, Google

November 6, 2023. Today was my first day back at Google after maternity leave. I cuddled my baby daughter, Soraya, close and kissed her goodbye and shed a few goodbye tears. As I pulled up to the gleaming, huge campus in Mountain View, I was reminded of what a beacon of success and wealth that Google has been for the last 25 years. Working here had always been a dream of mine; as a child of South Asian

immigrants, I had been raised to reach for the very top of American corporate prestige. But as I entered the building and swiped my badge I suddenly felt nauseated thinking about how there are winners and losers in this game, and how ‘living the dream’ at Google has come at the expense of others, like the Palestinians in Gaza.
Through Project Nimbus, Google is providing technology that is fueling the first AI powered genocide.
According to the Nation, Project Nimbus will increase the IDF’s competence in artificial intelligence technologies, such as those deployed in the repression of Palestinian activists, surveillance along the Gaza border, and Israel’s Iron Dome system, and be used by the Israel Land Authority to advance Jewish settlements while pushing Palestinians into denser areas.
Even an Israeli government press release explicitly says it is under IDF leadership, and Google was explicitly chosen over Oracle by the IDF due to its ability to meet the big data analysis, AI, and ML requirements for the military.
As a mother at Google, it makes me absolutely sick to think that our technology is endangering an innocent Palestinian child.
That November morning that I kissed Soraya goodbye, I got to come back home to her, just in time to hold her and read our bedtime books. But if I was a mother in Gaza, I could not be afforded such a privilege.
Because every 10 minutes, a mother in Gaza has her child murdered by Israeli bombs. We have now passed 9,077 murdered babies and children by Israel. For the last 2 months my heart has been breaking on a daily basis. Bomb after bomb after bomb. EVERY. SINGLE. DAY. 💔💔💔.
Yesterday, I watched a mom say goodbye to her newborn baby boy who was killed in a bombing while he was being breastfed - what was his crime?
I came to this company to do good and change the world. And I still believe that is possible - but we must make better choices. Is a $1.2B contract worth it? Or will we put the lives of 2M Gazans ahead of the profits?
Every 10 minutes a child is murdered in Gaza. This mother says, "Not on our watch Google"

– Zanoon Nissar, Program Manager, Google

As a member of a team within Google Cloud, I cannot be sure whether my work is helping facilitate military attacks that are hurting members of my community via its use in Project Nimbus. I am unable to adhere to my own ethical standard as an engineer, nor to Google’s "values," such as respecting the user and respecting each other. I find that there is no pathway for accountability given the classified nature of the project. When this is coupled with the fact that the project is used by the Israeli defense establishment, there is no way for me to know whether our work is being used unethically.

– Software Engineer, Google

Deadly Algorithms: Can legal codes hold software accountable for code that kills?

Susan Schuppli

COMMENTARy

Deadly algorithms

Can legal codes hold software accountable for code that kil s?

Susan schuppli

Algorithms have long adjudicated over vital processes that help to ensure our wellbeing and survival, from pacemakers that maintain the natural rhythms of the heart, and genetic algorithms that optimise emergency response times by cross-referencing ambulance locations with demographic data, to early warning systems that track approaching storms, detect seismic activity, and even seek to prevent genocide by monitoring ethnic conflict with orbiting satellites. [1] However, algorithms are also increasingly being tasked with instructions to kill: executing coding sequences that quite literally execute.

Guided by the Obama presidency's conviction that the War on Terror can be won by 'out-computing' its enemies and pre-empting terrorists' threats using predictive software, a new generation of deadly algorithms is being designed that will both control and manage the 'kill-list,' and along with it decisions to strike. [2] Indeed, the recently terminated practice of 'signature strikes', in which data analytics was used to determine emblematic 'terrorist' behaviour and match these patterns to potential targets on the ground, already points to a future in which intelligence-gathering, assessment and military action, including the calculation of who can legally be killed, will largely be performed by machines based upon an ever-expanding database of aggregated information. As such, this transition to execution by algorithm is not simply a continuation of killing at ever greater distances inaugurated by the invention of the bow and arrow that separated warrior and foe, as many have suggested. [3] It is also a consequence of the ongoing automation of warfare, which can be traced back to the cybernetic coupling of Claude Shannon's mathematical theory of information with Norbert Wiener's wartime research into feedback loops and communication control systems. [4] As this new era of intelligent weapons systems progresses, operational control and decision-making are increasingly being outsourced to machines.

Computing terror

In 2011 the US Department of Defense (DOD) released its 'roadmap' forecasting the expanded use of unmanned technologies, of which unmanned aircraft systems – drones – are but one aspect of an overall strategy directed towards the implementation of fully autonomous Intelligent Agents. It projects its future as follows:

The Department of Defense's vision for unmanned systems is the seamless integration of diverse unmanned capabilities that provide flexible options for Joint Warfighters while exploiting the inherent advantages of unmanned technologies, including persistence, size, speed, maneuverability, and reduced risk to human life. DOD envisions unmanned systems seamlessly operating with manned systems while gradually reducing the degree of human control and decision making required for the unmanned portion of the force structure. [5] The document is a strange mix of Cold War caricature and Fordism set against the backdrop of contemporary geopolitical anxieties, which sketches out two imaginary vignettes to provide 'visionary' examples of the ways in which autonomy can improve efficiencies through inter-operability across military domains, aimed at enhancing capacities and flexibility between manned and unmanned sectors of the US Army, Air Force and Navy. In these future scenarios, the scripting and casting are strikingly familiar, pitting the security of hydrocarbon energy supplies against rogue actors equipped with Russian technology. One concerns an ageing Russian nuclear submarine deployed by a radicalized Islamic nation-state that is beset by an earthquake in the Pacific, thus contaminating the coastal waters of Alaska and threatening its oil energy reserves. The other involves the sabotaging of an underwater oil pipeline in the Gulf of Guinea off the coast of Africa, complicated by the approach of a hostile surface vessel capable of launching a Russian short-range air-to-surface missile. [6]

These Hollywood-style action film vignettes – fully elaborated across five pages of the report – provide an odd counterpoint to the claims being made throughout the document as to the sober science, political prudence and economic rationalizations that guide the move towards fully unmanned systems. On what grounds are we to be convinced by these visions and strategies? On the basis of a collective cultural imaginary that finds its politics within the CGI labs of the infotainment industry? Or via an evidence-based approach to solving the complex problems posed by changing global contexts? Not surprisingly, the level of detail (and techno-fetishism) used to describe unmanned responses to these risk scenarios is far more exhaustive than that devoted to the three primary challenges which the report identifies as specific to the growing reliance upon and deployment of automated and autonomous systems:1. Investment in science and technology (S&T) to enable more capable autonomous operations. 2. Development of policies and guidelines on what decisions can be safely and ethically delegated and under what conditions. 3. Development of new Verification and Validation (V&V) and T&E techniques to enable verifiable 'trust' in autonomy. [7]

As the second of these 'challenges' indicates, the delegation of decision-making to computational regimes is particularly crucial here, in so far as it provokes a number of significant ethical dilemmas but also urgent questions regarding whether existing legal frameworks are *capable* of attending to the emergence of these new algorithmic actors. This is especially concerning when the logic of precedent that organizes much legal decision-making (within common law systems) has followed the same logic that organized the drone programme in the first place: namely, the justification of an action based upon a pattern of behaviour that was established by prior events.

The legal aporia intersects with a parallel discourse around moral responsibility; a much broader debate that has tended to structure arguments around the deployment of armed drones as an antagonism between humans and machines. As the authors of the entry on 'Computing and Moral Responsibility' in the *Stanford Encyclopedia of Philosophy* put it:

Traditionally philosophical discussions on moral responsibility have focused on the human components in moral action. Accounts of how to ascribe moral responsibility usually describe human agents performing actions that have well-defined, direct consequences. In today's increasingly technological society, however, human activity cannot be properly understood without making reference to technological artifacts, which complicates the ascription of moral responsibility. [8]

When one poses the question, under what conditions is it morally acceptable to deliberately kill a human being, one is not, in this case, asking whether the law permits such an act for reasons of imminent threat, self-defence or even empathy for someone who is in extreme pain or in a non-

responsive vegetative state. The moral register around the decision to kill operates according to a different ethical framework: one that doesn't necessarily bind the individual to a contract enacted between the citizen and the state. Moral positions can be specific to individual values and beliefs whereas legal frameworks permit actions in our collective name as citizens contracted to a democratically elected body that acts on our behalf but with which we might be in political disagreement. While it is, then, much easier to take a moral stance towards events that we might oppose – US drone strikes in Pakistan – than to justify a claim as to their specific illegality given the anti-terror legislation that has been put in place since 9/11, assigning moral responsibility, proving criminal negligence or demonstrating legal liability for the outcomes of deadly events becomes even more challenging when humans and machines interact to make decisions together, a complication that will only intensify as unmanned systems become more sophisticated and act as increasingly independent legal agents. Moreover, the outsourcing of decision-making to the judiciary as regards the validity of scientific evidence, which followed the 1993 *Daubert* ruling – in the context of a case brought against Merrell Dow Pharmaceuticals – has, in addition, made it difficult for the law to take an activist stance when confronted with the limitations of its own scientific understandings of technical innovation. At present it would obviously be unreasonable to take an algorithm to court when things go awry, let alone when they are executed perfectly, as in the case of a lethal drone strike.

By focusing upon the legal dimension of algorithmic liability as opposed to more wide-ranging moral questions I do not want to suggest that morality and law should be consigned to separate spheres. However, it is worth making a preliminary effort to think about the ways in which algorithms are not simply reordering the fundamental principles that govern our lives, but might also be asked to provide alternate ethical arrangements derived out of mathematical axioms.

Algorithmic accountability

Law, which has already expanded the category of 'legal personhood' to include non-human actors such as corporations, also offers ways, then, to think about questions of algorithmic accountability. [9] Of course many would argue that legal methods are not the best frameworks for resolving moral dilemmas. But then again nor are the objectives of counter-terrorism necessarily best serviced by algorithmic oversight. Shifting the emphasis towards a juridical account of algorithmic reasoning might, at any rate, prove useful when confronted with the real possibility that the kill list and other emergent matrices for managing the war on terror will be algorithmically derived as part of a techno-social assemblage in which it becomes impossible to isolate human from non-human agents. It does, however, raise the 'bar' for what we would now need to ask the law to do. The degree to which legal codes can maintain their momentum alongside rapid technological change and submit 'complicated algorithmic systems to the usual process of checks-and-balances that is generally imposed on powerful items that affect society on a large scale' is of considerable concern. [10] Nonetheless, the stage has already been set for the arrival of a new cast of juridical actors endowed not so much with free will in the classical sense (that would provide the conditions for criminal liability), but intelligent systems which are wilfully free in the sense that they have been programmed to make decisions based upon their own algorithmic logic. [11] While armed combat drones are the most publicly visible of the automated military systems that the DOD is rolling out, they are only one of the many remote-controlled assets that will gather, manage, analyse and act on the data that they acquire and process. Proponents of algorithmic decision-making laud the near instantaneous response time that allows Intelligent Agents – what some have called 'moral predators' – to make micro-second adjustments to avert a lethal drone strike should, for example, children suddenly emerge out of a house that is being targeted as a militant hideout. 12 Indeed robotic systems have long been argued to decrease the error margin of civilian casualties that are often the consequence of actions made by tired soldiers in the field. Nor are machines overly concerned with their own self-preservation, which might likewise cloud judgement under conditions of duress. Yet, as Sabine Gless and Herbert Zech ask, if these 'Intelligent Agents are often used in areas where the risk of failure and error can be reduced by relying on machines rather than humans … the question arises: Who is liable if things go wrong?' [13] Typically when injury and death occur to humans, the legal debate focuses upon the degree to which such an outcome was foreseeable and thus adjudicates on the basis of whether all reasonable efforts and pre-emptive protocols had been built into the system to mitigate against such an occurrence. However, programmers cannot of course run all the variables that combine to produce machinic decisions, especially when the degree of uncertainty as to conditions and knowledge of events on the ground is as variable as the shifting contexts of conflict and counter-terrorism. Werner Dahm, chief scientist at the United States Air Force, typically stresses the difficulty of designing error-free systems: 'You have to be able to show that the system is not going to go awry – you have to disprove a negative.' [14] Given that highly automated decision-making processes involve complex and rapidly changing contexts mediated by multiple technologies, can we then reasonably expect to build a form of ethical decision-making into these unmanned systems? And would an algorithmic approach to managing the ethical dimensions of drone warfare – for example, whether to strike 16-year-old Abdulrahman al-Awlaki in Yemen because his father was a radicalized cleric; a role that he might inherit – entail the same logics that characterized signature strikes, namely that of proximity to militant-like behaviour or activity? [15] The euphemistically rebranded kill list known as the 'disposition matrix' suggests that such determinations can indeed be arrived at computationally. As Greg Miller notes: 'The matrix contains the names of terrorism suspects arrayed against an accounting of the resources being marshaled to track them down, including sealed indictments and clandestine operations.' [16] Intelligent systems are arguably legal agents but not as of yet legal persons, although precedents pointing to this possibility have already been set in motion. The idea that an actual human being or 'legal person' stands behind the invention of every machine who might ultimately be found responsible when things go wrong, or even when they go right, is no longer tenable and obfuscates the fact that complex systems are rarely, if ever, the product of single authorship; nor do humans and machines operate in autonomous realms. Indeed, both are so thoroughly entangled with each other that the notion of a sovereign human agent functioning *outside* the realm of machinic mediation seems wholly improbable. Consider for a moment only one aspect of conducting drone warfare in Pakistan – that of US flight logistics – in which we find that upwards of 165 people are required just to keep a Predator drone in the air for twenty-four hours, the half-life of an average mission. These personnel requirements are themselves embedded in multiple techno-social systems composed of military contractors, intelligence officers, data analysts, lawyers, engineers, programmers, as well as hardware, software, satellite communication, and operation centres (CAOC), and so on. This does not take into account the R&D infrastructure that engineered the unmanned system, designed its operating procedures and beta-tested it. Nor does it acknowledge the administrative apparatus that brought all of these actors together to create the event we call a drone strike. [17]

In the case of a fully automated system, decision-making is reliant upon feedback loops that continually pump new information into the system in order to recalibrate it. But perhaps more significantly in terms of legal liability, decision-making is also governed by the system's innate ability to self-educate: the capacity of algorithms to learn and modify their coding sequences independent of human oversight. Isolating the singular agent who is directly responsible – legally – for the production of a deadly harm (as currently required by criminal law) suggests, then, that no one entity beyond the Executive Office of the President might ultimately be held accountable for the aggregate conditions that conspire to produce a drone strike and with it the possibility of civilian casualties. Given that the USA doesn't accept the jurisdiction of the International Criminal Court and Article 25 of the Rome Statute governing individual criminal responsibility, what new legal formulations could, then, be created that would be able to account for indirect and aggregate causality born out of a complex chain of events including so called digital perpetrators? American tort law, which adjudicates over civil wrongs, might be one such

place to look for instructive models. In particular, legal claims regarding the use of environmental toxins, which are highly distributed events whose lethal effects often take decades to appear, and involve an equally complex array of human and non-human agents, have been making their way into court, although not typically with successful outcomes for the plaintiffs. The most notable of these litigations have been the mass toxic tort regarding the use of Agent Orange as a defoliant in Vietnam and the Bhopal disaster in India. [18] Ultimately, however, the efficacy of such an approach has to be considered in light of the intended outcome of assigning liability, which in the cases mentioned was not so much deterrence or punishment, but, rather, compensation for damages.

Recoding the law

While machines can be designed with a high degree of intentional behaviour and will outperform humans in many instances, the development of unmanned systems will need to take into account a far greater range of variables, including shifting geopolitical contexts and murky legal frameworks, when making the calculation that conditions have been met to execute someone. Building in fail-safe procedures that abort when human subjects of a specific size (children) or age and gender (males under the age of 18) appear, sets the stage for a proto-moral decision-making regime. But is the design of ethical constraints really where we wish to push back politically when it comes to the potential for execution by algorithm? Or can we work to complicate the impunity that certain techno-social assemblages currently enjoy? As a 2009 report by the Royal Academy of Engineering on autonomous systems argues,

Legal and regulatory models based on systems with human operators may not transfer well to the governance of autonomous systems. In addition, the law currently distinguishes between human operators and technical systems and requires a human agent to be responsible for an automated or autonomous system. However, technologies which are used to extend human capabilities or compensate for cognitive or motor impairment may give rise to hybrid agents … Without a legal framework for autonomous technologies, there is a risk that such essentially human agents could not be held legally responsible for their actions – so who should be responsible? [19] Implicating a larger set of agents including algorithmic ones that aid and abet such an act might well be a more effective legal strategy, even if expanding the limits of criminal liability proves unwieldy. As the 2009 ECCHR *Study on Criminal Accountability in Sri Lanka* put it: 'Individuals, who exercise the power to organise the pattern of crimes that were later committed, can be held criminally liable as perpetrators. These perpetrators can usually be found in civil ministries such as the ministry of defense or the office of the president.' [20] Moving down the chain of command and focusing upon those who participate in the production of violence by carrying out orders has been effective in some cases (Sri Lanka), but also problematic in others (Abu Ghraib) where the indictment of low-level officers severed the chain of causal relations that could implicate more powerful actors. Of course prosecuting an algorithm alone for executing lethal orders that the system is in fact designed to make is fairly nonsensical if the objective is punishment. The move must, then, be part of an overall strategy aimed at expanding the field of causality and thus broadening the reach of legal responsibility.

My own work as a researcher on the Forensic Architecture project, alongside Eyal Weizman and several others, in developing new methods of spatial and visual investigation for the UN inquiry into the use of armed drones, provides one specific vantage point for considering how machinic capacities are reordering the field of political action and thus calling forth new legal strategies. [21] In taking seriously the agency of things, we must also take seriously the agency of things whose productive capacities are enlisted in the specific decision to kill. Computational regimes, in operating largely beyond the thresholds of human perception, have produced informatic conjunctions that have redistributed and transformed the spaces in which action occurs, as well as the nature of such consequential actions themselves. When algorithms are being enlisted to out-compute terrorism and calculate who can and should be killed, do we not need to produce a politics appropriate to these radical modes of calculation and a legal framework that is sufficiently agile to deliberate over such events?

Decision-making by automated systems will produce new relations of power for which we have as yet inadequate legal frameworks or modes of political resistance – and, perhaps even more importantly, insufficient collective understanding as to how such decisions will actually be made and upon what grounds. Scientific knowledge about technical processes does not belong to the domain of science alone, as the *Daubert* ruling implies. However, demands for public accountability and oversight will require much greater participation in the epistemological frameworks that organize and manage these new techno-social systems, and that may be a formidable challenge for all of us. What sort of public assembly will be able to prevent the premature closure of a certain 'epistemology of facts', as Bruno Latour would say, that are at present cloaked under a veil of secrecy called 'national security interests' – the same order of facts that scripts the current DOD roadmap for unmanned systems?

In a recent ABC Radio interview, Sarah Knuckey, director of the Project on Extrajudicial Executions at New York University Law School, emphasized the degree to which drone warfare has strained the limits of international legal conventions and with it the protection of civilians. [22] The 'rules of warfare' are 'already hopelessly outdated', she says, and will require 'new rules of engagement to be drawn up': 'There is an enormous amount of concern about the practices the US is conducting right now and the policies that underlie those practices. But from a much longer-term perspective and certainly from lawyers outside the US there is real concern about not just what's happening now but what it might mean 10, 15, 20 years down the track.' [23] Could these new rules of engagement – new legal codes – assume a similarly preemptive character to the software codes and technologies that are being evolved – what I would characterize as a *projective* sense of the law? Might they take their lead from the spirit of the Geneva Conventions protecting the rights of noncombatants, rather than from those protocols (the Hague Conventions of 1899, 1907) that govern the use of weapons of war, and are thus reactive in their formulation and event-based? If so, this would have to be a set of legal frameworks that is not so much determined by precedent – by what has happened in the past – but, instead, by what may take place in the future.

Notes

1. ^ See, for example, the satel ite monitoring and atrocity evidence programmes: 'Eyes on Darfur' (www.eyesondarfur.org) and 'The Sentinel Project for Genocide Prevention' (http://thesentinelproject.org).

2. ^ Cori Crider, 'Kil ing in the Name of Algorithms: How Big Data Enables the Obama Administration's Drone War', *Al Jazeera America*, 2014, http://america.aljazeera.com/opinions/2014/3/drones-big-data-waronterrorobama.html [archive]; accessed 18 May 2014. See also the flow chart in Daniel Byman and Benjamin Wittes, 'How Obama Decides Your Fate if He Thinks You're a Terrorist,' *The Atlantic*, 3 January 2013, www.theatlantic.com/ international/ archive/2013/01/how-obama-decides-your-fate-if-he-thinks-youre-a-terrorist/266419.

3. ^ For a recent account of the multiple and compound geographies through which drone operations are executed, see Derek Gregory, 'Drone Geographies', *Radical Philosophy* 183 (January/February 2014), pp. 7–19.

4. ^ Contemporary information theorists would argue that the second-order cybernetic model of feedback and control, in which external data is used to adjust the system, doesn't take into account the unpredictability of evolutive data internal to the system resulting from crunching

ever-larger datasets. See Luciana Parisi's Introduction to *Contagious Architecture: Computation, Aesthetics, and Space*, MIT Press, Cambridge MA, 2013. For a discussion of Weiner's cybernetics in this context, see Reinhold Martin, 'The Organizational Complex: Cybernetics, Space, Discourse', *Assemblage* 37, 1998, p. 110.

5. ^ DOD, *Unmanned Systems Integrated Roadmap Fy2011–2036*, Office of the Undersecretary of Defense for Acquisition, Technology, & Logistics, Washington, DC, 2011, p. 3, www.defense.gov/pubs/DOD-USRM2013.pdf. [archive]

6. ^ Ibid., pp. 1–10.

7. ^ Ibid., p. 27.

8. ^ Merel Noorman and Edward N. Zalta, 'Computing and Moral Responsibility,' *The Stanford Encyclopedia of Philosophy* (2014), http://plato.stanford.edu/archives/sum2014/entries/computing-responsibility. [archive]

9. ^ See John Dewey, 'The Historic Background of Corporate Legal Personality', *Yale Law Journal*, vol. 35, no. 6, 1926, pp. 656, 669.

10. ^ Data & Society Research Institute, 'Workshop Primer: Algorithmic Accountability', *The Social, Cultural & Ethical Dimensions of 'Big Data'* workshop, 2014, p. 3.

11. ^ See Gunther Teubner, 'Rights of Non-Humans? Electronic Agents and Animals as New Actors in Politics and Law,' *Journal of Law & Society*, vol. 33, no. [4] , 2006, pp. 497–521.

12. ^ See Bradley Jay Strawser, 'Moral Predators: The Duty to Employ Uninhabited Aerial Vehicles,' *Journal of Military Ethics*, vol. 9, no. 4, 2010, pp. 342–68.

13. ^ Sabine Gless and Herbert Zech, 'Intelligent Agents: International Perspectives on New Chal enges for Traditional Concepts of Criminal, Civil Law and Data Protection', text for 'Intelligent Agents' workshop, 7–8 February 2014, University of Basel, Faculty of Law, www.snis.ch/sites/default/files/workshop_intelligent_agents.pdf. [archive]

14. ^ Agence-France Presse, 'The Next Wave in U.S. Robotic War: Drones on Their Own', *Defense News*, 28 September 2012, p. 2, www.defensenews.com/article/20120928/DEFREG02/309280004/The-Next-WaveU-S-Robotic-War-Drones-Their-Own. [archive]

15. ^ When questioned about the drone strike that kil ed 16-year old American-born Abdulrahman al-Awlaki, teenage son of radicalized cleric Anwar Al-Awlaki, in Yemen in 2011, Robert Gibbs, former White House press secretary and senior adviser to President Obama's re-election campaign, replied that the boy should have had 'a more responsible father'.

16. ^ Greg Mil er, 'Plan for Hunting Terrorists Signals U.S. Intends to Keep Adding Names to Kill Lists', *Washington Post*, 23 October 2012, www.washingtonpost.com/world/national-security/plan-for-hunting-terroristssignals-us-intends-to-keep-adding-names-to-kil-lists/2012/10/23/4789b2ae-18b3 [archive]–11e2–a55c-39408fbe6a4b_ story.html.

17. ^ 'While it might seem counterintuitive, it takes significantly more people to operate unmanned aircraft than it does to fly traditional warplanes. According to the Air Force, it takes a jaw-dropping 168 people to keep just one Predator aloft for twenty-four hours! For the larger Global Hawk surveil ance drone, that number jumps to 300 people. In contrast, an F-16 fighter aircraft needs fewer than one hundred people per mission.' Medea Benjamin, *Drone Warfare: Killing by Remote Control*, Verso, London and New York, 2013, p. 21.

18. ^ See Peter H. Schuck, *Agent Orange on Trial: Mass Toxic Disasters in the Courts*, Belknap Press of Harvard University Press, Cambridge MA, 1987. See also: www.bhopal.com/bhopal-litigation. [archive]

19. ^ Royal Academy of Engineering, *Autonomous Systems: Social, Legal and Ethical Issues*, RAE, London, 2009, p. 3, www.raeng.org.uk/societygov/engineeringethics/pdf/Autonomous_Systems_Report_09.pdf. [archive]

20. ^ European Center for Constitutional and Human Rights, *Study on Criminal Accountability in Sri Lanka as of January 2009*, ECCHR, Berlin, 2010, p. 88.

21. ^ Other members of the Forensic Architecture drone investigative team included Jacob Burns, Steffen Kraemer, Francesco Sebregondi and SITU Research. See www.forensic-architecture.org/case/drone-strikes. [archive]

22. ^ Bureau of Investigative Journalism, 'Get the Data: Drone Wars', www.thebureauinvestigates.com/category/projects/drones/drones-graphs. [archive]

23. ^ Annabel e Quince, 'Future of Drone Strikes Could See Execution by Algorithm', *Rear Vision*, ABC Radio, edited transcript, pp. 2–3.

The Algorithmically Accelerated Killing Machine

AI Now Institute

by Lucy Suchman

On 11 January 2024, the International Court of Justice opened proceedings on charges of genocide brought by South Africa against Israel's operations in Gaza. Israel, on its side, frames its military operations in Gaza as self defense and a justifiable response to the massacre of Israeli civilians by Hamas on 7 October 2023. In the media coverage on Israeli operations in Gaza, one investigative report stood out for those of us who have been following developments in the algorithmic intensification of military killing machines, a story of Israel's AI-enabled targeting system named Habsora, or the Gospel.

Headlined "A mass assassination factory": Inside Israel's calculated bombing of Gaza,' the report draws on sources within the Israeli intelligence community who confirm that Israeli Defense Force (IDF) operations in the Gaza strip combine more permissive authorization for the bombing of non-military targets with a loosening of constraints regarding expected civilian casualties. This policy sanctions the bombing of densely populated civilian areas, including high-rise residential and public buildings designated as so called 'power targets'. Official legal guidelines require that selected buildings must house a legitimate military target and be empty at the time of their destruction; the latter has resulted in the IDF's issuance of a constant and changing succession of unfeasible evacuation orders to those trapped in diminishingly small areas of Gaza. These targeting practices are presumably facilitated by the extent and intensity of the surveillance infrastructure in the Occupied Palestinian Territories (see Anthony Lowenstein's *The Palestine Laboratory*). Moreover, once Israel declares the entire surface of Gaza as a cover for Hamas tunnels, all of which are assumed to be legitimate military targets, the entire strip becomes fair game for destruction.

A direct corollary of this operational strategy is the need for an unbroken stream of candidate targets. To meet this requirement, Habsora is designed to accelerate the generation of targets from surveillance data, creating what one former intelligence officer (quoted in the story's headline) describes as a "mass assassination factory". Most notably, the Israeli bombardment of Gaza has shifted the argument for AI-enabled targeting from claims to greater precision and accuracy, to the objective of accelerating the rate of destruction. IDF spokesperson R Adm Daniel Hagari has acknowledged that in the bombing of Gaza "the emphasis is on damage and not on accuracy." For those who have been advancing precision and accuracy as the high moral ground of data-driven targeting, this admission must surely be disruptive. It shifts the narrative from a technology in aid of adherence to International Humanitarian Law (IHL) and the Geneva Conventions, to automation in the name of industrial scale productivity in target generation, enabling greater speed and efficiency in killing. As the intelligence sources acknowledge, moreover, Israel's operations are not indiscriminate but are deliberately designed to create 'shock' among the civilian population, under the premise that this will somehow contribute to Israel's aim of eliminating Hamas.

Israel's mobilization of algorithmic intensification to accelerate target production should be understood within a wider technopolitical context of so-called network-centric warfare. A project dating back to the 1990s, with roots in the cybernetic imaginary of the Cold War, data-driven warfighting promises a technological solution to the longstanding problem of 'situational

awareness' as a prerequisite for the perpetuation of military logics. As National Defense Magazine observes of the various proposals for networked warfare "what all these concepts have in common is the vision of a truly networked battlefield in which data moves at the speed of light to connect not only sensors to shooters, but also the totality of deployed forces and platforms." Data here are naturalised, treated as self-evident signs emitted by an objectively existing world 'out there,' rather than as the product of an extensively engineered chain of translation from machine readable signals to ad hoc systems of classification and interpretation. And contra the idea that it is the demonstrated value of data that leads to surveillance and data gathering, data-driven operations are mandated by investment in those infrastructures. The on-faith investment in surveillance and data gathering, in other words, feeds a desire to rely on data for decision-making, however questionable the provenance and chains of inference.

All of this occurs in a context of Israel's economic commitment to establishing itself as a leading purveyor of high-tech military technoscience, not least in so-called AI-enabled warfighting. For both Ukraine and Israel these wars are an opportunity to boost their arms sales. Battle-tested systems are easier to sell, and US venture capital firms like Eric Schmidt's Innovation Endeavors, and companies like Palantir, are lining up to be part of the booming weapons industry. Yet enormous questions remain regarding the validity of the assumptions built into these systems about who comprises an imminent threat and about the legitimacy of their targeting functions under the Geneva Conventions and the laws of war. We know that these platforms require continually updated datasets sourced from satellite imagery, drone footage and other surveillance data monitoring the movements and behaviour patterns of individuals and groups, including cell phone tracking, social media, and intercepted communications. But we don't know how data quality is validated or what assumptions are built into categories like "military objects" or "persons of interest" and their designation as legitimate targets. The evidence from Gaza, where as of this writing civilian casualties have surpassed 25,000 (and are likely significantly higher), including over 10,000 children and destruction of roughly 70% of Gaza's buildings and critical infrastructure, the gospel of AI-enabled precision and accuracy has now been revealed as a pretext for the acceleration of unrestrained and criminal acts of killing. While the masters of war enjoy their short-term profits through the promise of technological solutions, critical voices, including a growing number inside Israel, agree that only an immediate ceasefire and unconditional release of hostages can re-open the path to a political solution. Let us hope that the IJC reaches the same conclusion.

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FORUMS

A CONVERSATION WITH IVÁN CHAAR LÓPEZ

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This second installment of the forum focuses on border-control technologies. While they seem very new, these technologies have a long history that wends its way through the problems of identification and verification as our border passes went digital. Iván Chaar López excavates these histories, the histories of the U.S.-Mexico border, and those of the bodies that traverse that political boundary. In his work, he shows us how border control is part of a long U.S. imperial project that creates security in one space and insecurity in another. These processes occur through engaging with differently surveilled bodies through multiple and ever new forms of watching.

Insights

Sareeta Amrute: In your work, you trace the development of automated border control technologies to the 1970s. Many readers might be surprised at how far back data-enabled technologies of surveillance and control go. What was your purpose in bringing forth this older history?

Iván Chaar López: It was surprising to me as well. As I researched the development and use of drones by Customs and Border Patrol in the early 2000s, I learned about the efforts to automate border and immigration enforcement in the 1970s. I did not set out to take us to that period; rather, the archival materials I came across at the U.S. Citizenship and Immigration Services Reference Library forced me to make sense of those efforts. You could say that my historical approach led me in this direction, to think beyond our immediate technological practices. Oftentimes, public debate tends to construe present-day technological practices as new or as a complete transformation of previous practices. Yet this way of understanding technology is an example of a kind of compliant trust in cyberutopian discourse—information technologies as ever changing and improving, and always behaving as expected and designed. A historical approach centered on the materiality of infrastructures reveals both continuities, disruptions, and moments of emergence. While drone operations today surely generate new affordances, I argue these operations should be understood as connected to a moment in the mid-20th century when scholars, government officials, and technicians began exploring how the management of information could help actualize the administration of populations and produce the border. Actors from these communities helped establish what I call, in my forthcoming article in *Critical Ethnic Studies* [1], a regime of connectivity centered on data capture, storage, processing, and referentiality. It is partially in such a context that we should understand and interrogate existing automated border-control technologies.

SA: Many of us from immigrant backgrounds are intimately aware of the travails of the Green Card and the I-186 card. For those who might not know what these are, can you briefly explain them and their histories as technopolitical—as you call it—constructs? How are these cards related to the driver's license, a technology much more familiar to most?

ICL: The Green Card (Form I-151) and the Mexican Border Crossing card (Form I-186)

are technologies of racial and class mobility. Both identifications were initially issued by the U.S. Immigration and Naturalization Service in the mid-20th century as a way to manage and control the presence of migrants within U.S. territory. Form I-151 governed those "alien" applicants that were allowed to reside and work in the U.S. The identification was produced in the aftermath of World War II efforts to register all alien nationals, though a major concern was discriminating between seemingly loyal and disloyal citizens. Discourses on loyalty were often informed by racializing imaginaries that posited Japanese citizens and U.S. citizens of Japanese descendants as duplicitous, impossible, and potentially "enemy" subjects of the nation. As a result, the Green Card has been entangled with the racial management of enmity. Form I-186 was meant to control the cross border movements of Mexican nationals who wished to enter U.S. territory to buy goods, visit family, or visit U.S. towns/cities. The Mexican Border Crossing card explicitly stated its possessor was not allowed to work; they were authorized to be in the country only for a period of not more than 72 hours and to travel within 25 miles of the southern border.

MQ-9 Reaper drone, Creech AFB (source: U.S. Air Force/Lance Cheung).

I studied these identifications as technopolitical artifacts because they were designed to enact specific political goals—I'm thinking here with the work of Gabrielle Hecht who studies the technopolitics of nuclear power. As technopolitical objects, migrant-identification documents require the existence of a regime of discourses, actors, and practices to bring them forth. Here again is where I see regimes of connectivity as producing a particular style of technopolitics anchored in the input, output, and processing of data. This is something I tease out further in my book manuscript, tentatively titled *The Cybernetic Border*.

Migrant identification documents are similar to driver's licenses and passports for the ways in which they govern mobility: who is allowed to move from one space into another, and the conditions through which such movement is possible and authorized. As identification documents, they also attempt to standardize the process of identification by establishing objective criteria that are separate from the subjective process of verifying someone's identity. In the U.S. context, who has been allowed to move and for what purposes has all been informed by the country's involvement with the development of racial capitalism.

Modern communications center ca. 1974 (Source: [7]).

SA: One of the most important facets of your work, in my reading of it, is how you connect locations in the Global South (like Vietnam and Mexico) and the populations who reside there with the history you tell of data-backed U.S. imperialism. Can you draw out for us what you find out about borders and surveillance when you think from these sites? What is surprising or new in what you've discovered?

ICL: U.S. empire exists through a range of practices that set out to demarcate its boundaries of belonging—materially and symbolically. By closely following certain artifacts like migrant identification documents, the "electronic fence," and drones, I retrace the networks of imperial formations. This is not an effort to follow the export model of empire—how artifacts produced by empire are shipped to faraway destinations and how they shape those spaces. Instead, what I try to show is how these artifacts and others return to shape empire. So, it is in the demarcation of borders between the foreign and the domestic that we find some of the core processes making and unmaking imperial formations and their subjects. What kinds of exceptions are made in the production of boundaries—who is a citizen/noncitizen, an enemy/ally? Who is included in and who is excluded from these boundaries? How are these boundaries produced? What are the infrastructures of imperial formations and how do they coproduce each other?

Let's take, for example, the development of the electronic fence during the 1970s—something I tackle in an article in *American Quarterly* [2]—an antecedent to contemporary calls for smart walls. The electronic fence was developed initially to help the U.S. military forces control border-crossing movements in the northern border of South Vietnam during the Vietnam War. The research and development of this surveillance system relied, in part, on the material infrastructure of U.S. settler colonialism when testing was done at Fort Huachuca, a former late-19th-century outpost in the violent "settlement" of the U.S. southwestern frontier. Known as the McNamara Wall, it was then shipped to South Vietnam, where it was plagued by failures. The technology then returned to the U.S. Southwest when the Border Patrol worked with the Department of Defense to use it for border-enforcement operations and the racialized control of Mexican migration. By

following the electronic fence, we slowly begin to see how U.S. imperial formations have sought to police the boundaries of inclusion and exclusion through the management of enemies to control (Native Americans, the Vietcong, Mexicans). This is not to say that the contexts for construing these populations as enemies were the same, but we *can* see the critical role of defining enmity in the construction of the U.S. nation.

Electronic battlefield diagram ca. 1971 (source: [8]).

Borders are always in the process of being made; they are becoming. They are not naturally occurring phenomena but rather porous and contingent constructs. Even when so-called natural boundaries like rivers are designated as (geopolitical) borders, they require such designation as well as a constant and continuous production. Even as the foreign is demarcated, it becomes entangled with the domestic in unexpected ways.

Borders are always in the process of being made; they are becoming.

SA: The title of this forum is After Veillance, a designation that is trying to get at all the ways populations are surveilled, from the visual to the biometric. What does your story about the integration of informatics into the artifacts of border crossing tell us about the multiple kinds of monitoring that take place when borders are crossed, and in being crossed, are made?

ICL: First, that not all bodies are surveilled the same. On this point, my work is in conversation with a vast and growing literature that includes critical work by Cass Adair, Ruha Benjamin, Simone Browne, and Jackie Wang. It is not enough to say that we are all subject to biometric surveillance at international ports of entry. In the words of the Precarity Lab, "We were born under surveillance, but not all of us are equally seen" [3]. Second, that we should think historically by asking how today's conditions of possibility were produced. While informatics might seem like a new domain with unique practices, many of these are irremediably entangled with older processes. Many biometric identification systems in the U.S. today build on past techniques that include documentation, standardization, photography, encryption, and computing. I don't want to suggest that past and present are all the same, or that there aren't any new and unique techniques. But we must beware of buying into discourses of technological promise and of taking as true what they sell. To examine our contemporary moment, we must find a distance from it—not merely over time but estranging ourselves from it. As Giorgio Agamben says, we hold a contemporary relationship with that which we can perceive not only in light but through the shadows it casts.

Diagram of the Border Patrol's intrusion-detection system ca. 1977 (source: [9]).

SA: How do the forms of monitoring border crossers, categorizing them, and making decisions about their veracity through the networked data technologies you document produce a particular idea of human identity? What might be some of the consequences or futures of this notion of a subject, and what kinds of politics might accompany such an idea of identity?

ICL: What you allude to in your question is bound to debates about the development of what Neda Atanasoski and Kalindi Vora call *technoliberalism*. In their book *Surrogate Humanity* [4], they argue that technoliberalism is a Western political formation in racial capitalism where humanity is taken as an aspirational figuration actualized through technological transformations. Technoliberalism attempts to obscure "the uneven racial and gendered relations of labor, power, and social relations" in capitalist production. Liberation from the drudgery of so-called modern life is always grounded by the externalization of oppression. Universal liberation—never quite universal but provincial and provincializing—is hemmed to an other.

The U.S. nation is propped up through discourses and infrastructures of enmity. Security in the case of border and immigration enforcement has been associated to parsing between

loyal citizens and disloyal noncitizens, identifying documented and undocumented subjects—turning unknown people and their surreptitious behavior into known and scrutable data. The personal histories of migrants and their contexts are dispensed with in favor of an attention to standardized categories, supposedly objective criteria, and perceptible data inputs. The safe and protected, or the liberated subject is produced through the nonviolent and violent exclusion of the other. I'm thinking here also of the fabrication of migrant death on the borderlands, as work by Jason De León [5] and by Miguel Díaz-Barriga and Margaret E. Dorsey [6] shows. Security somewhere is insecurity somewhere else. Who and what stands before the law does so as soon as a limit is demarcated and its excess is expulsed. This is the "humanity" that U.S. border and immigration enforcement technologies seek to produce.

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POST COMMENT

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Borders Are Obsolete Part II

Reflections on Central American Caravans and Mediterranean Crossings

Jennifer Mogannam and Leslie Quintanilla

> Delen el dinero directamente. Ellos saben lo que necesitan hacer.
>
> —Salvadoran Civil War refugee

When we were part of the organizing for Break Down Borders 5K,[1] an annual event beginning in 2014 that drew connections between Palestine and the United States at the San Diego///Tijuana[2] border, we were able to create a deep and intimate network of relations that crossed community, geographic, and border contexts. Far from being just a 5K run/walk, this event also functioned as an act of protest or resistance to the everyday realities of border, colonial, carceral, and other structural violences. One of our goals as organizers was to create an accompanying program that would foster exchange and connection between each of the participants and highlight each of their various struggles. One of the most inspirational and concrete examples of what a world without borders could look like was the moment when recently resettled Syrian refugees and Yaqui political organizers were able to talk to each other, learn from each other, and invite each other to their respective struggles with the help of our translation—Arabic to English to Spanish and back again. A Yaqui leader spoke about water struggles and political organizing on Yaqui territories in the border region of Mexicali-Calexico,[3] while the Syrian elders shared their stories of coming from farming, land-based communities. Land and water struggles from both geographies connected them, and us, across language.

As part of the run, we invited both communities to participate and speak. While also being able to engage the broader community present at the 5K, more importantly, they found each other through the stories they were telling. Without knowing much about each other's contexts aside from what was being shared in the moment, they began attempting to communicate in order to express their solidarities and share the resonances of the lived experiences that each person was describing. In this organic moment, organizers facilitated a trilingual back-and-forth of grassroots, experiential knowledge and a display of the ways in which transnational solidarities and joint struggles can surface in their own ways at any given moment. All that was needed were the conditions to meet—the invitation to be present with us at the fifth annual Break Down Borders 5K—but the otherwise geographically distant yet politically connected bonds were already present. These bonds continue to grow, develop, and evolve in the undercommons.[4]

As activist descendants of immigrants from the Palestinian and Central American diasporas, we have organized in joint struggle to bring together global analyses of border regimes while directly serving the most vulnerable and newly displaced communities where we have resided—specifically, on Kumeyaay territories, or the San Diego///Tijuana border region. This site has one of the largest resettled refugee populations in the United States[5] and has enabled us to create new organizations, spaces, and coalitions for grassroots organizing. In this work, we are informed by our past organizing experiences in Lebanon, Jordan, Syria, Italy, and throughout California. As we grow together in our organizing praxis, we find ourselves building a feminist praxis that Angela Y. Davis has theorized when she asks us to imagine "a woman of color formation [that] might decide to work around immigration issues. This political commitment is not based on the specific histories of racialized communities or its constituent members, but rather constructs an agenda agreed upon by all who are a part of it. In my opinion, the most exciting potential of women of color formations resides in the possibility of politicizing this identity—basing the identity on politics rather than the politics on identity."[6] We are learning from each other's geographic and transhistorical specificities of border regimes and displacement, while organizing to serve new refugee communities as they arrive in the United States and Europe today.

Through our positionalities as children of displaced communities, committed grassroots organizers, and educators in the academic-industrial complex, we find our specific vantage points in joint-struggle organizing as important entryways into more disciplined and accountable methodologies, analyses, and critiques of solidarity organizing in border contexts and regions. While we do not want to perpetuate the gatekeeping of on-the-ground work with refugees who need immediate services and relief, we do, however, want to speak to various dynamics that often result in more damage than good. No organizer, activist, or academic is immune to perpetuating violent dynamics and unethical relations with migrants and refugees who are crossing borders every day—including ourselves, as we write our reflections based on our different histories of organizing on the ground. We view "on-the-ground" work as being involved, potentially in an organization or as an individual, in collective work; going to meetings; and actively facilitating logistics, communication, and service provisions that prioritize vulnerable communities with various needs over a long period of time. While there are occasional interruptions to the continuity of our engagements, we always strive to remain committed to the work and to centering vulnerable communities and their known/expressed needs.

We recognize that institutions, bureaucracies, funding streams, and different political strategies that intend on helping migrants in transit and refugees in spatial border limbos all have their possibilities and faults. In the cracks of state infrastructures that have always failed our refugee communities, there lie other possibilities to create alternative structures that center the autonomy and dignity of migrant goals, desires, and needs. To start building these alternatives, we must see that the act of crossing borders, whether environmentally, economically, or politically motivated, is a rebellious declaration that is grounded in the desire for dignified life. Following the Zapatistas' call to organize and create a world in "rebellious dignity," *la dignidad rebelde*,[7] we therefore commit to co-conspire in building the foundations and conditions that allow for all those who dream of a new world to enact it. As the Zapatistas continue to inspire us through their Seven Principles[8] and newly expanded territories and *caracoles*,[9] we recognize that the abolition of border industrial complexes is possible through working in autonomous relations, places, and spaces in joint struggle. Thus, we reflect on our coming together as comrades from our differing geopolitical, diasporic contexts and commit to each other in joint struggle to create the next world where local, communal, and land-based systems of care and exchange facilitate connection among all of us—beyond border regimes.

In the context of joint-struggle solidarity organizing at the border(s), there will always be contradictions between the work that we do and the politics that we believe in because we must engage oppressive structures even as we fight to dismantle them (currency, using passports to cross borders, etc.). We're not immune to reproducing unjust power dynamics, but there are also ways to navigate them with more discipline, principle, and accountability to on-the-ground communities. Additionally, simply acknowledging the engagement of these contradictions as problematic is not enough of a reason to decisively not act. Not acting is not an option. As stated by Desmond Tutu, "If you are neutral in situations of injustice, you have chosen the side of the oppressor."[10] Inaction is a choice; it is neither a performance of "neutrality" nor an "apolitical" stance. It is rather complacency with and reinforcement of the system that oppresses. Therefore, we urge our readers to reflect on their own inaction, as well as their actions, and ask, "What are you doing to respect and valorize the desires and goals of people who are crossing borders right now?"

In this piece, we revisit moments that elucidate power dynamics that hinder the possibilities for refugee autonomy and rebellious dignity—namely, the savior complex and parachute activism—where racialized technologies of displacement dialogically create, and are created by, borders and refugee encampments. In addition, we also problematize humanitarian aid service work that lacks critical reflexive praxis. We do this by unpacking our respective experiences of organizing through the Palestinian Youth Movement that serves Syrian refugees in San Diego and Greece, and the San Diego Migrant and Refugee Solidarity Coalition that served as a facilitative infrastructure to support the Central American caravans of 2018–19. We share our individual analyses without representing the collectives and their analyses—an important distinction when we are part of organizations yet are not writing this article on behalf of them. Our reflexive praxis, and thinking through what we have learned and continue to learn as organizers, allows us to describe, in what follows, specific methods for combating hierarchical organizing tendencies as we move toward a practice that helps amplify migrant and refugee autonomy and rebellious dignity—a politics of accompaniment.[11] We move toward forming a transcommunity and transnational borderland praxis of *acompañar obedeciendo*,[12] where we can accompany and serve autonomous refugee and migrant journeys based on their guidelines, desires, and

agencies.

A Method of Reflexivity

This piece is our reflection of our own movement work. We also include analyses, testimonies, and experiential knowledges based on our commitment and accountability to vulnerable populations, including the analyses of other organizers who have put themselves in danger while doing this work. However, we also refuse to expose compromising details in the sections that follow because we will not jeopardize refugee and organizer livelihood, consent, or possibilities of survival by making visible some dangerous work of cross-border organizing for our own academic gain. We ground our accountability in those places and people. Making these negotiations transparent is part of what Richa Nagar calls "radical vulnerability." She states, "The responsibility and labor of telling stories involves a series of delicate negotiations through which one must underscore the impossibility of ever accessing 'lived experiences' and where one's engagements with who is speaking, who is referenced, and who is listening can become legible only when contextualized within the multiple and shifting social relations in which they are embedded (Shank and Nagar 2013, 106). Only then can one hope to represent structures of violence without reducing them to accessible narratives that reenact the very violence that 'we' seek to confront."[13] In this vein, we also attempt to access our own fractured memories, traumas, lived experiences, and political formations to form a joint analysis across borders, regions, and diasporas. We do this by analyzing memories of moments, interviews, and dynamics among solidarity organizers and refugees, and we name these as "archives" throughout this piece. Taking inspiration from Fatima El-Tayeb's work on the open activist archive,[14] we hope to create a multitude of collective archives that reflect a seedbed of analyses from "below and to the left."[15]

This piece can be interpreted as an interdisciplinary autoethnography grounded in community and grassroots organizing, but it can also be called our manifesto, our journal, our thoughts, our traumas, our ongoing questions, or our reflections. We hope that writing—aimed at both academic and nonacademic audiences—can support movement organizing with reflection and action processes. We hope our analysis engages other organizers who may have similar reflections or who may want to expand and add on to this piece. Simultaneously, we hope it helps other academics who are committed to on-the-ground politics and movement organizing to work through the tensions and power dynamics between communities in struggle and the academic-industrial complex. We engage this knowing that there are others in the academy, including in this special issue, who foster a similar approach in their organizing and academic work, and we hope to contribute to broadening this kind of disciplined and accountable methodology.[16] We aim to work within slow, enduring, sustainable, and collective movement infrastructures that produce transformative change as opposed to declarative and performative radicalisms that are not necessarily rooted in this work. We're in it for the long haul.

If people continue to write about or organize around border movements only with people who speak their same language (e.g., people who understand the academic or activist lingo), then there will be missed connections with those who can contribute their own seeds to the struggle. It is a praxis of vulnerability, openness, and accountability that matters most in building larger bases of collective organizing. This praxis requires an engagement with communities on the ground and linking them with one another if they are not doing so already—*construir y no destruir, to build and not destroy, as the Zapatistas teach us to do*. As diasporic organizers from different contexts, our vantage points allow us to be in community together, organize together, and bring our families, networks, and homelands into conversation with one another—not just in an abstract sense but physically, in a living room, community center, or park.

Transnational liberation and transcommunity organizing are not abstract or imaginative elsewheres that have yet to exist—they are already happening now and have been happening for a long time. Our own connections to each other require work, risk, and the vulnerability to try, fail, and try again. Part of that work entails building larger connections outside of ourselves, with refugee comrades who have already shared, organized, and built networks and collectives of resistance across generations. We hope that our reflections in this piece can help expand the possibilities for long-term, transnational organizing that is critically and committedly in support of refugee and migrant communities.

Institutionalized Aid: Jennifer's Organizational Practices Archive

The Palestinian Youth Movement (PYM), an organization I have been a part of and held various leadership positions in for over a decade, created a project to combat refugee relief or service work, voluntourism, and damage-centered solidarity that perpetuated racist and orientalist tropes.[17] The notion of damage-centered solidarity draws from Eve Tuck's "Suspending Damage: A Letter to Communities" and Harsha Walia's "grassroots theory" to frame the ways in which research and solidarity encounters could do better at centering those more affected and vulnerable.[18] Additionally, this concept is imagined in response to the experience of receiving Palestine solidarity from peoples who center themselves in the act, further diminishing the voices and experiences of those with whom they claim to be in solidarity. PYM developed a program called "SWANAconnect Dignity, Survival, and Community for Refugees: A Volunteer Service Project in Greece"[19] after a member ended up volunteering in Greece in 2016 when many new arrivals were making their way to the islands. This member's experience gave them a lot to think about in terms of the importance and necessity of the work, as well as a more critical perspective about how this work was being done and who was doing it. This moment was riddled with Western individuals, travel bloggers, and others who decided, without any background knowledge or language skills, to go volunteer on the Greek islands such as Lesvos, where refugees were arriving and being hosted in camps for two or more weeks at a time. The member began to reflect on the need to shift the ways in which service and solidarity existed in the current organized and unorganized emergency response and relief networks in Greece. Through these observations and through their connections with refugees, coupled with praxis-based critique from their own organizing experiences, this member spearheaded the establishment of the SWANAconnect program through PYM and with other community members from the SWANA (Southwest Asia and North Africa) region who had also been to Greece. We described the project, in part, as follows:

> PYM has recruited its own members as well as other members of the South-West Asian and North African Community in the U.S. to offer translation and interpretation services to our partner organizations in Athens and in the Greek islands of Lesvos and Chios. Our volunteers primarily work as translators and cultural interlocutors between the refugees and lawyers, humanitarian aid workers and the Greek authorities. The particular role our volunteers have assumed is critical for refugees who are survivors of the violence of war, siege, starvation, displacement and the precarious position of being amidst a global refugee crisis that has resulted in 59 million displaced people worldwide. Our volunteers offer linguistically accessible, culturally competent, relevant and sensitive services for Syrian, Iraqi, Palestinian, Kurdish, Egyptian, Moroccan and other refugees from the SWANA Region in Athens, Chios, and Lesvos.[20]

The project intentionally offers a different framing for volunteers entering the Greek service space and ensures that each volunteer is prepared for service by developing a set of principles and mandatory pretravel trainings. PYM developed four primary frameworks for this work: (1) the refugee dimension; (2) the transnational dimension; (3) the Arab/SWANA regional dimension; and (4) the rights-based approach, international law, and the international nonprofit industrial complex.[21] Each of these frameworks has had a long trajectory of collective development in PYM in various ways. Both the refugee and transnational dimensions of PYM were inscribed in its founding as an organization that emerged as an attempt to (re)build a preexisting transnational struggle. PYM sought to center the refugee right of return, as the vast majority of the Palestinian population consists of refugees, through a new generation with a unique set of challenges. The Arab regional dimension was taken up at the dawn of the 2011 Arab Uprisings in order to account for the ways both Palestinian-ness and Zionism intersect with larger regional struggles and to grapple with the urgencies of other contexts that are connected to but not necessarily centered on the Palestinian case. Lastly, the rights-based approach in PYM was, from very early on in the organization's formation, intentionally articulated as a tool to challenge the notion of the achievement of rights, specifically from rights-granting institutions like the United Nations or the state itself, as the path to liberation in the post-Oslo political vacuum. This framework reflects the notion that liberation cannot be granted by other powers, but rather must be determined and assumed through the struggles of those unjustly oppressed. In short, these frameworks mobilize Palestinian

transnational subjectivities and politics to attend to very real and material needs, without the false notion that this kind of labor and these institutions can save vulnerable populations.

The longevity of Palestinian refugee subjectivity and the different ways we have been aided through the decades have provided experiential frameworks for how to better serve refugees based on our own intergenerational, lived experiences. As a transnational movement, the PYM centers ontological and epistemological pluralities on a transnational scale, attending to the various and drastically different subjectivities that our global communities face as generations removed from our homeland and in different contexts of exile. Attending to these ontological and epistemological pluralities transnationally shapes a more cohesive narrative and understanding of struggle, beyond the predominantly US-based experiential knowledges of our members. Through our regional lens, developed particularly after the emergence of the 2011 Arab Uprisings, a moment that has since significantly increased the need for refugee services, we highlight the interconnectedness of various nations within the region and their co-constitutive relationships to both oppression and liberation. Lastly, we have had a long-standing critique of the ways aid work reproduces pathologizing victim narratives, thrives off of the optics of pain, and feeds an entire industry that serves more as a Band-Aid.[22] This kind of aid work at times does not even attend to the most pressing wounds and does not produce sustainable change. Through the framework and facilitation of *collective process* as our organizational methodology for formulating and dialectically developing our principles and politics, we utilize each of these internally developed frameworks to support more accountable and disciplined service work. We also use them as an overall framework to understand how we can participate in or create initiatives that speak to the very material needs of our communities without perpetuating harm or deviating from our political aspirations of liberation. By engaging in much-needed service work in a way that is more politicized and aware, this method makes for more meaningful experiences and more disciplined and refugee-centered solidarity, as opposed to damage-centered solidarity.

Many Western organizations and individuals in Greece that host volunteers and bring them to do relief work do not have culturally sensitive or refugee-centered practices. In my experiences and the experiences of those I have spoken to, volunteers are often European women coming with European NGOs. These European women, due to incompetence or an overt disregard for power differences, arrive in Greece with no "cultural competency" or any other kind of training around differences in cultural practices, including differing racial, gendered, and classed dynamics.[23] Instead, they are there in hopes of fulfilling voluntourist[24] desires—desires that can produce new sets of sexualized relations between refugee men and European women specifically that are established through liberal European notions of sexuality. These cultural disconnects and overt westernizing practices have the power to produce long-term effects by (re)producing feelings of abandonment and loss of loved ones, adding new dimensions of trauma for refugee communities.

We see Eurocentric and white supremacist logics of saviorism and conquest playing out in this racialized and classed dynamic not only in an individual sense but also in a way that serves the institutional power of EU (and US/Canadian) NGOs, funding, and relief circuits. Humanitarian missions operate with a mindset of superiority,[25] and one of these "civilizing" tactics involves the use of sexual relations to impose the concept of sexual freedom on refugees. These dynamics demonstrate how normalized racism is to liberal multiculturalism.[26] As Neda Atanasoski notes, in seeing "multiculturalism as a global ideal through which the sanctity of human diversity is declared, humanitarian projects have subsumed and supplanted the civilizing and humanizing aspirations of European racial imperialism."[27] As such, European racial imperialism (by way of gendered and sexual cultural practices) gets reproduced through the ways in which liberal notions of sexuality intersect with orientalist logics as a form of civilizing.

The presence of Zionist Israeli organizations in Greece adds another layer of political complexity. Most notably, IsraAID,[28] a state-sponsored organization that engages in humanitarian relief activities globally, and particularly for Syrian refugees and others from the region in their Greek headquarters where they focus primarily on sending Arabic-speaking relief teams,[29] serves to engineer a particular narrative that distances Zionism from its own refugee-producing practices. For example, consider their tweet on October 1, 2020, in which they shared an article titled "IsraAid—fixing the world, one disaster at a time" while highlighting a quote from a Syrian applauding the work of IsraAID.[30] This humanitarian relief work helps create a Zionist, Israeli settler narrative of purity and saviorism, including, and especially, for those from the very region impacted by their colonial regime. It is one of several attempts by the Zionist state to absolve themselves of their own relationship to the production of refugees; with over seventy-two years of continued displacement, Palestinian refugees are the largest and longest-lasting refugee population in the world. These practices reinforce liberal multicultural principles of aid and humanitarianism in order to further normalize Zionism among Arab and Muslim populations and serve their public image, while Israel continues to cause humanitarian crises and bar aid from being delivered to those they harm. This is an excellent example of some of the most damaging long-term impacts of aid and humanitarianism. It exists as a facade or cover-up for other oppressions. Predictably, this Zionist strategy has had a mixed reception. On the one hand, some refugees refuse to work with Zionist aid organizations once they become aware of their connections to Zionism, while other refugees are grateful for aid no matter the source. This aid strategy and maximizing on its positive reception reinforces the narrative that Israel has no issues with other nationalities in the region and that it's only the Palestinians and other "terrorist" Arabs who are unable to accept the Zionist presence.

Syrian Refugees at US///Mexico Border(s): Jennifer's Community Engagement Archives

The PYM chapter in San Diego got word that Syrian refugees would begin to be resettled in greater numbers during the summer of 2016, with an influx of about two thousand individuals (several hundred families) between May and September of that year. There would be another large wave by the end of the year. We decided to begin grassroots planning efforts to support this new influx in early 2016 and began reaching out to other Arab youth who would be interested in supporting this work. We specifically contacted those who had language skills, cultural groundings, and politically thoughtful orientations to refugee life and potential traumas refugees faced. We began organizing under the name Arab Youth Collective (AYC), in an effort to grow a collective of Arab youth in San Diego and build stronger relationships with existing Syrian immigrant communities and aid networks. Aside from the four main nonprofit resettlement agencies in San Diego—the International Rescue Committee, Catholic Charities, Alliance for African Assistance, and Jewish Family Service—we encountered a few organizations comprising Syrian diasporic communities of working/middle- to upper-class backgrounds. Among them was the Syrian American Council (SAC), a wing of the Syrian National Council (SNC), which is a politically moderate and Western-pandering opposition organization. The other organization we met was the Syrian Community Network (SCN). This organization was made up of Syrians mostly from middle/upper- to upper-class backgrounds residing in greater San Diego County.

While SAC mobilized all approaches to opposing the Syrian regime, even lobbying for US intervention in Syria—an approach of desperation and defeat that faced significant criticism from other Arab organizations, including the AYC—the SNC was a self-proclaimed "apolitical" organization that just wanted to help poor victims in need. From the politics of apolitics to the urgency of countering regime repression by any means, these Syrian community responses reflected various currents in the global political landscape of the Syrian uprising. We ended up in community meetings with both organizations to make sure that we could centralize our efforts in order to not duplicate work and to assess what the resettlement agencies were not covering. One of the challenges we faced was having limited start-up funds for housing, furnishing, and rent until refugees could get on state-funded subsidies because of extensive paperwork processing times and increasingly reduced resettlement budgets from the agencies. In one meeting led by SAC, we discussed community furniture donations for refugee families. One of the SAC members shared an experience in which a Syrian refugee family refused an old couch and said it had cockroaches in it. The SAC member proceeded to say that he saw the couch and it wasn't that bad; he complained that the refugees were being picky and exclaimed that they should just take whatever they can get. The AYC members in attendance felt the need to intervene in this discussion. The SAC was framing the conversation around the "gift" of charity to people of lesser value, as opposed to supporting our equal Syrian brothers and sisters whose journeys were more challenging in this particular moment. The charity paradigm reflects an attitude of superiority that is patronizing toward refugees and undermines their agency to determine their path in refuge and in creating a new life of dignity.[31] This dismissal of the refugee right to dignity reflects the common dynamics and attitudes of global relief and humanitarian efforts. Even in subtle ways, the belief that the person serving is of a higher status than those being served manifests materially and prohibits genuine relationship and trust building for the creation of community. The creation of community empowerment and community sustainability was a central goal of the Arab Youth Collective, and we quickly realized that this was not a shared framework for SAC or SCN. Their goal was to do charity because they felt it was the right thing to do for people who came from the same place as them; however, their "pity-politics" approach only reinforced the social hierarchy that

produced the economic and political challenges in Syria that resulted in this moment of refuge and their immigration timelines to the United States.

In another conversation with these same organizations, a discussion ensued about the terminology that we use to define refugees. A SAC member proposed that using the term *immigrant* was a nicer way of describing them than *refugee*, and that was assumed to be a universally agreed-upon truth. However, we refused to let this assumption go unchallenged. As youth coming from Palestinian refugee communities, we refused to mislabel this condition or undermine the significance of being a refugee. We explained that the term *refugee* was a more politicized term that invoked the Syrian regime's responsibility for this condition, and doing so could also raise consciousness among the community to sustain their ties to their homeland. The fact that *refugee* is a more politicized term was part of SAC's reasoning against its use, even though they were intent on implicating the Syrian regime in displacement, destruction, and more. As this back-and-forth about terminology developed, there was also an undertone of anti-Palestinian sentiment. Syrians have come to understand refugeehood through the Palestinian experience, wherein Palestinians in Syria mostly live in refugee camps, are mostly poor, and are often scapegoated as thugs and troublemakers. Additionally, because of the longevity of Palestinian refugeehood, there might have also been a correlation of the term *refugee* with the notion of seemingly never being able to return to one's homeland. These ideas reflect a sense of inter-Arab racism and the desire to depoliticize the Syrian refugee condition. The rejection of the label of *refugee*—as a status to be avoided, let alone self-proclaimed—reinforces an assumed set of social hierarchies that mirror those powers that produce refugee subjectivity in the first place. As such, both the disavowal of refugee agency and the rejection of the term *refugee* altogether signify a framework that counteracts the notion of refugee dignity. This framework assumes that the term *refugee* negates any form of self-determination, choice, or dignity, which contradicts the very essence of refugeehood as a politicized subjectivity.

While the AYC continued to work with the Syrian community, and our relations with SAC and SCN continued to develop, we realized that there were clear differences in the ways each group imagined collaboration. Much of the coalitional infrastructure was built to serve the goals of the respective organizations. As such, being the least resourced organization, we were the least valued, although we continued our attempt to collaborate, or at least coordinate, in order to avoid duplicating work. However, our guiding principles, values, and orientation to the work were fundamentally different, especially our framework of building community as opposed to simply doing charity. Our community-building orientation was simultaneously rejected and posed as a threat to SAC's and SCN's organizational orientations. Because building a sustainable model around communities most vulnerable was the most dignified approach, our model began to direct refugees our way. Refugees would share stories with us about how they felt patronized and then abandoned by the other organizations.

Many of the refugees did not know which organizations were offering them resettlement services. Some of them were inevitably being supported by Jewish Family Service, a Zionist organization that is one of the four resettlement agencies that refugees were received by in San Diego. Many were dismayed to find out they were being supported by a Zionist organization. Additionally, as our work and relationships to the Syrian organizations unraveled, we discovered that the Syrian Community Network had officially partnered with and received funding from a local organization called the Leichtag Foundation, based in Encinitas, California, to assist in their refugee support. One of the Leichtag Foundation's explicit missions, easily visible on their website, is "building connections between San Diego and Israel through engagement, relationship-building, and interest alignment."[32] In essence, their work focuses on engaging larger communities in Israel, garnering support for the state, and defending Israel on a political level. Upon discovering this, we entered a series of conversations with the SCN about the disservice of normalizing relations between Zionist institutions and newly arrived Syrian refugees, even, and especially, through the act of service. The political implications are exceedingly problematic, as they are in Greece, where Zionist organizations attempt to purify their reputations around refugees by reproducing savior narratives for other Arab refugees, all while concealing their creation of the longest and largest refugee populations in the world—one that continues to experience intergenerational oppression. The normalization of relations between Zionists and non-Palestinian Arabs also reinforces anti-Palestinian sentiments, strengthening the argument that Zionists can live side by side with other Arabs and that it's the Palestinians who are the problem. Furthermore, normalization absolves Zionist regional imperialism from any responsibility for socioeconomic and geopolitical dynamics that helped produce these regional crises in the first place. Additionally, SCN's lack of transparency with the refugees they were serving about this source of funding—for example, in defending their decision to take Zionist funds by saying, "We're taking support from wherever we can get it"—further revokes refugees of the agency to refuse service from sources that contradict their principles and existence—in other words, their ability to live in "rebellious dignity." In the end, SCN took the position of claiming to be apolitical and did not engage our framing that this relationship, in and of itself, *is* political, even if the grounds for entering into this relationship were not explicitly political. It was at this moment—when we realized that the deadlock around the normalization of Zionism would remain—that we, the AYC, severed our relationship with SCN. We would communicate when necessary for coordination but rejected further collaborative engagement in community-based work.

This severed relationship among differently positioned community-based refugee service organizations is not unique to the Palestinian or Syrian contexts. What will become clearer in the following sections is that similar power dynamics and tensions emerge among and between refugee service infrastructures that are intended to respond to moments of crises, such as the Central American caravans and their exodus to the US-Mexico border. While humanitarian aid infrastructures, reproducing savior and charity complexes, might have good intentions, these experiences reflect the potentially damaging impacts that produce unaccountable solidarities across community contexts.

Logistics of Crossing: Central American Caravans at the US///Mexico Border; Leslie's Legal Archive

On November 25, 2018, Border Patrol officers at the San Diego///Tijuana border shot tear gas canisters at Central Americans in Tijuana. Maria Meza and her two young children fled from tear gas and a journalist's snapshot of this moment went viral.[33] A triad of violence, or what I call the *border-prison-military industrial complex*, targeted Central Americans from the "caravana" that day as militarized border agents continuously threw tear gas from one side of the border to the other and helicopters roamed above the steel fences that divide Kumeyaay land onto the "US" side and "Mexico" side. For those migrants who dared confront the hypermasculine show of US hegemonic order at the border(s), they risked the possibility of capture and imprisonment. In this moment, hundreds of solidarity activists, organizations, and individuals stood on the US side of the border in critical witness to this triad of violence. As part of the San Diego Migrant and Refugee Solidarity Coalition, we had spent months building an infrastructure of support for the multiple arriving caravans from Central America while both the Mexican and US nation-states continued to abandon them. The US state in particular only created structures of disposability, incarceration, and deportation. As one of the members of this coalition involved in on-the-ground efforts to combat continued repression, I highlight a selection (by no means exhaustive) of the principled politics, mechanics, and relations of support within an autonomous infrastructure created by San Diego///Tijuana-based solidarity activists and organizations. Below, I interrogate my own involvement within a larger effort to support the April 2018 caravan in Tijuana in order to reflect, archive, and explore the multiple positionalities, power dynamics, and relationalities at play within solidarity work at the San Diego///Tijuana border.

The caravan arrived in Tijuana on April 29, 2018, and I put in work wherever my hands were needed. Tijuana's Enclave Caracol, a place where workshops, events, and organizations such as Food Not Bombs exist, was transformed into a *rascuache*[34] service space for newly arrived migrants. It became one of the centers of makeshift pro bono legal counsel, with lawyers, medical checkups by volunteer doctors and nurses, and an open closet for piles of donated clothes and shoes. Every day, handfuls of these volunteers circulated through the space to try to do what they could, from rearranging furniture; to making a medical corner, food corner, and sleeping corner; to cooking and offering legal counsel; to providing art and music for the caravan members.

The situation was different every day, and there was never a way of knowing what type of labor would be needed at Enclave Caracol. Through friends and text message threads, there was a recurring call for legal aid—so I took my laptop, printer, paper, and folders *just in case*, without knowing what role I would take on. "Just in case" was always the go-to motto for the ever-changing, day-to-day situation at the border industrial complex —a bureaucratic nightmare and site of military hypermasculinity.[35] At Enclave, I started to "intake" families as a helper to Al Otro Lado's legal team, where my role was to type parents' and children's birth certificate information into a form on my computer. I have no legal training, yet the need for specific services required us to step up and learn quickly.[36] This particular form stated their right as noncitizens under the due process

Refusing Control

London School of Economics and Political Science

Image: Leif Hinrichsen, Creative Commons

To address the continuing militarisation of migration control and ever increasing violence of the European border regime, an international network of organisers joined forces in an impressive decentralised campaign. With the European border agency Frontex as appropriate target and its aim explicitly abolitionist, Abolish Frontex sets out to coordinate and amplify existing efforts and campaigns, as well as serving as a point of entry for those who want to join the fight against border violence in their local contexts.

"The aim of Abolish Frontex is not to reform or improve Frontex, or to replace it with more of the same. Instead, we are targeting the policies and system that keeps Frontex in place. We work towards the dismantling of the border-industrial complex, and the building of a society where people are free to move and live."

-Abolish Frontex site

Within months, over a hundred organisations joined the campaign and numerous actions were organised under its banner. In the light of our project *Refusing Control*, in which we surface stories of organising, we asked Abolish Frontex to tell us more about this impressive campaign. In an inspiring session they shared with us what set off the campaign in the fall of 2020, why the campaign is rooted in an abolitionist perspective and what truly decentralised organising means. Their story included great tools to support organisers in finding meaningful ways to resist in their local context.

A network of organisers

The idea among organisers that more internationally coordinated responses to the horror of the EU border regime was needed, emerged at a time of an exceptional amount of border related catastrophes around the fall of 2020. There was the horrendous fire which destroyed Greece's largest refugee camp Moria and several tragedies of mass drownings in the Mediterranean. It was a period of a widely shared feeling of outrage, but also of a lot of powerlessness. Many were faced with the same burning question: what can we do?

At that moment, a broad network of people working on migration and border militarization felt that while many organising against these atrocities in their own way and place, there was an interlinking framing and coordination lacking. Something which would enable all these groups to unite in an internationally coordinated response, a way to put out shared key messages and core demands– so all these activists and organisers could target local, national and international institutions in a more cohesive and powerful manner. At the same time, there was a need to offer something to people who were not part of a group yet but really wanted to do something, a point of entry through which they could join the fight and organise their own actions.

Thus different groups and individuals started to discuss the possibility of coordinating together. They set out to create a campaign which could not only amplify the many activist efforts by linking different struggles and groups, but could also serve as a point of connection for anybody who wanted to organise in their own local setting.

Frontex and all that is wrong with the border regime

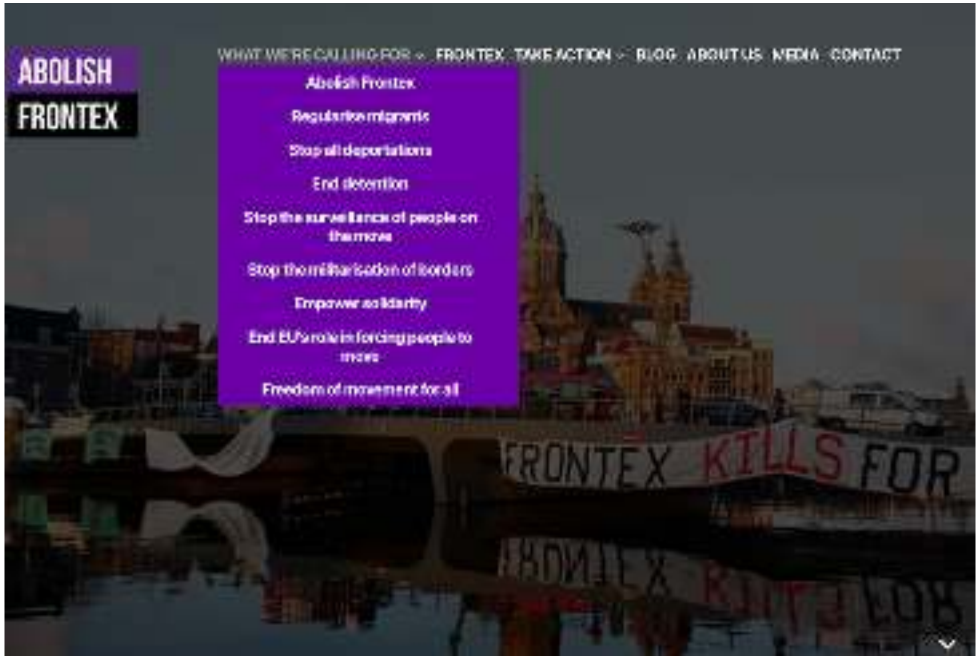
The European border agency Frontex was the obvious campaign target. Though relatively unknown, Frontex serves as the key actor in enforcing the war on people on the move, its operations riddled with human rights violations. Frontex is involved in deportations, violent push-backs, and many more issues which organisers have been working on since decades. Moreover, Frontex is the EU's pet project when it comes to border control and can rely upon an ever-growing budget and capacity. It will soon have an army of 10,000 border guards able to own and use firearms. In a grim way, this flagship agency epitomises everything that is wrong with Europe's border regime. Frontex is a highly suitable strategic target to unite around - and as its operations increase and remain largely unchecked, it was an urgent matter to shed light on this agency, to make it known so people could resist it.

Image: Rasande Tyskar, Creative Commons

The steps towards abolition

With the target clear, the next step was to create a political foundation of principles and demands that different groups could agree upon.

It was clear from the get go that even though the campaign would explicitly target Frontex, it would not be not a single-issue campaign nor would the aim be some kind of reform of this institution. For the organisers, the agency should not be understood as an incident or aberration, but as a representation of the systemic violence against people on the move and racialized communities in the context of a deeply colonial capitalist Europe. The aim should not be reform but the dismantling of the border regime and the system that produces it.
To set campaign goals for this overarching aim, one of the big inspirations was the 8 to Abolition campaign arising from the Black Lives Matter protests in the US. This campaign linked a clear analysis of the need for police abolition to an eight-point program showing the steps to get there. Inspired by this, the Abolish Frontex campaign formulated for nine demands and provides extensive background why these steps are necessary for dismantling the European border regime.



The nine demands of Abolish Frontex

Organising tools and lessons from Abolish Frontex

Shaping the political groundwork and concrete demands of the Abolish Frontex campaign was done in a participatory way, including all those who had expressed an interest to join. Of course, this took time and work: from a two-day strategising meeting to separate working groups and an extensive online survey to see if the different demands had enough support and gauge where there was clear consensus or whether concerns needed to be addressed.

Abolish Frontex points to one of the useful strategising tools which supported their process and helped them identifying points of intervention and they actively promote for others to use. It can support people who want to do something in their local context and be a good method for organisers to come up with their own actions. The below table shows how to brainstorm about different targets and ideas for actions.

The Point of Intervention	Identify the Point	Intervention Ideas
Point of Production [illegible]		
Point of Destruction [illegible]		
Point of Consumption [illegible] Point of Decision [illegible] Location of targeted decision-maker.		
Point of Assumption Challenging [illegible]	What is the assumption we're challenging?	

To clarify how to use this table, the example of the arms trade was used. Starting with the **Point of Production**, which would be arms factories, arms developers companies, research and development sites. In short, all the places where the production is happening or planned. The **Point of Destruction** is the site of destruction itself, which in the case of the arms trade could mean warzones or zones of conflict. In case of Frontex it would be detention centres, the camps and the places where push-backs happen – often at the borders themselves. **Points of Consumption** are the sites where weapons deals are made, such as arms fairs. The **Point of Decision** would be a national or international government department – for example a department responsible for arms exports and the decisions around these. The **Points of Assumption** are the arguments that are used to justify the system in place – in the case of arms export these arguments are jobs, national defence, security, the fight against terrorism and so on. At all these points, interventions can be thought of: from picket lines at arms fairs or factories, to influencing the narrative by exposing its contradictions.

Examples of Frontex Points of Intervention which surfaced in a workshop include:
- the border countries where Frontex' operations are ongoing (Spain, Italy, Greece, Malta, Croatia…); international deportation flights and airports
- EU institutions and national governments and departments responsible for migration
- Discourse of migration as a security threat and militarisation as a solution
- Companies selling border militarisation and surveillance equipment

A celebration of decentralised actions

The session ended with an incredible slideshow the plethora of actions carried out against the border regime (beyond the Abolish Frontex campaign). From blockades and picket lines targeting the arms factories which are involved in border militarization in the Netherlands, to banner drops in Poland, the much reported blocking of a deportation van in Scotland and horse manure dumped outsight Frontex office in the Canaries.

After having learned about all the impressive organizing the Abolish Frontex campaign pulled of, seeing so many different actions in so many different places organised against the destructive border regime, was a truly enticing end of a highly inspiring meeting.

Find out more about Abolish Frontex

abolishfrontex.org fr.abolishfrontex.org and it.abolishfrontex.org - including the 15 page "foundation" of the campaign.

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The First Step Is Finding Each Other

Timmy Châu

In August 2017, in response to escalated tensions on the Korean Peninsula inflamed by the Western media, President Trump made headlines, warning that any threats would be "met with fire, fury, and frankly power, the likes of which the world has never seen before."[1] It was in this context, with the US president threatening to massacre millions of everyday Korean people, that a constellation of organizers based throughout the so-called United States came together to assess and renew radical pathways to a world without US imperialism.[2]

Since I am the son of a survivor of the US-led war in Vietnam, my dinner table was a place where the traumas of war were both passed down and relived—stories recounting the sounds of B-52F bombers hovering overhead in the night or the smell of burnt foliage that lingered in the air of my mother's village after a napalm raid. I long struggled to connect these stories to my experience as a young community organizer in Chicago, politicized during the Ferguson uprising and working to challenge systems of policing and imprisonment within the US. Not long after college I started working with a collective of artists, activists, and organizers known as the Chicago Torture Justice Memorials, a radical consortium of movement builders fighting for reparations for the hundreds of Black and brown men and women tortured under former Chicago police commander Jon Burge. It was through this work I learned that many of the Chicago police officers responsible, including Jon Burge, were Vietnam War veterans, and the torture tactics they were using against poor Black and brown people across Chicago were developed and weaponized against Vietnamese people during their time as US soldiers in the war.

For me, learning about the brutal connections of violence linking the lives of Black and brown Chicagoans to the lives of Vietnamese people—the violence of US empire—was clarifying, and it pointed directly to why a broad-based anti-imperialist movement connecting local and international struggles within the heart of the US empire was needed. So, part of the charge of Dissenters, a youth-led anti-war organization initiated by myself and a group of my collaborators, was to strategize how we might fill that gap and lay the groundwork for a new generation of resistance positioned to challenge the violence of the US war machine. The struggles and experiences encompassed were diverse—some came out of the movement to abolish police and prisons, some from migrant and environmental justice efforts, and others fighting for a liberated Palestine. We all understood the US military as a critical intersection of oppression connecting our various zones of resistance. We also sought to rectify the liberal peace movement's failure to center the communities most impacted by US militarism by providing a space to offer support, training, and resources to the next generation of young rebels seeking to end war.

Throughout high school and college, I witnessed firsthand the way US military recruiters preyed on poor Black and brown communities. I struggled seeing many of my friends grapple with the choice to enlist in the military so they could pay for college and ensure a better future for themselves and their families. Their choice was not an uncommon one, and it is one of many reasons why we identified universities, including community colleges, as key sites of the US military-industrial complex—from its blood-soaked endowments to its military recruitment offices. Given our experiences organizing with young people, and that many of us were young people ourselves, we saw a specific role for a nationally networked organization with local chapters that would start by targeting militarism on college campuses, and in future phases would expand to regional and citywide demands. We understood campuses to be a strategic place to initiate youth anti-war organizing, because young campus organizers can leverage collective power over local institutions with direct ties to US militarism. Additionally, we sought to build a network of highly skilled young organizers that would toxify war in the collective consciousness and proactively respond to political crises sparked by US imperialism through strategic direct actions.

On January 2, 2020, we launched the organization at our inaugural Founders Training, bringing together twenty-five radical student organizers from around the country. Together we shared analysis, deepened skills, and forged new relationships, laying the groundwork for a growing constellation of anti-war resistance.

Our approach to leadership as organizers must be a collective one. From the radical art-makers and direct-action experts to the campaign researchers and movement healers, everyone has a role to play, and the roles are many. Since its launch, there are now Dissenters members plotting direct actions, training other young radicals, and implementing targeted campaigns at over twenty-five chapters across the United States.

War on All Fronts

US militarism encompasses the police, military, and ICE. Policing and the imprisonment of poor Black and brown folks within and outside US borders are a part of the same project of maintaining the US settler-colonial, white supremacist system. Beyond the direct exchange of tactics and munitions, these various arms of the state ultimately serve the same purpose—to preserve and protect the interests of the US political and corporate elite.

In addition to my work with Dissenters, I am co-Director of an organization called the Prison + Neighborhood Arts/Education Project (PNAP), which works to build inside/outside networks of mutual support and resistance between incarcerated and free-world activists, scholars, thinkers, and artists. At Stateville Correctional Center, a maximum-security men's prison in Joliet where we operate, many of the prison guards are former US military who, after receiving training and doing tours abroad, find work at the prison. There is a mural painted on the walls of the prison guard cafeteria depicting a guard dressed half in "Orange Crush" (the anti-riot prison guard outfit) and half in a US military uniform. For me, part of being an effective organizer starts with knowing with absolute clarity who are my allies and who are my oppressors. This mural, which I see every time I enter and exit the prison walls, is a reminder of who and what the prison stands for, illustrating the theoretical and material connection between the brutalizing labor of a prison guard in central Illinois and the armed military guard manning the gates of Guantanamo.

Containment has always been a modality of war—from the "strategic hamlets" of Vietnam to Japanese internment camps. Whether it's the War on Terror or War on Crime, the US state continually manufactures enemies to fill its prisons. The military- and prison-industrial complexes share the objectives of liquidating resistance and disappearing communities that are deemed as surplus. More than just a framework to be reapplied to the context of US war-making abroad, abolition pushes us to understand how the US military-industrial complex was made possible through African slavery and Indigenous genocide. It also allows us to understand how the US prison system and the war machine are two pillars of the regime of US empire.

Demilitarization and the Earth

The US military is the world's largest polluter. While this makes for a strong case that abolishing the military is our best shot at mitigating the catastrophic harms of climate change, it's not the full picture.

During the US colonial war in Vietnam, over 3.6 million hectares of forest and villages were doused in upward of 19.5 million gallons of toxic herbicide, with the aim of killing all vegetation to "expose the enemy." Roughly a decade earlier, American B-29s dropped over 866,914 gallons of napalm on the northern half of the Korean Peninsula, resulting in what would be described by some as a "wilderness of scorched earth."

In December 2021, a US Navy fuel storage facility started leaking gallons of toxic oil into the Red Hill aquifer, contaminating a critical source of drinking water for thousands of native Hawaiians. In response, Dissenters organizers mobilized as part of the O'ahu Water Protectors coalition to demand accountability as well as the shutdown of the fuel tanks. Following months of sustained collective action, the Pentagon announced on March 7, 2022, that the Red Hill fuel tanks would be shut down and decommissioned.

These moments remind us that the Earth and its sacred, life-sustaining ecosystems are always casualties in a world at war, and how struggles to resist US imperialism are deeply connected with ongoing dispossession of Indigenous land and resource extraction. Actualizing a demilitarized future

is a responsibility—one of many—we need to take on to repair our relationship to the earth.

Resisting the Endless War

The United States has been waging endless warfare and fueling a permanent war economy since its inception. Its tactics and targets have evolved over time, but its propensity for war is constant. An ever-increasing military budget means that its capacity for conventional warfare has only increased. That said, increasingly global flows of production and consumption have provided a strong incentive for the world's imperial powers, most notably the United States, to develop new strategies for securing their piece of the global economic pie. Tactics of warfare have been refined such that the total violence of war-making is strategically dispersed in a continuum of militarized micro-operations sold to the public through the framework of "security".

We are up against a decentralized, transnational architecture of war-making where dominant states increasingly rely on the facilitation of strategic arms deals and enlistment of private paramilitary contractors and non-state forces to secure political and economic interests. For example, since 2015, the US has sold roughly $10.7 billion worth of weapons to Saudi Arabia every year, directly fueling the horrific Saudi- and Emirati-led war in Yemen, in return for secure access to Saudi oil production and political support for the US imperial footprint in the Middle East.[3] It is an infrastructure tasked with violently policing the globally displaced and dispossessed to ensure the vitality of a global marketplace, forcibly maintained through continuous counterinsurgency operations and increasingly militarized borders. Technological advancements in communications and surveillance infrastructure have allowed imperial war machines to eradicate threats and quell resistance with precision. Adapting to the inherent instability of global capitalism has meant that hyper-militarized states have continually refined the art of crisis management, perfecting their ability to manufacture and exploit political and economic instability across the world in real time.

Within the US, public support for endless wars at home and abroad is maintained through a mass media controlled by political and corporate elites. Ideas and images posing any threat to the status quo are relentlessly policed. On top of the brutal repression faced in the streets, the liberal establishment weaponizes morality through the rhetoric of "nonviolence" to further defang resistance movements and circumscribe them to the realm of legality and electoral politics. Bipartisan support from politicians to increase funding for the police and the military, despite popular demands for defunding levied in 2020 by the largest protest movement in US history, reveals a political system more than willing to sacrifice lives on the altar of power and profit. We are taught from a young age that the US government is a democracy ruled by and for the people. The reality of our social conditions paints a vividly different picture—one where liberal democracy, rather than a source of freedom for the exploited masses, has simply refined the art of co-optation and improved its ability to ensure the masses are more freely exploited. The real progress, if any, to be found in liberal democratic regimes is in their ability to effectively redirect movements for social change into the calibrated bureaucracy of electoral politics, where transformative and radical demands for more life quickly become lukewarm reforms leaving the status quo untouched. Rather than acting as a mechanism for undoing war, the promise of democracy has been fundamental to making war possible.

As new weapons of war are added to the US lexicon of organized violence, old ones remain. The brutal histories of mass violence and exploitation at the hands of colonial empires stand as evidence that no weapon is off the table. Nothing is certain. What we know is that all empires fall. But this empire will not fall without a fight.

Starting Points

At first glance, the expansive network of institutions and industries waging war on our communities is overwhelming. Our oppressors are many and all around us.

On the flip side, it means we have plenty of targets on which to set our sights: a weapons manufacturing warehouse, a police fusion center, a campus military recruitment office, an ICE detention facility all become possible terrains to plan our next attack. If the instruments of war are

leveraged at both a local and global scale, so too must our strategies of resistance.

In October 2021, Dissenters organizers around the country mobilized for a week of direct actions to launch our #DivestFromDeath campaign, to force local institutions to divest from US companies profiting from war including Boeing, Lockheed Martin, Northrop Grumman, General Dynamics, and Raytheon.[4] Together, these US war profiteers are central to a global death-making industry fueling violence within and beyond our borders. Year after year they provide billions of dollars of weapons manufacturing to arm authoritarian regimes in the Philippines and Israel, and to local police departments across the US. In 2021, Dissenters based in Chicago launched a protracted struggle called the #BoeingArmsGenocide campaign to force the City to sever its ties with Boeing—including calling for an end to the millions of dollars in tax subsidies it provided the company to keep its headquarters there since 2001. After six months of campaigning, including initiating inquiries by the Office of the Inspector General into Boeing's city contract, Dissenters successfully blocked what would have been another $2 million check to Boeing for its final tax reimbursement from the city—a historic victory. I've often struggled with the idea of international solidarity so often discussed by activists in leftist movements—what does it look like in practice? How do we build internationalism from below in real, material ways? The #DivestFromDeath and #BoeingArmsGenocide campaigns are our response to these challenges, as well as what it means for us at Dissenters to be in solidarity with our comrades abroad, allowing our networks to take direct action against a shared enemy engineering war across the globe.

In addition, Dissenters organizers at different campuses are also challenging the local manifestations of US militarism by fighting to get police and military recruiters off their campuses. Working alongside such formations as the #CareNotCops and the #CopsOffCampus coalitions, members are fighting to dismantle the police forces responsible for violence and harassment against predominantly Black and brown students as well as the gentrifying role those forces play against the surrounding communities they occupy.

We know the US military will not be dismantled overnight. As our mobilizations grow, we see these fights as strategic opportunities to begin chipping away at a global system in a localized context, as well as a way to connect our battle at home to the ones abroad. We also recognize local campaigns as a critical way for young rebels to flex our muscles of direct action and build networks of affinity along the way.

The scars of war run deep. Healing will take time. But every scar is also a reminder of the less-told strategies of survival that we also carry with us. Makeshift creativity and clandestinity are ours—our innovations, our kindling. We will use these strategies, born from the legacies of displacement, to set fire to the fiction of nationalism until every border is obsolete. Forced passageways can also become lines of communication—forging meaningful affinities, weaving together pockets of resistance, linking people around the globe into a fiery constellation of rebellious complicities.

We want to end Empire. Lucky for us, there are many ways to ignite the flames of resistance. The first step is finding each other.

Note from the Readers Editors:
The following document was circulated via Social Networks around April 2024, at the initiative of a group of Irish Academics concerned with the Militarisation of European Research Funding. Its creation was prompted by a White Paper proposing changes to the EU's Horizon 2020 funding scheme for academic research, allowing "dual use research", meaning research with both civilian and military applications (rather than solely civilian). This paper proposed a backdoor for the militarisation of research funding and the inclusion of Israel in the Horizon 2020 scheme has made the issue particularly pressing in the context of the Genocide perpetrated in Gaza.

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Consultations on Dual-Use and Research Funding

Submitting a consultation on The White Paper 'On options for enhancing support for research and development involving technologies with dual-use potential'

Context and Overview

Main Arguments Against Dual-Use and Research Funding

- The White Paper 'On options for enhancing support for research and development involving technologies with dual-use potential' proposes adjustments to permit more extensive funding of dual-use technology within the current funding framework programme, Horizon Europe (Option 1) or removing the restriction on dual-use technology for parts of the programme for its successor programme, Framework Programme (FP) 10 (Option 2) The only alternative it proposes is to establish a dedicated funding instrument for R&D with dual-use potential (Option 3). Currently, Horizon Europe is restricted to funding research with exclusively civilian applications, although organisations that also produce technology for military applications are not prohibited from participating.
- The White Paper notes that 'dual-use' is not defined in Horizon Europe but that the purpose of designating items 'dual-use' for export control is 'to avoid civil technology being misused or diverted for military purposes by countries, governments or non-governmental bodies to undermine peace or security or in connection with internal repression or serious violations of human rights and international humanitarian law.'
- We reject any option that permits dual-use research and development within the research funding framework programme (Horizon Europe and its successor programmes from FP10) on the grounds that this directs more public funding to war industry profiteers and implicates the entire research and innovation system ever more strongly in a drive towards militarisation that destroys lives, human dignity and the environment. It goes against ethical principles which are not only meant to guide research but also legislation. We also reject any transfer of budget to a dedicated

dual-use funding instrument now or in the future. Budget must be ring-fenced for basic and applied research for civil applications.

- The EU should pursue a path of peace, diplomacy and compliance with international law, aiming for a just and sustainable world for all people and a healthy planet. In doing this, the EU can achieve its 'aims and values' (outlined here) which specifically mention the promotion of peace as its main goal. The current restriction on 'dual-use' research within the EU funding framework programmes supports this, at least in principle. Changing this is antithetical to the mission of the EU because of its unethical application.
- Funding for research and innovation should support this aim in a spirit of open, collaborative scholarly enquiry and ethical technology development. EU funding for research and innovation should retain its exclusive focus on civilian applications and indeed enhance safeguards against the direction of public R&I funding towards military applications.
- Military research is already funded through the European Defence Fund (EDF), which had a budget of €8 billion for 2021-2027. In the interests of peace and security, strict separation is needed between civilian and military funding streams and we reject any move to open Horizon Europe and future FPs to dual-use research. Civilian research funding streams and their budgets must be protected from militarisation.
- EU defence policy is being heavily influenced by defence industry lobbyists, who profit from increased funding being directed to military or dual-use applications. Increasing defence spending and permitting dual-use applications within the EU R&I funding framework programme serves these narrow interests and not the interests of society.
- The EU Green Deal sets ambitious targets for Europe to become climate neutral and the research funding framework programmes support this through a variety of mechanisms, including EU Missions. Militarisation directly undermines this. The UN has recognised the devastating environmental (as well as human) costs of war, and a recent article in The Guardian showed the staggering greenhouse gas emissions generated in just the first 60 days of Israel's current assault on Gaza.

Examples of Existing R&I Funds Being Used for Military Purposes

- EU research and innovation funding under framework programmes FP7, Horizon 2020 and Horizon Europe have already been demonstrated to fund arms companies under the auspices of civilian security and other technology research. This has been catalogued in detail by many organisations and is summarised in this article by Statewatch, which demonstrates how EU R&I funding under the current framework programme is already culpable in what the ICJ has deemed a plausible case of genocide by Israel against the Palestinians in Gaza.
- Specifically, Israeli organisations such as Elbit Systems Ltd and Israel Aerospace Industries which profit from and are deeply complicit in Israel's long-term violent oppression and apartheid and current genocide of the Palestinian people have received funding for security research from European funding programmes. Israel is Associated to Horizon Europe, which means Israeli organisations can participate in the same manner as EU organisations.
    - This demonstrates that the programme already goes much too far in permitting participation of organisations contributing to human rights abuses and the flagrant undermining of the entire system of International Humanitarian Law. Even as Israel has broken countless UN resolutions and has been judged by the International Court of Justice to be plausibly committing genocide, the EU has refused to sever its trade links with Israel or ban them from Horizon Europe.
    - This also demonstrates that the EU cannot be relied upon to ethically regulate the participation of Associated Countries in breach of international

law in any dual-use research programmes. Furthermore, EU countries themselves are funding Israel's genocide. Germany has been taken to the International Court of Justice by Nicaragua, who has accused it of being in violation of the Genocide Convention due to its support for Israel's assault on Gaza, particularly its supply of weapons to enable the genocide. This means that even if Associated Countries are not permitted to participate in dual-use research under the framework programmes, we cannot trust that weapons companies within EU countries themselves will be prevented from profiting from war and genocide.

- The proposal to include an obligation to exploit results from certain programmes for dual-use purposes is concerning - it suggests plans to contractually require projects in certain areas (unspecified) to endeavour to find dual-use applications as part of an exploitation strategy (i.e., getting results taken up and used): 'introduction of an additional exploitation obligation in Europe for the results of actions on critical technologies as in the case of COVID-19 calls under Horizon Europe.' (p.13)

Recommendations

- The EU should maintain its current prohibition of dual-use for R&I funding and add stricter stipulations and enforcement mechanisms around what the funds can be used for. Specifically, it should not allow any R&I funds to be used by any organisation or academic institution cooperating with projects that will be used by militaries or by the weapons and arms industries.
- To align the current funding scheme with the aims and values of the EU, the EU should continue to prohibit dual-use research in current and future EU R&I funding framework programmes, increase and ring-fence funding for basic and applied research and innovation with exclusively civil applications and strengthen safeguards against R&I funding being mis-used by state or non-state actors to violate international humanitarian law. The budget for research and innovation funding for civilian applications should not be used to siphon off additional funds to military research, especially when substantial budgets already exist through the EDF.
- To assist with vetting applications appropriately, grant applications should include a short ethics statement where it is acknowledged that compliance with international law will be ensured. This could be evaluated as part of the scientific methodology, ensuring Responsible Research and Innovation, and when describing pathways to impact, including a requirement to address potential negative impacts and outline a plan for avoiding them.
- Organisations that also produce technology for military applications should be prohibited from participating in the current and future funding framework programmes.

Other links

Database on companies that receive EU security funding: https://opensecuritydata.eu/programs/Horizon-Europe?p=9&limit=100&legalForm=prc#tab=beneficiaries

Horizon Europe ethics self-assessment guide: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/common/guidance/how-to-complete-your-ethics-self-assessment_en.pdf (see mis-use section)

Horizon Europe security issues self-assessment guide: https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/common/guidance/how-to-handle-security-sensitive-projects_en.pdf

How to submit feedback

Go to this link:

https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/14060-RD-on-dual-use-technologies-options-for-support_en

(if you don't 'have an account you will need to create one)

Enter text - up to 4000 characters

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genres. I believe it is within such genres that we might find social processes that make the space to return again and again while immersed in the practices of sharing information and risk together.

Black Computational Thought as Endured Proximity

In this final section I will bring forth Bey's subject come undone, Taylor's repertoire, and Campt's infra-ordinary to bear as I locate them within the Freedom Quilts as a future leaning computational past and a living body within Black Computational Thought. I frame this discussion through David Golumbia's computationalism. In his text, The Cultural Logic of Computation, Golumbia makes a distinction between computers and computationalism. For him computationalism is "is the view that not just human minds are computers but that mind itself must be a computer — that our notion of intellect is, at bottom, identical with abstract computation, and that in discovering the principles of algorithmic computation via the Turing Machine human beings have, in fact, discovered the essence not just of human thought in practice but all thought in principle" [Golumbia 2009, 7]. Golumbia expands upon this term "as a commitment to the view that a great deal, perhaps all, of human and social experience can be explained via computational processes" [Golumbia 2009, 8]. Over the course of his text Golumbia tries to show the ways that the digital computer inherits much of its logic from a Post-Enlightenment high rationality. By engaging the work of Decartes, Hobbes, Kant, and Liebnitz, Golumbia positions this rationality; "computationalism entails not merely rationalism per se, but a particular species of rationalism with clear conceptual and historical weight, which we nevertheless seem all too ready to forget" [Golumbia 2009, 190]. The basis of Golumbia's critique lies at the episteme from which computational logics emerge solidified in formal reason and syntax.[20] Golumbia is attempting to show the ways that computationalism understands cognition itself as an inherent computing process, and by extension, all matters of phenomena in the world can be understood as a function of computation. This eerily mirrors the Screen New Deal future that Klein details, by which the economization of life is aggregated, totalized, tracked, mined, and brokered. This world is imagined as an ordered whole made of distinct intrinsically different pieces that can only be understood through their secondary effects of measure[21]. This is the world that the economization of life emerges from and continues to validate. It is the world of big data, Amazon Web Services, financialized global economies, calculated abandonment, and Eric Schmidt. In this imagination of the world the Subject is the only self determining thing gifted with cognition and capable of measuring the rest of the world through modalities of difference and claims of universality. In short the Subject is granted interiority. Golumbia reminds us that this interiority is thought to operate upon the same mechanistic principles as a computing device, taking in cold empiric data and making assessments and measures through cognition. In fact this model often passes for objectivity and is upheld as an ethical principle within much of computer science. It is a principle based on separability, distance, and asociality. Accordingly to Golumbia "Interiority qua universal subjectivity emerges from numerical rationality applied as an understanding of human subjectivity, and not vice versa. This is not to reject the idea of subjectivity outside of rationalist modernity: it is rather to suggest that the particular and elaborated form of interiority we associate with present-day modernity underwrites an unexpected and radical mechanism" [Golumbia 2009, 10]. This radical mechanism and its assumed neutral evaluation sits at the center of much of modern representation and performances of objectivity ethics. Bringing these insights from Golumbia into conversation with Denise Ferreira da Silva, this "universal" ethic falls away is in fact embodied within white European signification. da Silva argues that, "in both cases, cultural difference sustains a moral discourse, which rests on the principle of separability. This principle considers the social as a whole constituted of formally separate parts. Each of these parts constitutes a social form, as well as geographically-historically separate units, and, as such, stands differentially before the ethical notion of humanity, which is identified with the particularities of white European collectives" [Da Silva 2007, 63].

Through the principle of separability which da Silva grounds in Kantian reason, the different pieces which are imagined as components of an ordered world are incommensurable with each other. Their relationship is one of unbridgeable difference and distance. The mechanism that Golumbia describes sits at the center of this ordered world and is inscribed in the moral project of the human, written as white, European, and male. Therefore the others of Europe can only be measured by their difference to white European humanity and are therefore subjected to partial protections through rights and partial violence. This undergirds one of da Silva's primary questions, "How the racial combines with other social categories (gender, class, sexuality, culture, etc.) to produce modern subjects who can be excluded from (juridical) universality without unleashing an ethical crisis?" [Da Silva 2007, xxx]. This also helps us begin to understand one of my own questions which opens this article, Why does anti-blackness seem to perpetually overdetermine and saturate the operating system regardless of who is programming it? Because of the ways in which the Subject is written simultaneously into white European embodiment as well as computationalist rationality, it will continue to carry anti-blackness in its bowels even in the face of the most strident claims of universality and objectivity. For this reason Black Computational Thought allows for speculation beyond the Subject as mechanism, computing as computationalism, and separability as ethics. To ground some of this speculation[22] I work through a reading of the Freedom Quilts as Black Computational Thought in practice. Though containing many formal computational aspects[23], this reading of the Freedom Quilts is centered in computation as it works with Blackness to unsettle computationalism, objectivity, separability, and the Subject.

One of the primary tactics that informs the design and function of the Freedom Quilts is the use of everyday objects to circulate information within traditional African societies. Speaking on the power of everyday objects Tobin and Dobard state, "Communicating secrets using ordinary objects is very much a part of African culture, in which familiarity provides the perfect cover. Messages can be skillfully passed on through objects that are seen so often they become invisible. These objects are creative expressions of African artisans and give tangible form to the cultural and religious ideas of their kingdoms" [Tobin and Dobard 2000, 39]. Tobin and Dobard document this practice through the role of the griot as the guardian of culture and societal history. Based in oral traditions, the role of the griot was to remember and share ancestral lineage, customs, beliefs, histories, and legends from generation to generation. The griots "learned and taught via an oral tradition, based on memory, aided by the use of specially designed mnemonic devices. Encoded staffs, stools, memory boards, sculpture, and textiles chronicled the history of a people. But only the griots and the diviners were able to read them" [Tobin and Dobard 2000, 40]. This practice is one that continued into the new world as enslaved Africans held onto their cultural memories and combined them with others stolen from their lands to create new creolized semiotic systems that crafted convert ways for enslaved peoples to communication with each other, circulate knowledge, and build wholly different cultural systems within the diaspora. These creolized symbols were the basis for a visual language that gave new identities to those for whom culture had been stripped as they were subjugated into objects. Here the materiality and cultural legacies meet in the interface of the quilts themselves. Repertoire becomes the means through which knowledge is archived and materialized within cultural objects.

The quilt code which Tobin and Dobard uncover, includes ten primary patterns and a number of secondary patterns. Each pattern had two meanings, both to signal to those enslaved to prepare to escape and to give clues to indicate safe directions on the journey. Following these instructions enslaved people would know when to gather the tools they would need for the coming journey, the time to escape from the plantation, ways to navigate hundreds of miles to Cleveland (as a prominent location for continued travel to free destinations in the North), places

to find fresh clothes and shelter, and practices for recognizing other confidants. This mnemonic device was used in addition to sampler quilts which held all ten primary patterns in sequence to aid in recognition while on the run. After leaving the plantation enslaved people would encounter quilts bearing single patterns left in public to air. These quilts became the constitutive matter that held together disparate subterranean connections. Because the circulation of information traveled widely and lacked centralization, the mnemonic devices used and patterns themselves changed often to insulate from outside parties learning and understanding the quilt code. For such a complex system to work it required a tremendous amount of labor, maintenance, and shared risk. This means that aside from the use of everyday objects, the making of shared diaspora cultures through the combining and mixing of cultural artifacts gave rise to fugitive formations themselves, in Bey's sense of the word.

Here, computation is not an internal process housed in the Subject (in a vacuum of interiority) that sees and measures the exterior world as a series of different bodies upon which forces are acting. Instead the Freedom Quilts become a site in which Blackness is being written through the creolization of symbols, meanings, context, and codes that literally calculate pathways to fugitive escape and flight from the plantation. Programmability, in this context, complicates the temporality of code as executable function, as cause and effect. The Freedom Quilts generate a type of code that doesn't execute automatically but makes the act of interpretation explicit. While encountering quilts left in public fugitives would discern the code and simultaneously have to read it in context, within the geography of placement. In this instance the executability of code is halted as a declarative axiomatic language imagined within syntax. Code is not an absolute instruction but is read in addition to landscape. Differing from the programming of second-order cybernetics, the landscape is not reintegrated into code, making it workable. Instead the limit of computation is held by the materiality of space, it is not transcended. Black people on the run would read the code with the landscape and continue on their journey. Computation in this instance does not need to be a totalizing logic that engulfs everything but lives alongside bodies in motion, in relation to geography, reading both simultaneously.

This relation between Black sojourners, geography, and the quilt code also extends to ancestral calculations.[24] The creolized semiotics that become the patterns encoded with meaning and stitched into the quilts are reflections of knowledges and sense-making done by ancestors prior. The quilt code carries these knowledges into present function. In Campt's formulation[25] certain ancestral calculations were what had to have been for the future-present to be lived now through fugitive acts of flight. The quilt code makes this connection clear, as these creolized semiotics were essential for cultural encryption and the protection of the code.

Computation here engages difference outside of separability.[26] Black peoples before capture, from various geographic, historical, and cultural sites, are not fixed in their ultimate difference upon which the only mediation is found through measurement. Perhaps even more importantly the transparent center from which they are measured is not grounded in white European standards. Instead, Black people exchange and reconstitute their own situated knowledges into new systems of information and communication. This is difference without separability.[27] This then opens computation to practices of endured proximity. By this I mean that the measurability of difference cannot be displaced and remade as intrinsic separation. That as we measure and collect data about the external world, we cannot continue to think of ourselves as transparent or incommensurable in our relationship to what is being indexed. Instead we must contend with our relationship to the index. Black Computational Thought grounds computational ethics in this practice of contention. It refuses imaginations of the world by which calculable measurement is the only relationship between things and pushes us to meaningfully engage difference as a relationship that we are entangled within. Only by doing this will contemporary flights of liberation be imaginable. In this formation, endured proximity supplants objectivity and separability as the moral ground upon which to stand when working on data ethics, bias, or algorithmic violence. Black Computational Thought attempts to open the space for othered social formations that work in excess of measurable, separable difference, and towards staying with the difficult work of proximity, trust, sociality, and risk.

One such formation resides in the quilting bees on plantations. Quilting bees were collective circles of primarily women that sat together and constructed quilts in collaboration. Because these quilts were often sourced from various spare pieces of fabric they were piecemealed and required numerous people to collect and plan each quilt. Quilting bees were sites that were both social and operated as convergences for vital stops along the plantation grapevine. Referencing James Oliver Horton's work in *Free People of Color: Inside the African American Community*, Tobin and Dobard describe the plantation grapevine as:

> interregional communication system existing between free blacks of the Northeast, the Midwest, and the South and enslaved Southern blacks. Horton chronicles how enslaved blacks and free blacks were able to meet at inns frequented by traveling plantation owners who were accompanied by black slaves acting as drivers and servants. He discusses how black sailors were able to exchange information with enslaved blacks at port cities; how slaves who were hired out to shops were able to gather information; how the black churches, even under the scrutiny of whites, acted as "post offices" for messages containing escape routes and instructions for escape and survival; and how plantation slaves hired out to work in a neighboring town served as dispatchers of these messages [Tobin and Dobard 2000]

As Tobin and Dobard document, sites such as quilting bees became gathering spaces through which communication between free Black people in the north, white abolitionists, and the enslaved took place across numerous plantations and regions were able to send messages and communicate. Again, because agency was assumed only within the Subject figured as white, propertied, and male, enslaved Black people that accompanied their masters were able to play covert roles as dispatchers of secret messages. Likewise, quilting bees were seen as docile innocuous gatherings associated with craft and feminized labor. Yet, it is exactly this infra-ordinary quality of Black quilt making and its capacity for agency that allows for resistance to take place in the open.

Looking at quilting bees in this way also allows us to build on Tiffany Lethabo King's understanding of fungibility, as it relates to computation. *In The Black Shoals: Offshore Formations of Black and Native Studies*, King states:

> As a Black fleshy analytic, I argue, Black fungibility can denote and connote pure flux, process, and potential. To be rendered Black and fungible under conquest is to be rendered porous, undulating, fluttering, sensuous, and in a space and state at-the-edge and outside of normative configurations of sex, gender, sexuality, space, and time to stabilize and fix the human category. Black fungibility is an expression of the gratuitous violence of conquest and slavery whose repertoire has no limits or bounds. It operates both materially on the body and produces Blackness (as idea and symbol) as a discursive space of open possibility.

[King 2019, 23]

The ways that Blackness works in the diaspora to give rise to various gatherings blurs this line between the separability of things, echoing Moten's definition of blackness as "a specific upheaval, an ongoing irruption that anarranges every line." [Moten 2018, 1] Because chattel slavery remakes the category of Blackness in the New World, formerly African peoples in part lost their connection to specific regional and tribal languages, customs, practices, and histories. This illustrates how various African people affected by chattel slavery became organized through

various forms to mount resistance. Yet, the highly adapted systems of communication, cultural creolization, and trust that gave rise to the Freedom Quilts involved consistent forms of sociality and fungibility such as the quilting bees by which the piecemeal formation of the quilts as a vital interface parallels the makings of Blackness to form different possibilities on the edge of subjection. Quilting bees became important gatherings where enslaved people "were able to compile facts regarding geography, landmarks, places to avoid, obscure trails, mileage, and the locations of safe places where food and rest were waiting, many escaping slaves knew where to go and how to get there. Former runaways shared their own tactics and routes of escape. Most early escape attempts were individual efforts by slaves, not part of any organized cooperative ventures headed by Northern abolitionists."[Tobin and Dobard 2000, 74] In this way, Blackness became a constituting position through which computing systems were produced and are entangled with the materials, people, cultures, and places that enacted them.

Elsa Barkley Brown speaks brilliantly about the ways that material cultures carry alternate understandings for socially, economically, and politically ordering the world. Speaking specifically about Black women's quilting practices she writes, "African-American quilters prefer the sporadic use of the same material in several squares when this material could have been used uniformly because they prefer variation to regularity…In other words, the symmetry in African-American quilts does not come from uniformity as it does in Euro-American quilts; rather, the symmetry comes through the diversity" [Brown 1989, 923]. Brown connects the errant quilting practices of Black women to other Black cultural forms such as jazz improvisation and polyrhythmic drumming. Both united through a considered practice of making structure through contrast and difference, Brown articulates theses forms as expressions of true democracy, "…for each person is allowed, in fact required, to be an individual, to go his/her own way, and yet to do so in concert with the group-to be an individual in the context of the community" [Brown 1989, 925].

Here the digital is returned to the digit, to the hand, to haptics, textures, and textiles, to the process of making through material and proximal relations to each other, to making through endured engagements with difference. Brown's reflections on Black women's quilting practices carry aspects of Bey's self-determinism as a repertoire for ways to share information and knowledge with each other through endured practices of risk taking.

In closing, I want to be clear: Black Computational Thought is not just a historic recovery of the fact that Black people have done some shit with numbers. It is an epistemic confrontation with the logics of computation situated elsewhere and challenges the very nature of what we consider computation to be and to have been. It is an argument for forms of computing embedded in technologies of living,[28] connected to care work, to fullness, to difference, and to shared practices of risky meaning making. Returning to Campt, this is not a matter of hope, but is one of tense. She describes this tense as, "humble, and strategic, subtle and discriminating. It is devious and exacting. It's not always loud and demanding. It is frequently quiet and opportunistic, dogged and disruptive" [Campt 2017, 17]. In thinking about futurity as tense Campt offers what she calls, Black feminist futurity. Elaborating on this term she writes, "It strives for the tense of possibility that grammarians refer to as the future real conditional or that which will have had to happen. The grammar of black feminist futurity is a performance of a future that hasn't yet happened but must….It is the power to imagine beyond current fact and to envision that which is not, but must be. It's a politics of prefiguration that involves living the future now — as imperative rather than subjunctive — as a striving for the future you want to see, right now, in the present" [Campt 2017, 17]. In her understanding of futurity there are no guarantees, there is no safety in eventuality, there is nothing promised to us. In the face of this, Black feminist futurity is one that must be made. It is an understanding of the future real conditional, of that which would have had to have happened for us to exist in the future. In this sense futurity is present work upheld by the daily practices of refusal. This makes clear the stakes of fugitive computational practice and the work of Black Computational Thought. It is not a site of salvation or assimilation but instead does the deep work of radical Black feminism, "grappling with precarity, while maintaining an active commitment to the everyday labor of creating an alternative future" [Campt 2017, 16]. I believe this is the call that closes June Jordan's epic poem, written almost 37 years prior to Campt's text, towards a natural disorder. My engagements with fugitive computation are indebted to understanding this natural disorder, this turn to ensuring a future through fugitive acts taken now. To move beyond the paralysis of precarity, preparing a new world in the face of extinction.

Notes

[1] I evoke this term in the ways that Denise Ferreira da Silva mobilizes it from Kant. In "On Difference Without Separability" da Silva identifies separability as a key element of Kantian thought that still influences contemporary political and ethical projects. Separability is the idea that "all that can be known about the things of the world is gathered through formal constructs such as time, space, quantity, quality, relation, and modality" [Da Silva 2016]. These formal characteristics become the justification for variously hierarchical structures which rationalize some people as human and deserving of ethical consideration and others as less than human and undeserving.

[2] In the preface to Tiffany Lethabo King's *The Black Shoals: Offshore Formations of Black and Native Studies* she describes the violences of genocide and slavery as edgeless. The violence moves as one. Because none of us are truly safe, it requires shared ceremonies to combat.

[3] This term comes from Ruth Wilson Gilmore's work in *Golden Gulag: Prisons, Surplus, Crisis, and Opposition in Globalizing California*. Gilmore uses it to describe the various ways in which capital becomes reorganized in response to surplus crises leading to state neglect and justifying cuts in state spending for social benefit

[4] For reference see Tawana Petty's incredible work in "Defending Black Lives Means Banning Facial Recognition" published in *Wired Magazine* 7/10/2020.

[5] For reference see Yeshimabeit Milner's work with *Data for Black Lives*. In particular I am referencing her article "Abolition Means the Creation of Something New: The history of big data and a prophecy for big data abolition." This article was published in *Medium* 12/31/2019.

[6] Here it is important for me to share my gratitude for Fred Moten's scholarship on fugitivity in his works "The Case of Blackness," *The Undercommons: Fugitive Planning and Black Study* with Stefano Harney, and *Stolen Life*. In *Stolen Life* Moten describes fugitivity as "a desire for and a spirit of escape and transgression of the proper and the proposed. It's a desire for the outside, for a playing or being outside, an outlaw edge proper to the now always already improper voice or instrument…moving outside their own adherence to the law and to propriety" [Moten 2018, 131]. While indebted to Moten + Harney's work in developing a theory of fugitivity I am especially beholden to Tina Campt and Marquis Bey's conceptions explored in this article.

[7] Gramsci refers to this transitional moment as an interregnum, the liminal space between two worlds. For reference see Gramsci's discussions on crisis in *Selections from the Prison Notebooks*.

[8] Translated from Michel Foucault's term, "dispositif," in his 1977 interview *Confessions of the Flesh*. The "apparatus" refers to the institutional, administrative, and physical structures through which power relations are formalized.

[9] Introduced in Foucault's text, The Order of Things, episteme comes to mean the unconscious beliefs that structure scientific knowledge in a particular time and place.

[10] As used in Martin Heidegger's The Question Concerning Technology . Heidegger uses techne to mean a practice of revealing or bringing forth. It is connected to making not just objects but knowledge and discourse. This differs from common understandings of technology as a tool or instrument.

[11] Based in Denise Ferreira da Silva's piece, " Toward a Black Feminist Poethic." She uses poethics to describe a speculative manner of thought to think the world differently, beyond the trappings of linear rationality that underpin Eurocentric colonization.

[12] Here I am referencing Denise Ferreira da Silva's work in *Toward a Global Idea of Race*. In this text she deploys this term to indicate the mutual constitution of specific subjects and knowledge about said subjects through a shared dependence on ontology and epistemology within modern thought.

[13] By invoking subjection I am taking up Saidiya Hartman's explorations in *Scenes of Subjection: Terror, Slavery, and Self-Making in Nineteenth-Century America*. Hartman argues that the violences of slavery are not merely found in the designation of the enslaved as objects but also in the circumscribed forms of humanity imposed on the enslaved. In doing so she details the "the forms of violence and domination enabled by the recognition of humanity, licensed by the invocation of rights, and justified on the grounds of liberty and freedom" [Hartman 1997].

[14] I use the term genre in reference to Sylvia Wynter's work on the sociogenic principle as well as the ways that she takes up Aimee Cesaire's call for a new science of the word. Wynter argues that humans are hybridly evolved as both bios and mythoi, meaning that our brains have evolved in a way by which language and the semiotics we use to describe ourselves carry meaning into scientific empiricism. Science then is never separate from the social, cultural, and political context articulated through language. For this reason Wynter describes humans as existing in different genres given the symbolic and cultural context of language. This challenges universal rationality. I aim to similarly challenge the universal assumptions that computation denotes, instead situating computing practices within specific social, cultural, and political contexts. For further reference see Wynter's work in "Unsettling the Coloniality of Being/Power/Truth/ Freedom" and "Toward the Sociogenic Principle: Fanon, Identity, the Puzzle of Conscious Experience, and What It Is Like to Be 'Black'".

[15] Bataille in his text Erotism: Death and Sensuality describes this process as a central desire within modernity. He calls this continuity.

[16] Here I am cautioning against calls for inclusion that fail to address the inherent violences of liberal humanism. In doing so I take heed from Denise Ferreira da Silva's arguments against the sociohistorical logic of exclusion in Towards a Global Idea of Race. In doing so she argues that, "we fail to understand how the racial governs the contemporary global configuration because the leading account of racial subjection — the sociohistorical logic of exclusion — (re)produces the powers of the subject by rewriting racial difference as a signifier of cultural difference" (da Silva xxiv).

[17] In *All Data Are Local: Thinking Critically in a Data-Driven Society* Yanni Loukissas focuses on locality as a vital consideration for working with data that pushes back against the universalism often assumed by the dataset. By focusing on data settings instead of the data set Loukissas invites us "to look at the local conditions of data can be a form of resistance to the ideology of digital universalism and threat of erasure that it poses to myriad data cultures" [Loukissas 2019, 10].

[18] Throughout this article I have spoken about risk multiple times. My interest in shared risk taking is to make clear alternate ways to respond to the violent utility that predictive analytics authorize. As prediction seeks to identify and control risk preemptively, it simultaneously reifies the Subject as a self determining being in conflict with exteriority. Violence becomes naturalized and justified as a requirement for maintaining the interiority of the Subject. This same logic undergirds predictive analytics and risk assessment models justifying violence as a way to meet perceived risk, read as non-white, poor, ungovernable, and irrational. In the book Mutual Aid: Building Solidarity During This Crisis (And the Next) Dean Spade writes, "Mutual aid can also generate boldness and a willingness to defy illegitimate authority. Taking risks with a group for a shared purpose can be a reparative experience when we have been trained to follow rules" [Spade 2020, 20]. This manner of taking shared risk together as a response to uncertainty allows us to begin to orient to each other and shed the violent utility that protection requires as an individual.

[19] Glissant calls this circular nomadism, "each time a portion of the territory is exhausted, the group moves around. Its function is to ensure the survival of the group by means of this circularity" [Glissant and Wing 2010]. Glissant understands this kind of nomadism as a response to uprooting (crisis) which can "work toward identity, and exile can be seen as beneficial, when these are experienced as a search for the Other (through circular nomadism) rather than as an expansion of territory (an arrowlike nomadism)" [Glissant and Wing 2010]. This is a response to crisis that engages in different constructions of identity through diaspora.

[20] Syntax becomes a crucial component for computationalism in Golumbia's argument. Columbia argues that in order for computationalism to make equivalences between cognition and computation, producing language needed to be described in computational terms. Golumbia details the ways in which Noam Chompsky's innovations into linguistics with a particular focus on syntax became the foundation upon which computer scientists began to remake the mind as a computer. Syntax in this context acts as a formal logic system built on protocol and hierarchy.

[21] By secondary effects of measure I am referring to Denise Ferreira da Silva's article "On Different Without Separability." In it she marks a shift in 17th century continental philosophy which focused on the "secondary (efficient) causes" of motion. This focus on efficient causes reduced the complexity of being into observable differences made certain through measurement. This certainty made a mechanistic world view possible by which difference is irreducible and creates the contours by which our ethical considerations for each other are limited and macerated.

[22] Here it is important to address the scrutiny and criticism following Tobin and Dobard's text *Hidden in Plain View: A Secret Story of Quilts and the Underground Railroad*. Since its publication it has been the primary reference detailing the use of the Freedom Quilts. It has also been a text engulfed in controversy. Much of this controversy comes from quilt historians such as Barbara Brackman who point to various gaps in the historic documentation to confirm Tobin and Dobard's account. Brackman's argument tends to highlight the dearth of corroborating oral history accounts of the quilts and discrepancies about the popular use and re-use of certain quilting patterns such as The Log Cabin. Rather than prove the use of the quilts in either Tobin and Dobard or Brackman's accounts I find promise in Saidiya Hartman's work struggling with the archive as both an index of violence and an incomplete accounting. In "Venus in Two Acts" Hartman offers a method of critical fabulation to operate beyond the empiric authority of the archive and its inability to render the lives of the enslaved beyond objects. On this she writes, "I have attempted to jeopardize the status of the event, to displace the received or authorized account, and to imagine what might have happened or might have been said or might have been

done. By throwing into crisis “what happened when” and by exploiting the ‘transparency of sources as fictions of history,’ I wanted to make visible the production of disposable lives (in the Atlantic slave trade and, as well, in the discipline of history), to describe ‘the resistance of the object,’ if only by first imagining it, and to listen for the mutters and oaths and cries of the commodity” [Hartman 2008]. It is in this manner that I am attempting to approach my work with the Freedom Quilts. While the exact mechanics of the use of the quilts is in contention, the practices of enslaved people to engage in exercises of trust building and information sharing along the plantation grapevine cannot be ignored. Neither can the means of plotting and calculating paths of escape from the plantation. I am actively choosing to engage these narratives in ways that ascribe fugitive agency to Black people even without properly proving the mechanics of their actions.

[23] For reference see Ron Eglash’s text *African Fractals: Modern Computing* and *Indigenous Design as well as Africa Counts: Number and Pattern in African Cultures* by Claudia Zaslavsky. Both text highlight the ways in which various cultural pattern making practices across the continent retain cultural and formal mathematical functions.

[24] Here I am specifically thinking with Alexis Pauline Gumbs and Julia Roxanne Wallace in their piece, “Black Feminist Calculus Meets Nothing to Prove: A Mobile Homecoming Project Ritual Towards the Postdigital” in which they theorize black feminist calculus writing, “We are the future predicted by the careful calculations of our ancestors, their specific choices about when to breathe, when to sleep, who to be, where to go, and for how long” [Gumbs 2016, 305].

[25] By Campt’s formulation I mean her assertion that Black feminist futurity is a matter of tense. In Listening to *Images: An Exercise in Counterintuition* she describes Black Feminist Futurity as the future real conditional or that which will have had to happen.

[26] Here I want to point to parallels between my use of separability and Tara McPherson’s work looking at how lenticular logics structure racial representations and epistemologies through UNIX protocols. In “U.S. Operating Systems at Mid-Century: The Intertwining of Race and UNIX” McPherson draws parallels between changing racial and political discourses and emerging digital computing practices in the 1960s. Her argument focuses in part on the rule of modularity as a particular principle within UNIX. She writes that this rule of modularity was adopted by a nascent neoliberal state and used to discipline and quell radical calls for liberation. On this she writes, “I am highlighting the ways in which the organization of information and capital in the 1960s powerfully responds-across many registers-to the struggles for racial justice and democracy that so categorized the U.S. at the time. Many of these shifts were enacted in the name of liberalism, aimed at distancing the overt racism of the past even as they contained and cordoned off progressive radicalism.”[McPherson 2013]

[27] Here I am attempting to take up da Silva’s call to rethink the social beyond the separability proffered by Kant and made certain through Cartesian logics. Rather than think the social through Newtonian particle physics she pushes us to consider the strange effects of quantum mechanics primarily nonlocality. Nonlocality refers to the phenomenon by which the measurable properties of one particle instantaneously provide the measurable properties of another particle regardless of the distance between the two. Rather than understood as being separate individual entities they are entangled together through a shared relationship. da Silva closes her essay writing, “When nonlocality guides our imaging of the universe, difference is not a manifestation of an unresolvable estrangement, but the expression of an elementary entanglement” [Da Silva 2014, 65].

[28] I was introduced to this term through Tamura A. Lomax’s work, “Technology of Living” published in *The Black Scholar*. In this article Lomax invokes technology of the living from Toni Cade Bambara’s seminal work *The Salt Eaters*. In it Bambara describes technology of the living as a spiritual practice of study. Lomax builds on this definition to include “it is a force where the political and logical encounter the spiritual being, where activists and spiritualists come together to make sense of black life and journey toward black wellness” [Lomax 2016, 22],

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There is no Software, there are just Services: Introduction

Irina Kaldrack and Martina Leeker

Digital technologies permeate our daily lives. We access our social networks and the content we produce both individually and collaboratively, and other kinds of information from anywhere and everywhere. Along with the fusion of computers and telephones into smart, mobile devices, these practices are changing the concept and the materiality of software. In the past, shrink-wrapped software, as it was called, had to be purchased, installed on a *personal computer* (PC), configured, and updated regularly. Today, however, it suffices to log on to a single platform and install a *service* to easily access Dropbox, Facebook, Google, etc. In parallel to the development of *clouds*, web services, and mobile apps on the consumer market, "classic" software providers are moving to subscription models in ever-greater numbers: Adobe Creative Suite becomes Adobe Creative Cloud and Microsoft Word becomes Office 365. Software is no longer purchased, but rather can be rented. The world of PCs, in which hardware is embodied in an object and the *operating system* (OS) allows the user to install and execute software, is being transformed. The hardware is getting smaller and diversifying into netbooks, laptops, mobiles

and tablets. The possibilities for their use—formerly provided by software in bundled applications and *graphical user interfaces* (GUI)—are now designed in cascades of services. The user's devices merely enable access to services that in turn, access spatially remote hardware and control processes.

This development within the consumer domain corresponds to a shift into *Software as a Service* (SaaS) for business. Accordingly, companies can lease IT-supported administration services for managing their employees, products, and customer data. Hence, hardware purchases are limited to Internet-enabled computers with access to a SaaS provider. There are no expenses to be paid in terms of servers or software, modifications or maintenance by in-house IT departments or external consultants. Instead, the company merely pays access fees. This saves companies money and time and allows them to concentrate on their core business, as the sales pitch goes, and to generate greater profits. Beyond that, promises are made regarding the services' ease-of-use, since these business processes like "product ordering," "delivery," or "payment receipt" are displayed and can be combined with relative ease. This means there is no longer the need to have expert knowledge of programming to optimise IT resources to one's own needs (see Neubert in this volume).

The publishers' thesis, "There is no software, there are just services," describes this situation as a radical break with the previous epoch: Hardware, once objectivized as a physical computer, is becoming distributed across different data centers and dissolving completely into infrastructures. And software, for its part, has to date, controlled the spacio-temporal materiality of hardware and offered up user interfaces, but it is dissolving in a cascade of services that organize access to data and its processing. Ownership of software is thus becoming obsolete, replacing goods as property through service use. This "use-economy" is open to all and promises empowerment: With these new services, everyone has the potential to offer their skills and goods for sale or exchange, as well as reinventing existing services

through combination and modification. It is exactly this interplay between entrepreneurial services and the rising "participatory culture" that corresponds to a process in which any kind of aid or help, personal service or favor—our normal, everyday practices—can be subjected to the law of the economical (see Lison in this volume).

The thesis and title of this this volume refers not only to a situation of historical upheaval, but it may also be understood as a confrontation with a significant systematic argument of media science. The reference is of course Friedrich Kittler's claim that there is no software, but only hardware, because the technical operations occurring within the computers could be reduced to switches in the hardware, which are then merely made human readable by the software (1992). Lev Manovich provoked Kittler's thesis with the technical historical diagnosis, "There is only software" (2013, 147ff.), since all media forms, from photography to painting, have meanwhile dissolved into software in the age of digitalization. To describe the contemporary signature of digital cultures as cascades of queries and operations that are structured by bandwidth and connection speeds (see Parikka in this volume) is less of a reference to a historical upheaval à la Manovich (2013). As a variation of and commentary on Kittler's systematic argument, it is instead suggested here that there could very possibly be no such thing as stand-alone hardware either, because programs and hardware have always been linked as services (see Neubert in this volume). Following Thomas Haigh, one could go even further and say that hardware is part of a complex system, comprising programs, support, documentation, companies, distribution, engineers, and programmers, as well as learning processes and practices (2002, 2013). Hence, the following research hypothesis arises, referring to Kittler's systematic argument: Where hardware is part of a system in which "services"—in the sense of negotiating the use and commodification of distributable software among multiple actors—are crucial (Haigh 2013), it is not the technical conditions relating to

hardware or software technologies that determine the situation, but rather politics and economies as well as practices and cooperative constellations (Erickson and Kelty in this volume; Gießmann and Schüttpelz 2015; Schmidt 2015).

The thesis, "There is no software, there are just services" is thus apodictic and inadmissibly simplified. Of course, there are products that are offered as software even in this age of services. Furthermore, it is yet to be seen whether a radical shift will take place from a software regime to the rule of services. But the pointed assertion is provocative in such a productive way that it practically forces the necessary detailed and sophisticated observation of contemporary developments in the context where services are ubiquitous, that it is likely to have a major stake in the configuration of digital cultures. With their contributions, the authors of this volume present this debate, which can be structured into the areas of *technology*, *practices*, and *economy*. Even if these different perspectives on services seem to overlap, each focus nevertheless yields specific results. In a history of technology informed by media and cultural studies, the interplay between software, services, and hardware becomes clear, quite contrary to the assertion that software does not (or no longer) exist (Neubert; Erickson and Kelty; Magee and Rossiter; Parikka). There have always been services, it is just that their use and emphasis has changed (Haigh 2002, 2013). The strong focus on practices (Fagerjord, Lison, Erickson and Kelty) as well as the economy (Lison, Magee and Rossiter, Parikka) each shows, in a different way, to what extent and with what consequences services as business models permeate other social domains. Thus, this publication takes up positions found in software studies that examine how different forms of software are embedded into the contemporary world. Herein lie issues of how software shapes subjectivities, commonalities, and working forms and how it is modified by them (e.g., the online journal *Computational Culture*; Fuller 2008 and Chun 2006, 2011). By focusing on services and with a differentiated discussion of

the concept in the narrower as well as the figurative sense, this book provides initial orientation for researching services, as well as for effective interventions in a "services culture." The focus on interventions follows from the supposition that the shift toward services could lead to its own form of governmentality. This calls for further investigation and is yet to be explored as a level of critique of service cultures. With this in mind, each of the following illustrations of the individual areas implies particular options for intervention. This book aims to deal with the phenomenon and research field outlines above, but by no means claims to be exhaustive.

Technology

The contributions in this volume address the technological nature of services from a technical-historical viewpoint. From this perspective, the claim that an epochal upheaval is occurring in the transition from software to services invokes an immediate contradiction. As Christoph Neubert argues, what calls for investigation is in fact the relation between hardware, software, and services. This relation, namely, is negotiated anew for each specific historical point in time and against the backdrop of technological and economic developments. In this reconstruction, software appears to be an instable element that mediates between machine and business processes. The modularization and encapsulation of program functions and the blackboxing of those as services, interlocks technological continuities—from *object-oriented* to *agile programming*—with conceptual and discursive shifts. Seth Erickson and Christopher M. Kelty focus on this interlocking of change and stability. Their heuristic approach uses concepts from contemporary theory of evolution in order to identify "patterns of change and stasis, patterns that tend to preserve ancestry" (Erickson and Kelty, 42, quoting Wimsatt and Griesemer 2007, 283). Rather than insisting that abstract distinctions do exist between software and services, in the spirit of Bruno Latour, they ask in which "modes of existence" (2013) do

different forms of software currently occur. Liam Magee and Ned Rossiter have selected the historical development of databases as a historical reference for their contribution. It becomes clear in their recreation, how technological innovation from *relational* and *non-relational databases* accompanies certain "politics of parameters," which in turn correspond to the policies of the organization and knowledge production, regulation, and control. Jussi Parikka takes his cue from Virilio (1999 [a], 1999 [b]) and looks at the disruption and collapse of services, namely through *denial-of-service* (DoS) attacks. In this way, he clearly demonstrates the technological conditions on which SaaS are based: bandwidths, transfer speeds, and the efficient management of traffic come to the fore and reveal how network policy application is involved.

These historical reconstructions point out the moments at which the technological conditions shape the transitions from software to services and their respective regimes. Thus, they signal possibilities for intervention within the interplay of technology, practices, political economy, and discursivations.

Practices

Services exhibit a two-fold relation to practices. First, the technological procedures within the service architectures dictate ways of programming as well as communicative and economic transactions. Thus, the use of files changes, according to Erickson and Kelty (49f.), through the use of apps: These do not just constitute the only access to one's own content in the cloud, they also fuse files to users, accounts, and platforms at the same time. Second, user practices have a reciprocative impact on the technology. Andrew Lison thus describes how the subscription model of Adobe's Creative Cloud makes the illegal cracking of licensed software, like Photoshop, practically impossible. This development seems to be a technical solution to prevent undesirable practices.

Anders Fagerjord shows how a differentiated picture of a technical culture of services can only be arrived at by looking at practices. He looks at the practices of app culture and exposes it as a part of services. The promise of the app industry that apps should be easy to program and use, as well as freely available, is quickly deconstructed, if one looks at the network of actors participating in app production. Contrary to the promises, a monopolization may be on the rise, as the economic policy of Apple demonstrates. These apps can only be programmed and used on Apple devices and are only available via the Apple App Store. Following actor-network theory (ANT), Fagerjord develops a model for analyzing how the combination of different actants and their interests can modify or even undermine the industry's service infrastructure.

Focusing on the practices shows that and how these are designed as operations and operation chains and can thus become translatable into services. By equating these, the productive moment in the interaction of a reciprocative influence of technology, economy, and practices disappears. This is what Lison and Fagerjord highlight to differentiate the software from the service culture. From Fagerjord's refined analysis, based on ANT methods and insights, one could deduce degrees of freedoms, which could help users to defend themselves against being forced into uniformity inside the service regime and to interrupt the cascade of services.

Political Economy

If one focuses on the economic and social effects of the transition from software to services, the promises of companies operating these applications disintegrate rather quickly—promises like freedom and efficient time management. Rather, a new paradigm becomes clear, one that is revealed to be a regime of an all-encompassing service policy (Magee and Rossiter) and service economy (Lison). Markus Krajewski has made important

borrow from a recent tweet, once the things you owned, owned you; now the things you use (that you hold, that you ask for help and support), use you. What's handy—*Zuhandigkeit* (ready-to-handedness, to use Martin Heidegger's coinage)—spoils hands qua hands. It's getting harder to grasp. The left takes charge, the right points, holds the book, the telephone, ham-fisted, the match, the warm gun; the trigger finger, pressing an elevator button.

"*They programmed you to think you were a human with a surgically attached computer for a hand.*" From a speaker in the artificial left hand attached to the protagonist, this sentence comes right after he learns he is in fact a human-looking automaton. It happens in the penultimate scene of a classic 1964 episode of *The Outer Limits,* "Demon with a Glass Hand," written by Harlan Ellison.[35] Mr. Trent is the eponymous Demon—more like Maxwell's thermodynamic particle sorter or the Socratic guidance and interruption system than one of the diabolical monsters more familiar from the series. *The Outer Limits* ran for two seasons and was scripted by some speculative fiction heavyweights. It followed an anthology structure, each episode framed by a message, a certain cybernetic conceit about the spoiling word that has particular resonance for this episode:

> There is nothing wrong with your television set. Do not attempt to adjust the picture. We are controlling transmission. If we wish to make it louder, we will bring up the volume. If we wish to make it softer, we will tune it to a whisper. We will control the horizontal. We will control the vertical. We can roll the image, make it flutter. We can change the focus to a soft blur or sharpen it to crystal clarity. For the next hour, sit quietly and we will control all that you see and hear.[36]

The program controls you, and, we repeat, there's nothing wrong with your set.

In fact, the last uncomfortable glance from Trent's would-be human love interest—Consuelo—is what's *just wrong*. The spoiling gesture, even more specifically, is marked by her hand withdrawing from his, an awkward gesture that simultaneously mirrors the co-created sympathy and repulsion on her face. Spoiler alert: stimulus aversion, automatic repulsion from functional automation, is the gesture that is most relevantly human. Consuelo exits the uncanny valley, scampering down the steps of the same building featured in *Blade Runner,* trailed only by biomechanical ennui. Robot-Trent faces a spoiled millennium's worth of tedium, waiting until the time arrives to execute his program, upload the data payload, and reboot humanity. We at last understand what the series narrator meant at the start when he cryptically compared the protagonist to the immortal Gilgamesh, a point reiterated at the end: "Like the Eternal Man of Babylonian legend, like Gilgamesh, one thousand plus two hundred years stretches before Trent. Without love. Without friendship. Alone; neither man nor machine, Waiting. Waiting for the day he will be called to free the humans who gave him mobility. Movement, but not life."

Neither replicant nor terminator, Trent arrives from a ruined future as an ambient program. Like Socrates's Daemon, he affects interruptions, and, like Maxwell's, entropic sorting. "The 'Man/machine' relationship was reversed," writes Flusser, a reorientation he already observes at effect paradigmatically in the workings of the camera: "Man did not use machines any more but was used by them. He became a relatively intelligent slave of relatively stupid machines."[37] ("The camera dictates a particular and specific coordination of eye and hand, of intention and act, of theory and practice."[38]) With tech as pervasive, animate platform—at our fingertips, as it were—humans become occasions for button-pushing, keystrokes, and swiping gestures on assorted interfaces:

> What is immediately striking about it all is that the keys operate in a time unrelated to everyday human time, a time that follows another set of standards. For the keys move in the infinitesimal universe of particles, in the realm of the infinitely small, where time ignites like lightning. The second thing about keys is that being infinitely

> small by human standards, they can also cross over into the gigantic. One flick of the light switch crosses from the universe of electrons into the area in which man is the measure of all things. And one flick of another switch can explode a mountain or finish humanity off.[39]

In other words, our hero, the "last man on the earth of the future, the last hope of earth," is the command line itself, the spoiling word made artificial flesh.[40] His light-bright glass hand—sheathing variously miniscule blinking and whirring components, conspicuous for *the minute clicking of little wheels* associated with time—processes data, computes probabilities, and speaks instructions, using the classic question/answer interface. It "knows everything." Not incidentally, it makes it easy to find Trent when he removes a camouflaging glove in dark alleys and running around in the noir-style steampunk innards of the Bradbury making cat and mouse chase with the aliens from the future, the Kyben (low-budget special effects mark them with pantyhose caps and eyes smudged with ashen fluff). The hand is missing some fingers and carries a glitch—the human-machine rounding error, which spuriously partitions the human from the machine. Like a semiconductor, the flow of information moves in one direction only: "I don't know who I am, or where I've been, or where I'm going. Someone wiped my memories clean, and they tracked me down and tried to kill me. Why? Who are you? . . . And then the hand—my hand—told me what to do." Trent has a need-to-know relationship with his hand. It communicates bits of information as missing components are recovered and installed (fingers = upgrades), until the voice tells him . . . that he isn't human after all (= only an instrument), a time capsule containing all future humans compressed into data form.

Fittingly, this knowledge is hidden in his (synthetic) body—held back, as it happens, beyond our grasp—until the final (now spoiled) reveal. The Automaton from after the extinction event is wholly realized, but with functionality self-withheld. Even then, there remains but one last question: Where is everyone? Where are the billions of humans hiding from the future? Answer: the solenoid within Mr. Trent that "holds all knowledge" holds in suspension as "electrical impulses" on "a thin strand of gold-copper alloy wire." This message from the future termination point is akin to the Bottle City of Kandor in Superman comics. In effect, this data file makes Trent himself the technical parcel—the black box, the animate spoiler alert, the memeplex—that prematurely realizes what Flusser calls the universe of technical images, the "future society [that] synthesizes electronic images" as data.[41] Spoiler: rather than surrender the humans of the future to alien invaders, the leaders of the future spoiled it with a radioactive plague and "translated" themselves into the present on a zip file borne by an android. The spoiler effect is another fantastic, telematic chiasmus in which a maximalist quantity of ungraspable informationalism is translated into a series of minimal, miniaturized traumatic switches to be flicked, touched, tickled by gestures, which, as the hand says, is but "a commonplace means of preserving life" in the future. The latest in advanced data storage demands *knowing as little as possible*—to borrow from the boilerplate appended to so many spoiler alerts online. Click away now! The finger presses the button, but the inevitable extinction event is the real Master, the canceled future hidden all over the place in the present. "You may never get to touch the Master," writes Pynchon, "but you can tickle his creatures"—another paranoid message in a bottle, put to sea as well by Pynchon as by Vilém Flusser or Harlan Ellison.[42]

Programmed Algorithms replacing Literary Culture, what emerges is a phenomenology of technical images and miniaturized decisions, ubiquitous triggers—glitches, twitches, switches—minimal machines loaded with maximum potential energy, ready to be stupidly discharged, activated, sprung loose, when least expected. Spoiler: Chekhov's gun. What *did* you expect anyway?

The warning is, expect it everywhere—Harlan Ellison's zip-gun, for instance, which he details in his literary autobiography *Memos from Purgatory,* recounting his research among teenage

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THE DECLINE OF COMPUTERS AS A GENERAL PURPOSE TECHNOLOGY

By Neil C. Thompson and Svenja Spanuth

It is easy to forget that our computers weren't always highly-flexible systems capable of the staggering variety of computational wizardry that we take for granted today. They used to be special-purpose machines built to calculate things like ballistic trajectories or breaking codes. The rise of computers as a general purpose technology (GPT) only happened because of concurrent technical and economic breakthroughs where product improvement and market growth fueled one another.

Our research finds that technological and economic forces are now pushing computing in the opposite direction, making computer processors less general-purpose and more specialized. This process has already begun, driven by a slowing of Moore's Law and the success of algorithms like deep learning. So, what are the repercussions? The trend toward specialization threatens to fragment computing into "fast lane" applications that get powerful customized chips, and "slow lane" applications that get stuck using general-purpose chips whose progress is fading.

The rise of general-purpose computer chips had a profound impact on society; their decline could too. Our work outlines the forces already starting to fragment this GPT and what may lie ahead.

BACKGROUND

The technical and financial successes of computing are well-recognized. Bresnahan and Trajtenberg (1992) first noted the virtuous cycle of GPT, which began with expensive computers that only benefited a few, high-value applications (military, space, etc.). As computer chip manufacturers invested in innovation, however, they produced ever-better performance at lower cost, which caused more industries to adopt computers. Increased demand financed further improvements, and the virtuous cycle flourished. For computer chips, this GPT cycle has continued for decades and the resultant improvements (often, colloquially described as Moore's Law) have been transformative.

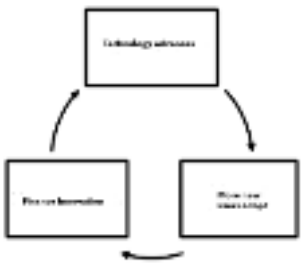

Figure 1: The virtuous cycle of computers as a general purpose technology

IN THIS BRIEF

- Technological and economic forces are making computer processors less general-purpose and more specialized. This process has already begun, driven by a slowing of Moore's Law and the success of algorithms like deep learning.
- Specialization threatens to fragment computing into "fast lane" applications that get powerful customized chips, and "slow lane" applications that get stuck using general-purpose chips whose progress is fading.
- The virtuous, general-purpose technology (GPT) cycle that has driven computing for decades is ending and is being replaced by a fragmented cycle where computing separates into specialized domains that are largely distinct and provide few benefits to each other.
- In the long term, this fragmentation could slow the overall pace of computer improvement, jeopardizing an important source of economic prosperity.

The extent to which the virtuous GPT cycle has shaped computing is hard to overstate. Since the early days of the Intel 4004 processor, there has been enormous market expansion. For example, from 2000 to 2010, the sale of personal computers (PCs) grew an average of 9% per year (Wong et al., 2017). There are now more than 2 billion PCs in use worldwide (Worldometers, 2018). This market growth has fueled ever-greater investments to improve chips.

Over the last decade, Intel spent $183 billion on R&D and new fabrication facilities[1] with enormous dividends: By one estimate, processor performance has improved about 400,000 times since 1971 (The Future of Computing, 2016). Indeed, one popular description of Moore's Law phrases this growth as hardware performance doubling every two years at constant cost.

Not surprisingly, the effect of computing on the economy has been substantial, too. Byrne, Oliner, and Sichel (2013) estimate that since 1974 information technology has been responsible for more than a third of the annual labor productivity growth in the U.S. non-farm sector.

1. Calculated as 2008-2017 R&D and additions to PPE spending.

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THE PULL OF SPECIALIZATION

Based on the compelling economics of GPTs, it might be easy to conclude that once processors became universal, they would never return to being specialized. But our research shows how the opposite can also occur. We show the forces pulling computer chips from a GPT into smaller, less-general pieces.

As Bresnahan and Trajtenberg predicted, at the end of their lifecycle GPTs can run into challenges. As progress slows, other technologies can displace the GPT in particular niches. We are observing just such a transition today as some applications move to specialized computer processors that perform fewer functions, but perform them better. Many high-profile applications are already following this trend, including Deep Learning and Bitcoin mining.

Our research illustrates how we are moving from the traditional, universal model of computer hardware--providing broad-based benefits to many--to a model where different applications use different computer hardware with uneven benefits. In the long term, this fragmentation of computing could also slow the overall pace of computer improvement, jeopardizing an important source of economic prosperity.

Specifically, we are moving away from an era when almost everyone was using a similar computing platform and improvements in that platform were widely felt. Instead, we are heading to an era where different users are on different computing platforms and many improvements are only narrowly felt. As a result, some applications will get to be in the "fast lane," where improvements continue to be rapid. Other applications will no longer get positive spill-overs from these leading domains and will be consigned to a "slow lane" of computing improvements.

Specialized processors have existed for some time. For example, in the early years of computing many supercomputers used specialized hardware such as Cray's architecture. But the attractiveness of this option diminished because universal processor performance improved exponentially. As a result, it became unattractive to invest millions of dollars to develop specialized, proprietary processor chips (Lapedus, 2017b), and universal processors dominated the market until at least the mid-2000s.

Today, advances in universal processors have slowed considerably. Whereas, chip performance-per-dollar improved 48% per year from 2000-2004, improvement has been less than 10% since 2008 (BLS, 2018). This anemic progress in general purpose chips makes specialized processors more attractive becaus their performance jump provides a long-term boost.

SEMICONDUCTOR TRENDS

Not only is universal processor performance improvement slowing, producers face rapidly escalating costs. Semiconductor manufacturing has always been a capital-intensive industry, but the costs are accelerating. Of the 25 chip manufacturers that made cutting-edge chips at the beginning of the millennium, all but three have ceased making the necessary investments to stay at the cutting-edge (Smith, 2017). This isn't surprising. It currently costs a staggering $7 billion to build a manufacturing plant (Semiconductor Industry Association, 2017) and a roughly equivalent amount to design and operationalize the production of a new generation of chips – and both of these are still increasing.

The worsening economics of chip manufacturing poses an important threat to the advancement of universal processor performance because the economic cycle of GPTs also works in reverse: if higher costs and technical challenges slow performance improvement, then market growth will slow, which makes financing the next round of improvements less attractive, which slows performance improvement, and so on.

Using a theoretical model and empirical evidence we show that this reversal is indeed under way, encouraging specialized applications, and steadily draining the market that fuels improvements in universal chips. Put another way, as the improvements in GPT slow, movement to fragmented, niche technologies accelerate.

DEEP LEARNING REAPS ADVANTAGES

The performance advantage from moving to specialized processors can be substantial. For instance, deep learning, a machine learning algorithm that can run on specialized chips for tasks such as image recognition (Russakovsky et al., 2015), is one beneficiary of the trend. Before specialized processors took hold, deep learning was not even competitive with other image recognition algorithms. In some cases today, deep learning makes fewer errors than humans when categorizing images.

Deep learning has also proven to be the superior algorithm for many natural language processing tasks, including machine reading, speech recognition (Hinton et al., 2012) and machine translation (Sutskever et al., 2014) (Jean et al., 2015). Familiar systems include the voice systems for Google Home (Marr, 2017), Apple's Siri (Levy, 2016), Amazon's Alexa (Strom, 2015), and machine translation systems such as Skype Translator (Skype, 2014) and Google translate (Turovsky, 2016). Facebook uses

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deep learning to help with picture tagging, to filter for hate-speech, and to customize advertisements to the users (Marr, 2016).
Absent faster hardware, deep learning would still be in the doldrums of its neural network ancestors (Goodfellow et al., 2016). Instead, it has proven to be transformative, infusing itself into numerous applications that we use every day.

Another major advantage of using specialized processors is energy-efficiency. This not only allows much higher performance of smartphones or Internet-of-Things (IoT) devices without immediately draining the battery, but also reduces datacenter energy costs. We find that over time, supercomputers with specialized processors are improving the number of calculations that they can perform per watt almost five times as fast as those that only use universal processors, and that this result is highly statistically significant[2].

MARKET FRAGMENTATION

Based on these advantages, transitioning to specialized processors, and thereby displacing universal processors, seems like a logical choice; but there will be tradeoffs. For some applications, technical or economic reasons will preclude the move to specialized processors, and they will get left behind. Worse, the universal processors on which they are built will be improving more slowly. So, as the virtuous cycle of universal chips is replaced by a fragmenting one, access to ever-better computers will no longer be guaranteed for all users. Instead of computing improvements being "a tide that raises all boats," they will become uneven, ranging from highly accelerated to stagnating. Key among the left-behind applications will be those whose current algorithms are ill-suited to specialization, and those with insufficient demand or fragmented application users.

Moreover, if improvements slow in one part of the cycle, so will improvements in other parts of the cycle. We call this latter cycle a fragmenting cycle because it has the potential to fragment the GPT, leaving a set of loosely related technologies advancing at different rates.
The fragmenting cycle has three parts:
- Fewer new users adopt the technology
- Financing innovation is harder
- Technology advances slow

The move to specialized processors, therefore, undermines the GPT cycle in two ways: It diminishes the number of new users adopting universal processors, and it anchors many of the switchers there so that even if processor performance were to speed up again, it would require more time and greater improvement to move those users back. [3]

Figure 2: The historical virtuous cycle of universal processers (a), is turning into a fragmentation cycle (b).

Nevertheless, we also expect consolidation only to proceed for so long. If we project current trends forward, by 2026 to 2032 (depending on market growth rates) leading-edge semiconductor manufacturing will support a single, monopolist manufacturer, and yearly fixed costs to build a single new facility for each node size will be equal to yearly industry revenue. We make this point not to argue that in late 2020s this will be the reality, but precisely to argue that current trends cannot continue and that within only about ten years (!) manufacturers will be forced to dramatically slow the release of new technology nodes and find other ways to control cost--which will further slow progress on universal processors.

Industry experts confirmed this shift toward specialized processors in the final report of the International Technology Roadmap for Semiconductors (ITRS), the group which coordinated the technology improvements needed to keep Moore's Law going. In its final report in 2015, ITRS acknowledges that "the traditional one-solution-fits-all approach of shrinking transistors should no longer determine design requirements, and instead these should be tailored to specific applications" (ITRS, 2015). This is precisely the fragmentation of the general technology that our research uncovered.

WHO WILL BE THE 'WINNERS'?

The switch to specialized processors may not be better for everyone, but it will be better for some. For problems where the is enough market demand for specialized chips and where the technical details are amenable, specialization can provide big

2. We based our regression on data from the Top 500 list. This list is released twice a year and ranks the world's 500 best supercomputers.

3. There is a subtle, but important third effect. Specialized chips are likely to have longer replacement cycles (because of the high fixed costs) and use older process technology. Both effects decrease demand for cutting-edge chips, further undermining the economics of producing new, cutting-edge chip manufacturing plants. These transition dynamics also occurred in the past, when supercomputer users slowly made their way from specialized chips to massive numbers of universal processors.

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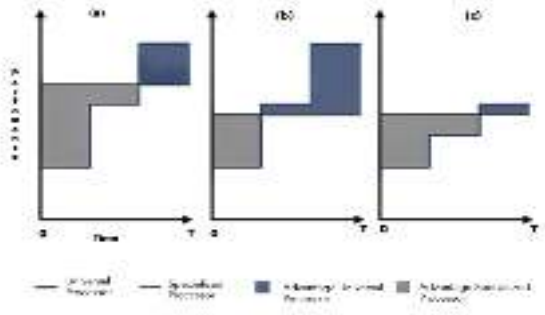
benefits. We already see this, for example, in Google's usage of Tensor Processing Units (TPUs), which are designed to do their type of deep learning very efficiently.

The types of computations that work well for specialization are those where:

- Calculations can be done with much greater amounts of parallelism,
- The computations to be done are very stable and arrive at regular intervals (called regularity),
- Few memory accesses are needed (called locality),
- Calculations can be done with fewer significant digits of precision (Hennessy & Patterson, 2017).



For calculations with these properties, specialized processors perform better because different design choices can be made than were done with universal chips. Broadly speaking, the more this changes the design of the chip, the larger the gains from switching to a specialized processor. As noted, the two main ways that these gains manifest are better performance and better energy efficiency.

Figure 3 shows how the performance gains from specialized processors can be eroded quickly (or not) depending on the pace of improvement of the universal processors. In the figure, a specialized processor is more attractive tha[4]n a universal processor when the grey shaded region is larger than the blue shaded region. Thus, a specialized processor is more attractive if it provides a larger initial gain in performance, as in panel (a), or if the gains that it provides take longer to erode because the universal processor is improving more slowly, as in panel (c). In contrast, universal processors are more attractive when their rate of improvement quickly eclipses any performance jump from specialization, as in panel (b).

On the other hand, if universal processors improve less quickly, they become less attractive and more users will want to switch to specialized chips. In this way, the move to specialized chips perpetuates itself, fragmenting the general purpose model and splitting off more and more applications.

4. The duration of time in the plot is assumed to equate the cost of the two types of processors: either a sequence of improving universal processors or a single specialized processor (that is more expensive because of higher fixed costs).

CONCLUSION

We conclude that the virtuous GPT cycle that has driven computing for decades is ending. This paper provides evidence that the GPT cycle is being replaced by a fragmented cycle where computing separates into specialized domains that are largely distinct and provide few benefits to each other. This trend will have important implications for individual users and for the economy more broadly.

For users who can profitably switch to specialized chips, there are likely to be significant gains, as we've seen with deep learning and cryptocurrency. For those who can't switch, the picture will be bleaker as universal chip progress slows and with it, much of their computing performance improvements. On a larger scale, we argue that the switch to specialization will worsen the economics of chip manufacturing, leading to slower improvements. Therefore, the move to specialized chips perpetuates itself, fragmenting the general -purpose model and splitting off more and more applications.

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REPORT

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THE DECLINE OF COMPUTERS AS A GENERAL PURPOSE TECHNOLOGY

By Neil C. Thompson and Svenja Spanuth

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1 Cluster-fuck.mp4

A robotic snowball rolls towards a polar bear to get the close up shot, a hydraulic legged dog-like with onboard on-board speakers, thermal cameras and strobe lights runs towards a group of striking workers at a lithium mine. The dog-like robot gathers thermal images and navigates the tricky terrain via lidar, scanning up to 100 metres away that it sends back to the remote operator over a 5G connection.

If the striking workers get close to the faceless dog like-robot they may be injured, bones may be broken in the hydraulic limbs of the dog or rubber bullets fired—bone breaking across 16 channels. Meanwhile the blizzard cam gathers images of two sets of cubs as they emerge from winter maternity dens, and are stranded with very little food as the sea ice breaks away—— endurance of the flesh of the world. Sweat, skills, intelligence; flesh, bones, skin, and labor; and other exploitable resources assembled as commodity through the sensing, scanning and acquisition of images. Laser robotic visions enrol the body, human or polar bear as the temporal mediator between the technical and geographic world. Animals-humans and the thickness of flesh testifying to this image-based violence.

faceless for image capture: ' back_depth ', ' back_depth_in_visual_frame ', ' back_fisheye_image ', ' frontleft_depth ', ' frontleft_depth_in_visual_frame ', ' frontleft_fisheye_image ', ' frontright_depth ', ' frontright_depth_in_visual_frame ', ' frontright_fisheye_image ', ' left_depth ', ' left_depth_in_visual_frame ', ' left_fisheye_image ', ' right_depth ', ' right_depth_in_visual_frame ', ' right_fisheye_image ' . In addition, a cute roll cage of an integrated radiometric thermal camera, pan-tilt-zoom with 30x optical zoom, a spherical camera (360 x 170° view), high-sensitivity microphone for auditory inspections. A payload looking through you.

Sensing, scanning, framing with a rotation rate of 5-20hz the rolling robotic snowball camera and the hardened awkward gait of the robot dog, mark the differing operative realities between flesh and bones and the muscular metal lines of the hardware. Inertial frames, sensor frames, object frames, body frames, become the optic and the operative technology for the production, disciplining and maintenance of population whether polar bear or human. Frames of violence.

Barcelona, June 28 2021, the chief strategy officer beckons onto the stage a robot kin of Spot. The dog like robot named Gigi named after 5G walks stiffly on four legs navigating along a two dimensional route. The chief strategy officer exclaims "I ' m happy to report that neither engineers nor robots were harmed in the process". Afterall, Gigi and Spot are animate-enough and with the absence of a face wraith-enough. Gigi and Spot sit, roll and lie down faithfully, they need to be a dog, to stay close to the idea of a dog.

The shifting and unsteady terrains of who or what can be captured and de/con/tained; and who or what is animate enough to tell a story emerges. A story in which Spot traversing military demos, gaming simulations, art shows and industry protocols actively contributes to the construction of a narrative of dominance and subjugation to all living organisms under the name of species, protection and benefit. "We intend for our robotic murder-dog to benefit humanity" and "we condemn the portrayal and use of our robotic murder-dog for the purposes of murder".

Gigi and Spot have enough signifiers to become species specific but at the same time you can dissociate it from being an animal or being your own pet. So as Spot patrols, shoots, scans and senses, you can be fine with it being a murder-dog or a border-policing dog, or an extraction-dog, or any other labours that you don't want to sympathise with...but hey even if you slip for a moment and think Spot is kinda cute..you can say well dogs have always done these roles, haven't they?

The “Just in Time” Explosion of Pagers and the New Technologies of Death – Agrarian South

by admin

By Deivison Faustino and Walter Lippold

Translated by Adilson Skalski Zabiela

Originally published in Portuguese at Boitempo’s blog

How is it possible, and what does it mean, that pagers and walkie-talkies exploded simultaneously in Lebanon? We are at one of those historical moments that can be considered a “point of no return”: widespread climate collapses, mass unemployment intensified by artificial intelligence (AI), the platformization of politics under the technical and ideological hegemony of the far right, and the frightening sophistication of death technologies. We urgently need to discuss the geopolitical dimension and the material basis of electronic and digital technologies.

Last Tuesday, the world was surprised by the news of a terrorist attack carried out by the State of Israel that injured over 2,800 people and killed twenty[1]—including Syrian and Lebanese civilians and militants of the paramilitary Islamic party Hezbollah—through the coordinated explosion of AR-924 model pagers. The devices were distributed by the organization itself to militants to avoid interception of their cell phones, something known to be possible since the mass digital surveillance revelations offered by Snowden regarding Project PRISM in 2013. There is at least one child victim: nine-year-old Fatima Abdullah, who was hit by the explosion in the village of Saraain, Lebanon[2].

The next day, while we were distracted by the illegal return of X (formerly Twitter) to the Brazilian internet, the world was again surprised by news of new fatal explosions in Lebanon, this time involving IC-V82 VHF walkie-talkies manufactured by the Japanese corporation ICOM Inc., also used by Hezbollah militants and Lebanese state authorities. There are reports of other devices, such as solar panel systems that exploded in the Lebanese organization’s bases, as well as photos of biometric identification devices[3]. What is happening? How is this possible, and what does it tell us about contemporary capitalist geopolitics and its infrastructural basis? In Digital Colonialism: For a Hacker-Fanonian Critique[4], we draw attention to the centrality of the material and infrastructural dimension of digital technologies. Without disregarding the decisive importance of the logical layers and internet applications for understanding the ongoing social transformations, we argue that the digital is also real (material) and, therefore, subject to the causal laws of physics and political economy:

> Contrary to intuition, the virtual is not the opposite of the real nor can it be confused with the digital. The digital is the storage and processing of data in computers in the form of codes representing letters, numbers, images, sounds, etc., while the virtual is a potential attribute of reality that can be grasped by the work of thought. (Faustino, Lippold, 2023)

At the same time, we try to demonstrate that, with the rapid development of digital technologies, contemporary wars have new and more effective technologies of destruction and death that allow a new repertoire of cyberattacks both on virtual environments (surveillance and espionage) and physical ones (attacks on military and nuclear facilities). We know that “the Government’s Robocop is cold, feels no pity…” (Racionais MC’s, 1997). The study of the cyborgization of war and its peak development with the introduction of drones on the battlefield is not new (Chamayou, 2015). However, the Palestinian genocide—the first genocide accompanied and ignored in “real time” via the internet—has prompted us to revisit the implications of these innovations for forms of surveillance and mass murder. More than that, it raises the suspicion that we are facing a new sociotechnical level of genocide practice, which demands attention.

The Sociotechnical Conditions of Genocide

Far from a technophobic stance but attentive to the different ways humans use technical and social means to meet certain needs, it must be recognized that in capitalism, the development of productive capacities ends up being directed more toward human self-destruction than toward satisfying needs.

From Portuguese and Spanish expropriation of Indigenous lands to the genocide of the Herero in Namibia, from the Nazi Shoah against European Jews to the current Palestinian genocide committed by the State of Israel, the development of sociotechnical means has represented an expansion of the capacity to kill. Mass murder is not possible without the existence of a massive death industry that always integrates the most sophisticated weaponry and informational technologies.

“We can begin to show the relationship between large corporations and the destruction of freedoms by looking at the Nazi period. There is consistent evidence of the decisive importance of IBM’s Hollerith punch card technology for executing the Holocaust. IBM codes were engraved on the arms of Nazi prisoners and allowed the identification, selection, and massive control of the extermination process. But the current and persistent demolition of rights is not as evident as that practiced during the Nazi period.” (Silveira, 2015, p. 12).

Some recent examples are the use of the Lavender AI in selecting Palestinian targets based on data profiling collected from digital platforms provided to the Israeli army, and the dissemination of viruses in enemy military installations. News of AI use in wars has been increasingly frequent, as have cyberattacks, and the first with great destructive potential were executed by the Stuxnet, Flame, Duqu, and Gauss viruses, used in the early 2010s to sabotage Iran’s nuclear program.

In terms of cyberweapons and electronic warfare, Israel is a technological vanguard that uses Palestine, but also Lebanon and Syria, as a nefarious laboratory to develop and showcase its latest-generation weapons. Some examples are the Scorpius electronic warfare device and the Harop drone from Israel Aerospace Industries (IAI)[5], as well as the Lavender AI—produced by Unit 8200[6]—and Pegasus, the infamous spyware negotiated by the Bolsonaro government with NSO, an Israeli company.

The ability to disseminate technology, even that considered obsolete, allows innovation in attack techniques. It is certainly an act of state terrorism that, despite all media ideology, dehumanizes the targets to revel in the efficiency of the attack. We have heard the term “surgical war” since 1991, with the invasion of Iraq and later the wars in the former Yugoslavia. These terms aim to delude public opinion into thinking that only the “bad guys” will be neutralized, within the U.S. Manichaean logic. “Project power without projecting vulnerability” (the motto of dronification and many remote attacks) (Chamayou, 2015). What we have actually seen is precisely the precision in destroying civilian lives, public facilities, and vital infrastructures in enemy territory.

But what does this have to do with pagers and walkie-talkies tearing apart militants and civilians on the streets of Lebanon? Since Snowden's revelations, it is known that cell phones are vulnerable. Mobile devices can be monitored by political agents of all kinds for data collection purposes that allow for targeted propaganda, behavior profiling, and even georeferenced location of military targets. The subversive militant who ignores this technical reality—in war contexts of high geopolitical interests—is, above all, an easy target.

Concern about this fact increased in Palestine when it was revealed that Israel was using artificial intelligence programs to select possible targets for automated military drones. The AI program scanned social networks in search of keywords considered subversive or users' contact with members of enemy political/military groups to eliminate them.

Once identified and selected, targets were tracked by facial biometrics and instant geolocation—provided by their cell phones—to then be attacked. If there was a target in a ten-story building, the entire building would be—and was—bombed. This process not only decimated tens of thousands of Palestinians in Gaza and the West Bank but also wiped these cities and their physical infrastructure off the map.

With this scenario in mind, Islamic leaders began seeking alternative means of communication. As far as is known, Hezbollah leaders prohibited their cadres from using cell phones and offered pagers and walkie-talkies as an alternative—which are still widely used in countries where access to cutting-edge informational technology is still a privilege of a few[7]. But the Islamic organization did not count on a completely unexpected factor: the possibility of Israeli intervention in the mobile devices' production chain.

The pagers and walkie-talkies exploded, injuring thousands and killing more than ten people in the first wave, fourteen in the second, leaving hundreds in critical condition with severe injuries, putting the Lebanese population in panic. Rather than a cyberattack that hacked device hardware to overheat them or batteries programmed to explode after a certain cycle, we can call it an operation of logistical infiltration for sabotage.

But How Was This Possible?

Much remains to be explained, but apparently, we are facing sabotage in the supply chain of parts and components of pagers, supposedly manufactured by Gold Apollo, from Taiwan. The company soon announced that this batch was made in Budapest, Hungary, by BAC Consulting KFT, an acronym from the name of its founder and CEO, scientist Cristiana Bársony-Arcidiacono. The Orbán government denied that the pagers were in Hungary[8] and that BAC is only a commercial intermediary[9].

Initially, it was suspected to be a cyberattack that hacked the devices' hardware to overheat them or that the batteries were programmed to explode after a certain cycle. The AR-924 pagers have a lithium battery that lasts 85 days, rechargeable via USB, so they are used not only by militants but also by civilians due to constant power outages[10]. But it's unlikely that they all discharged at the same rate for thousands of people.

The most probable scenario is that a charge of one to three grams of pentaerythritol tetranitrate (PETN) was injected into the lithium-ion battery or a component of the board at the behest of Israeli intelligence during the manufacturing process at some point in the supply chain[11]. Probably, the synchronized explosion was remotely triggered via radio signal.

This differs from the historic Stuxnet attack, recognized in 2010, where cyber technology sought kinetic effects. The target of Stuxnet, produced by the United States and Israel, was to control the digital programs of uranium enrichment centrifuges in Iran. But the plan backfired, according to the documentary Zero Days[12] (2016); the virus, with modifications made by Israel, got out of control and ended up infecting the digital logistics chains of the attacker itself, in this case, the USA.

The transition from cybernetic to kinetic is not simple. If it were, with the advancement of the Internet of Things (IoT), it would be possible for smart refrigerators, smart lamps, smart devices controlled remotely with AI to become weapons of war. Perhaps it already is if we agree that technology is war and politics by other means, but here we are not dealing with a weapon in the sense we are analyzing in this article.

It's important to remember that, although they work together, electronic warfare differs from cyber warfare. The first signs of electronic warfare were in 1899, in the Anglo-Boer War on African soil, with interference in Morse code transmission via telegraph. Later, with the use of broadcasting in the Russo-Japanese War in 1905, they began using jamming or interference in radio wave transmission, disrupting radio signals. Fanon, in Sociology of a Revolution (1959), analyzes the jamming used by French colonialists to attack broadcasts from the rebel radio "The Voice of Fighting Algeria." We can say that electronic warfare and colonialism are old acquaintances.

This type of attack, which aims to hit soldiers and militants through their equipment, killing or severely injuring them, resembles the use of so-called "spiked ammo," or explosive ammunition, which was infiltrated through the supply chains of state and non-state actors. When triggered, the ammunition explodes the weapon and the hands of the operator. Weapons like rifles, grenade launchers, and mortars are the most known for applying this type of sabotage. The spiked ammo technique was first used by the English in Africa, in the territories of present-day Zimbabwe, to hit the Matabele and Shona in 1896. Used in World War II (1939–1945), it became more known in the Vietnam War, used by the United States (Project Eldest Son), and recently in the Syrian War. The use of spiked ammo is part of what is called unconventional warfare.

The simultaneous explosion of pagers and walkie-talkies inaugurated a new stage in the capitalist necrotechnological race because it revives old electronic warfare at a new level that combines interference in the device's production chain with social and logistical engineering. This allowed the altered devices—whose components were produced in different countries—to reach the targets and explode at the desired moment. It is suspected that the bombs were triggered by a radio signal emitted by Hezbollah's own command. The connection of this signal with the explosive outcome still needs to be studied but already points to new possibilities of orchestrated deaths by the great capitalist powers.

What Lessons Can We Draw from This Event?

If in times of peace the dependence on foreign technology, within the frameworks of imperialism and digital colonialism, directly harms national sovereignty and the self-determination of peoples, now we explicitly know the threat of this dependence during war. The warlike-technological race is not limited to software but also occurs in terms of hardware. Let us not forget the most instructive phrase of Google's then leaders, Eric Schmidt and Jared Cohen: "What Lockheed Martin was to the twentieth century, technology and security companies will be to the twenty-first century" (Cf. Assange, 2015, p. 40), declaring the new geopolitical role of big techs.

Electronic warfare, cyber warfare, and these new "unconventional" attacks have their materiality, permeated by the spheres of capital production and circulation, their logical chains, and "shadow" companies that apparently barely know what subcontractors do in their name. The hardware logistics chain of electronic components requires means of production—that is,

raw materials, tools, labor, and the digital cloud that can only exist through this process. For the ethereal digital cloud to exist, it is necessary to emit steam from the cooling needed to contain the overheating of processors and boards.

Among the fantasies of our time is the denial of the ubiquity of capital and the materiality implicit in the sociometabolic mode of reproduction. According to some prominent intellectuals, the capitalist mode of production is experiencing a kind of neo-feudal regression, or techno-feudalism that profits from value through the monetization of intangibles or in circulation itself —inviting Marxists to abandon "factory thinking." However, as Terezinha Ferrari argues, the factory has not ceased to exist but has expanded, manufacturing the city and increasingly substantial fractions of private life (Faustino, Lippold, 2023).

Ferrari argues that the introduction of computerization and robotics in the capitalist production process allowed not the much-talked-about overcoming of the Fordist production line but the synchronization of social work times to enable the articulation of different productive units in a geographical context where public roads are converted into open-air production lines. Not by chance, the quintessential ideological slogan of the fabricalization of the city is the famous "Just in time" created by Toyota Motor Corporation in the 1940s and 1950s, adopted as an ideological mantra of flexible accumulation. The explosions in Lebanon and Syria, in a kind of fabricalization of war, seem to realize this mantra by inaugurating the just-in-time explosion. The event places us before the phenomenon of manipulation and social engineering of insurgency itself: Israel, with its technological vanguard in digital surveillance, along with the conditions of the Lebanese power grid, led Hezbollah and civilians to circumvent the use of cell phones, reverting to devices like pagers and walkie-talkies. To what extent all this was part of the plan, only time will tell. But the case raises the alert to the complexity of the technical and social means employed.

Notes:

[1] https://www.bbc.com/news/articles/ce9jglrnmkvo

[2] https://www.nytimes.com/2024/09/18/world/middleeast/lebanon-funeral-pager-attack.html

[3] https://www.theweek.in/news/world/2024/09/18/lebanon-panic-as-two-solar-panel-systems-explode-amidst-pager-walkie-talkie-blasts-in-beirut-targeting-hezbollah.html

[4] https://www.boitempoeditorial.com.br/produto/colonialismo-digital-152312

[5] See the website of the necrocorporation IAI. The diversification of the war arsenal in the company's catalog is impressive. https://www.iai.co.il/

[6] Intelligence division of the Israeli armed forces, similar to the NSA but military; the same that created Stuxnet.

[7] A technological innovation that recalls the Algerian sophistication against the French army, when the military engineering of the National Liberation Front of Algeria reorganized its structure so that each member would only communicate with and know a very limited number of militants (in case they were captured and tortured, they wouldn't have much information to give).

[8] https://apnews.com/article/hungarian-company-behind-lebanon-pager-explosions-9ebcca9cc9e5a7d7bc9bc74ddcf23fb3

[9] https://www.nytimes.com/2024/09/18/world/europe/pager-explosions-lebanon-what-we-know.html

[10] https://www.newindianexpress.com/world/2024/Sep/18/gold-apollo-says-pagers-that-exploded-in-lebanon-syria-were-made-by-company-in-budapest

[11] https://www.infomoney.com.br/mundo/como-filme-de-espioes-israel-teria-adulterado-pagers-para-explodir-apos-mensagem/

[12] https://www.youtube.com/watch?v=joP7Tz2sbRE&feature=youtu.be&themeRefresh=1

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For Opacity

Several years back, if I made the statement, "We demand the right to opacity," or argued in favor of this, whoever I was speaking to would exclaim indignantly: "Now it's back to barbarism! How can you communicate with what you don't understand?" But in 1989, and before very diverse audiences, when the same demand was formulated, it aroused new interest. Who knows? Maybe, in the meanwhile, the topicality of the question of differences (the right to difference) had been exhausted.

The theory of difference is invaluable. It has allowed us to struggle against the reductive thought produced, in genetics for example, by the presumption of racial excellence or superiority. Albert Jacquard (*Éloge de la différence*, Éditions du Seuil, 1978) dismantled the mechanisms of this barbaric notion and demonstrated how ridiculous it was to claim a "scientific" basis for them. (I call the reversal and exasperation of self barbaric and just as inconceivable as the cruel results of these mechanisms.) This theory has also made it possible to take in, perhaps, not their existence but at least the rightful entitlement to recognition of the minorities swarming throughout the world and the defense of their status. (I call "rightful" the escape far from any legitimacy anchored silently or resolutely in possession and conquest.)

But difference itself can still contrive to reduce things to the Transparent.

If we examine the process of "understanding" people and

ideas from the perspective of Western thought, we discover that its basis is this requirement for transparency. In order to understand and thus accept you, I have to measure your solidity with the ideal scale providing me with grounds to make comparisons and, perhaps, judgments. I have to reduce.[1]

Accepting differences does, of course, upset the hierarchy of this scale. I understand your difference, or in other words, without creating a hierarchy, I relate it to my norm. I admit you to existence, within my system. I create you afresh. —But perhaps we need to bring an end to the very notion of a scale. Displace all reduction.

Agree not merely to the right to difference but, carrying this further, agree also to the right to opacity that is not enclosure within an impenetrable autarchy but subsistence within an irreducible singularity. Opacities can coexist and converge, weaving fabrics. To understand these truly one must focus on the texture of the weave and not on the nature of its components. For the time being, perhaps, give up this old obsession with discovering what lies at the bottom of natures. There would be something great and noble about initiating such a movement, referring not to Humanity but to the exultant divergence of humanities. Thought of self and thought of other here become obsolete in their duality. Every Other is a citizen and no longer a barbarian. What is here is open, as much as this there. I would be incapable of projecting from one to the other. This-here is the weave, and it weaves no boundaries. The right to opacity would not establish autism: it would be the real foundation of Relation, in freedoms.

And now what they tell me is, "You calmly pack your poetics into these craters of opacity and claim to rise so serenely beyond the prodigiously elucidating work that the West has accomplished, but there you go talking nonstop about this West." —"And what would you rather I talk about at the beginning, if not this transparency whose aim was to reduce

us? Because, if I don't begin there, you will see me consumed with the sullen jabber of childish refusal, convulsive and powerless. This is where I start. As for my identity, I'll take care of that myself." There has to be dialogue with the West, which, moreover is contradictory in itself (usually this is the argument raised when I talk about cultures of the One); the complementary discourse of whoever wants to give-on-and-with must be added to the West. And can you not see that we are implicated in its evolution?

Merely consider the hypothesis of a Christian Europe, convinced of its legitimacy, rallied together in its reconstituted universality, having once again, therefore, transformed its forces into a "universal" value—triangulated with the technological strength of the United States and the financial sovereignty of Japan—and you will have some notion of the silence and indifference that for the next fifty years (if it is possible thus to estimate) surround the problems, the dependencies and the chaotic sufferings of the countries of the south with nothingness.

And also consider that the West itself has produced the variables to contradict its impressive trajectory every time. This is the way in which the West is not monolithic, and this is why it is surely necessary that it move toward entanglement. The real question is whether it will do so in a participatory manner or if its entanglement will be based on old impositions. And even if we should have no illusions about the realities, their facts already begin to change simply by asking this question.

The opaque is not the obscure, though it is possible for it to be so and be accepted as such. It is that which cannot be reduced, which is the most perennial guarantee of participation and confluence. We are far from the opacities of Myth or Tragedy, whose obscurity was accompanied by exclusion and whose transparency aimed at "grasping." In this version of understanding the verb *to grasp* contains the movement of

hands that grab their surroundings and bring them back to themselves. A gesture of enclosure if not appropriation. Let our understanding prefer the gesture of giving-on-and-with that opens finally on totality.

At this point I need to explain what I mean by this totality I have made so much noise about. It is the idea itself of totality, as expressed so superbly in Western thought, that is threatened with immobility. We have suggested that Relation is an open totality evolving upon itself. That means that, thought of in this manner, it is the principle of unity that we subtract from this idea. In Relation the whole is not the finality of its parts: for multiplicity in totality is totally diversity. Let us say this again, opaquely: the idea of totality alone is an obstacle to totality.

We have already articulated the poetic force. We see it as radiant—replacing the absorbing concept of unity; it is the opacity of the diverse animating the imagined transparency of Relation. The imaginary does not bear with it the coercive requirements of idea. It prefigures reality, without determining it a priori.

The thought of opacity distracts me from absolute truths whose guardian I might believe myself to be. Far from cornering me within futility and inactivity, by making me sensitive to the limits of every method, it relativizes every possibility of every action within me. Whether this consists of spreading overarching general ideas or hanging on to the concrete, the law of facts, the precision of details, or sacrificing some apparently less important thing in the name of efficacy, the thought of opacity saves me from unequivocal courses and irreversible choices.

As far as my identity is concerned, I will take care of it myself. That is, I shall not allow it to become cornered in any essence; I shall also pay attention to not mixing it into any amalgam. Rather, it does not disturb me to accept that there are places where my identity is obscure to me, and the fact that it amazes me does not mean I relinquish it. Human

behaviors are fractal in nature. If we become conscious of this and give up trying to reduce such behaviors to the obviousness of a transparency, this will, perhaps, contribute to lightening their load, as every individual begins not grasping his own motivations, taking himself apart in this manner. The rule of action (what is called ethics or else the ideal or just logical relation) would gain ground—as an obvious fact—by not being mixed into the preconceived transparency of universal models. The rule of every action, individual or community, would gain ground by perfecting itself through the experience of Relation. It is the network that expresses the ethics. Every moral doctrine is a utopia. But this morality would only become a utopia if Relation itself had sunk into an absolute excessiveness of Chaos. The wager is that Chaos is order and disorder, excessiveness with no absolute, fate and evolution.

I thus am able to conceive of the opacity of the other for me, without reproach for my opacity for him. To feel in solidarity with him or to build with him or to like what he does, it is not necessary for me to grasp him. It is not necessary to try to become the other (to become other) nor to "make" him in my image. These projects of transmutation—without metempsychosis—have resulted from the worst pretensions and the greatest of magnanimities on the part of West. They describe the fate of Victor Segalen.

The death of Segalen is not just a physiological outcome. We recall his confiding, in the last days of his life, about the slovenliness of his body, whose illness he was unable to diagnose and whose decline he was unable to control. No doubt it will be known, with a list of his symptoms and the help of medical progress, what he died of. And no doubt the people around him could say he died of some sort of generalized consumption. But I myself believe that he died of the opacity of the Other, of coming face to face with the impossibility of accomplishing the transmutation that he dreamed of.

Like every European of his day, he was marked with a substantial, even if unconscious, dose of ethnocentrism. But he was also possessed, more than any of his contemporaries, by this absolute and incomplete generosity that drove him to realize himself elsewhere. He suffered from this accursed contradiction. Unable to know that a transfer into transparency ran counter to his project and that, on the contrary, respect for mutual forms of opacity would have accomplished it, he was heroically consumed in the impossibility of being Other. Death is the outcome of the opacities, and this is why the idea of death never leaves us.

On the other hand, if an opacity is the basis for a Legitimacy, this would be the sign of its having entered into a political dimension. A formidable prospect, less dangerous perhaps than the erring ways to which so many certainties and so many clear, so-called lucid truths have led. The excesses of these political assurances would fortunately be contained by the sense not that everything is futile but that there are limits to absolute truth. How can one point out these limits without lapsing into skepticism or paralysis? How can one reconcile the hard line inherent in any politics and the questioning essential to any relation? Only by understanding that it is impossible to reduce anyone, no matter who, to a truth he would not have generated on his own. That is, within the opacity of his time and place. Plato's city is for Plato, Hegel's vision is for Hegel, the griot's town is for the griot. Nothing prohibits our seeing them in confluence, without confusing them in some magma or reducing them to each other. This same opacity is also the force that drives every community: the thing that would bring us together forever and make us permanently distinctive. Widespread consent to specific opacities is the most straightforward equivalent of nonbarbarism.

We clamor for the right to opacity for everyone.

A Reverse-Engineered Insurrection Miriyam Aouragh - American Ethnological Society

It begins, as it always does, with a lie. By tracking the virus that caused global havoc at the time, its spread could maybe be slowed down. The Tracing App – TA – was announced at that helpless and panicked moment. But for people in particular areas, without access to test kits and prevented from Intensive Care, soon enough the TA approach defeated its own purpose.

The TA was never meant to help flatten the curve for *them*. The working classes and racially mixed communities were among those designated to be sacrificed in preventing the virus from getting to others, to the more deserving. De Pijp, an old part of Amsterdam, was demarcated as a space to contain this so-called "herd." Imagine: Your role is to make sure *others* get immune, by getting ill or dying yourself. It was the pivotal insult to an immense injury.

Meanwhile, critical reports had already revealed the drama unfolding. Some scientists urged society to prepare for a possible pandemic. Some even warned that certain viruses would mutate with new microbial threats. This was ignored by politicians, many of who were on the payroll or in kinship with the military-pharmaceutical-IT corporations. As the pandemic spread, these companies were invited to special "public input" government consultations, almost salivating to sell lab and tracing tools. They were shameless; it was a gory glory. It was too much.

This was an eerie time, and in retrospect it was the point where the scale tipped. Some people thought the pandemic was *mektaab*, destiny. Many believed it was a sign of God. Some thought it was the Apocalypse. Depending on where your religious outings took you on Friday, Saturday, or Sunday, it was *Yawm al Qiyama*, Judgement Day, or Yom Kippur…

They all shared an intense hogra, a *humiliating* kind of hurt. But there was an additional force, a shared intuition that something was going to happen, shaped by that *hogra*. And a kind of courage stemmed from the sense of being expendable, of having nothing to lose. This is the backdrop to how a few years ago, a moment of incredible serendipity was born during the worst ever pandemic in living memory.

Credit: Georgie Hodges

It was a cloudy Friday afternoon, the air was charged, a collective pain and fury fused into an electric current. Due to the lockdown, people were prohibited from visiting their deceased in the care homes or hospitals. Today bodies of their loved ones were laid bare in cheap caskets by the tram tracks of the old depot-cum-mortuary. They were only allowed to see them from a distance, fenced off by a plastic shield. Some tried to get closer to get a last look, to say their goodbyes, to pray a *Fatiha*, or cite a hymn, yearning for some sort of ceremony to help them cope with the incredible loss.

A collective breath of disbelief formed an explosive rage among the thousands of people who had gathered from nearby vicinities of De Pijp. First, one united, collected breath was inhaled. Then the accumulation of this colossal, raw sorrow was exhaled in a mutual breath. It was a profoundly sad and heartfelt appeal to someone or something, a powerful act of … invocation. At that very moment, through this synchronised energy, a "thing" was released and pierced the sky. Somehow this moment became an invisible catalyst and exploded silently. Different worlds converged as this "thing" was sucked in by some magical pulse and delivered elsewhere. It may have lasted only a few moments but it was something that defied normalcy.

Their collective, pain-filled plea was delivered and then received in another universe. In all honesty, those recipients regarded planet earth as the most uninspiring – not to mention stupidly self-destructive – among all the worlds across the galaxies. But this really was another level of…unfair? They felt merciful and decided to intervene. From across the galaxy, they blew some of their power onto a bunch of youth.

At that very same moment a group of friends convened at their favourite square after escaping the police. They were also at the tram remise (depot), tearing the plastic shields and trying to break through the fences, managing to march towards the caskets of their families and friends.

They were defying both the safety measures and the ban on protests.

Assisted by the TA and covered by "Health Containment Measures," the state cracked down—*hard*—on any dissent. Everyone knew that the whole narrative around the TA was a bunch of bogus bullshit, engineered to perfect surveillance techniques. It fed the police with visuals from the CCTV cameras and drones that already decorated the buildings and skyline of De Pijp.

Before they reached the caskets, they were chased by police truncheons. They had just sat down, still breathless from the chase, frantically checking for updates on their mobile phones, when they too felt the "thing" that was thrust out in reply as a magnificent burst of *Baraka*. It passed through them as a short yet furious glint. The indescribably chaotic moment was gone in the space of three deep breaths, as their pounding hearts evened out, and returned to a steady beat. It was as if a whole catalogue of secret knowledge had leaped off from somewhere straight into their heads. First, there was a heavy silence.

W. t. a. f. … ?

Was it malaika, seraphim, spirits? A sigh had passed from that distant universe all the way to De Pijp. It was received as a vibration, a catharthic *nafs*.

Rachid, narrow-eyed, almost hissed "Kardash, what is this?" to Tayfun sitting next to him. Shirley, sucked her lips in a fine Caribbean *tsjoerie*. Fatima, clucked her tongue Amazigh style, *t'jack*, in confirmation, and boxed her. Tayfun stared Rachid wide-in-the-eyes, only able to say "Sahbi…wayaw" then, turning, looking at all of them with a demurred smile: "Yo, did you all sense that too?"

One after the other they began to see the messages a greenish typeface bleeping on their phones. For some reason, they all knew that it had to do with the TA and the core message was "reversal." It took some time to grasp it; they had to *reverse* engineer the TA in order to repurpose it. The repressive device became a resistance tool.

They began by literally renaming it Divoc-91. Those who only heard it phonetically deciphered it as difuc-91, so it quickly slipped into street vernacular as *dafuck*. So befitting of the collective state of mind.

At first, everybody was sceptical. For generations, the poor and people of color were disposed to be cynical about any change in hegemonic design. Plenty of anthropologists who flocked to De Pijp in the past years wrote about the "criminal youth" or other tedious culturalist frameworks. So why in the world would they deserve magic? As it turns out, even a sliver of hope can beat a ton of despair. Such magical powers can only be explained as a cosmic jolt. After weeks of trial and error, they managed to master it. The challenge wasn't technical; as digital natives they were attuned to that.

Like a clap of thunder, the discovery of their own agency inflamed their minds. It allowed them to rethink it *all*. The raw fury that previously weighed them down was released and replaced by ethereal dedication. They plunged into the tasks at hand.

Divoc gave them three things (and they are still discovering what else it can do), each converging interdependently, in an offline-online dialectic, with the other: Corporeal invisibility. Digital concealment. Technological reversal.

With this mother of all deceptions, they were able to enter government buildings, access the Intelligence service computers, and jest the data servers. They altered the money flows, repurposed expenditure sheets, altered corporate tax laws, syphoned money from finance capital to social budgets, and increased tax income leverage for public projects. They infiltrated police files exposing the corruption and misuse of power. They infiltrated operating systems and invisibly joined secret meetings between ministries to record their grimy sleaze, then transferred those to the independent press. They committed much more delicious joy.

Crises can underpin new radical movements. In the process, the youths transformed from "gangs" to *comrades*. From loitering nobodies – 'hangjongeren' as they were denigrated in the media – to secret cells.

The TA was supposed to be an "exit strategy" for overcoming the pandemic and reopening the capitalist markets. The youth turned it into an "entry strategy" for overthrowing those very markets.

A process of *undoing* was crucial for the resistance to survive. The best decision the group made in its primary stage: to recruit and train new cohorts on a regular basis and to invest in them with love, joy, and knowledge. "Muscles and tech without brains — muscles and tech *with* brains," Fatima had motioned with her left and then right hand the different options. Their future success would hang in the air if they didn't include an ethical baseline of the rebellion in the core of its very scheme. They needed to create social contexts for their interpretations, and moral frameworks for their choices. That meant a lot of the self-defeating crap and also sexist, ableist, ethnic sectarian nonsense had to be unlearned.

Part of the *undoing* were the educational workshops, which included creative writing. A young Surinamese-Dutch woman read her project in one of the underground classes. It was titled *An-Ta-Go-Ni-Sm*.

There is no mektaab without will
No faith without despair
No kindness without wretchedness
No pyramids without pits full of bones
No discovery without theft
No profit without exploitation
No death without life
No prose without spit

The rebellion stayed with them forever. It was like drunkenness—minus the alcohol, minus the vomit, minus the hangover. Will their newly found magical powers disappear, like a curl of smoke, and be slurped back in a jinn bottle like those stupid Ala al-dine cartoons?

But their unity and collective efforts exerted a solidarity more contagious than the virus ever was. Perhaps the deeper magic they were gifted with was the side-effect, created by the brevity of it. The insurrection was gone as quick as it came. However dazzling, it forced them to discover their own agency. Indeed, the fact that it was not only a magical, *external* force, precipitated a far more permanent rebellion. The alteration of their human and experiential gravity was the real transgression. They learned their history as they remade it, not under self-selected circumstances. Just as they revolutionized themselves, they created something that did not exist before. Pecisely at that moment of crisis, they conjured up distant spirits to their service.

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