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The Dual Use of Technology:

Concepts and Policies

John A. Alic

ABSTRACT. *Defense planners face difficult decisions. Congress and the President have to spend limited funds wisely and choose systems that are truly needed from among the alternatives put forward by advocates in the armed services and defense industries. A related set of pressures exist on the civilian side of the economy. U.S. goods cost too much to design, develop, and build. The author argues that these problems must be addressed as one. The links between the defense sectors and the rest of the economy are considered, and dual use is examined in the context of technologies. Those government policies and their possible impacts on national security are discussed that may help both defense contractors and commercial manufacturers control costs, improve technology, and shorten the time it takes to develop new products.*

No matter what the course of future East-West relations or regional conflicts will be, the U.S. defense budget will likely drift downward throughout the 1990s. At the same time, the United States will seek to maintain the world's most technologically sophisticated military force. But the U.S. will have to do so while spending less. At the same time, it must continue to rebuild the international competitiveness of its civilian industries.[1]

Defense planners face critical decisions. Congress and the President have to spend limited funds wisely and choose systems that are truly

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needed from among the alternatives put forward by advocates in the armed services and the defense industry. No longer will the U.S. be able to spend billions on platforms like the B-1B bomber, a plane that did not have a clear mission even when the Cold War was at its height. The Department of Defense (DoD) will also have to control unit production costs, which rose much more rapidly than did inflation during the 1980s.

A related set of pressures exists on the civilian side of the economy. By and large, U.S. competitiveness has slipped because U.S. goods cost too much to design, develop, and build. American goods have also fallen behind in quality — first in quality of manufacture (conformance to design specifications) and, more recently, in quality of design (functional attributes and performance). Many U.S. firms lag behind foreign competitors in introducing more flexible production systems that make rapid design changes and smaller lot sizes practical. Defense contractors and commercial manufacturers alike must control costs, continue to improve quality and reliability, and shorten the time it takes to develop new products and get them into production.

Common Problems, Common Solutions?

If, in some respects, the situation on the military side of the economy resembles that on the civilian side, to what extent might this imply a common government policy response? That is the central dual-use issue we explore. The question can be approached in several ways. One might ask, narrowly, how closely do the integrated circuits (ICs) or ball bearings found in military and civilian equipment resemble one another. Broader questions include: How does knowledge generated through DoD research and development (R&D) make its way into the civilian economy? Could greater involvement by the Pentagon in U.S. industrial and trade policies help strengthen the defense industrial base while improving civilian competitiveness?

None of these questions has a simple answer. No one knows how many commercial ICs go into military systems. Policies that might seem prudent for maintaining the defense industrial base can harm U.S. competitiveness by subsidizing inefficient sectors at the expense of more competitive industries. Other policies might benefit both national security and competitiveness: the DoD-supported R&D consortium Sematech has this intent. When it comes to policies such as export controls, there have been long-running conflicts between competitiveness and national security. Before returning to the policy issues, the next several sections will examine linkages between the defense sector and the rest of the economy.

The Military-Civilian Relationship

In two cases, military spending for R&D and procurement has had huge and lasting impacts on the U.S. economy: through the American system of manufactures in the 19th century and through development of digital computers during and after World War II.[2] Techniques developed for producing firearms in the early 19th century laid the groundwork for mass production of sewing machines and bicycles and for the automobile industry and all that followed, including suburbia and the Army's highway-building programs.[3] A little over 40 years after the first computers were put to work breaking codes and calculating artillery firing tables, there were more digital processors than people in the world.

In both mass production and development of computers and their microelectronic components, America led all rivals for several decades; in both cases, the U.S. lead can be traced directly to defense-related spending. Many other examples illustrate such impacts, although not so far-reaching, on the generation of technical knowledge and on industrial output. The motorized truck, for instance, came into its own during World War I. In 1914, American producers turned out only 25,000 trucks and buses, compared with more than half a million cars; by 1918, truck production had risen nearly 10 times. During World War I, aircraft designs also progressed rapidly. But it was the next war and its aftermath that brought high technology to the battlefield: radar and operations research, rocket propulsion, and the atomic bomb. In all these cases — the jet engine is perhaps the best example — technologies first had military applications, then spread to the civilian side of the economy.[4] Often, as was the case of nuclear power, very substantial technical developments divide initial military applications from subsequent civilian use. On the other hand, earth-orbiting satellites for military surveillance and for commercial communications differ little except in payload.

World War II thus marks a point at which the relationship between military and civilian technologies changed permanently. The scale and scope of R&D expanded dramatically, and continued to grow throughout the Cold War years. In 1953, the first year for which official figures are available, defense R&D totaled $2.5 billion; current expenditures run at $45 billion.[5] Searching for potential military advantages, even if they might develop only decades later, defense agencies supported a broad range of scientific and technical disciplines. DoD's technical requirements became ever more exacting, with the Strategic Defense Initiative (SDI) a recent and prominent example. R&D and procurement contracts have gone overwhelmingly to the electronics and aerospace industries, core technologies for postwar military systems and sectors in which the U.S. was able to establish and hold a competitive advantage into the

1970s. Diffusion of knowledge from defense to the rest of the economy was often slow and uncertain, but as long as American industry remained well ahead of the rest of the world, this made little difference. Today it does.

Dual Use as a Question of Technology

Stealthy aircraft and SDI may seem exotic, but if the perspective remains sufficiently general, nearly all technologies can be considered dual-use (i.e., having applications in both military and civilian products and systems). This is most easily seen at the level of components and subsystems, where not too dissimilar ICs can be found in guided missiles and heart pacemakers, ten-dollar watches and ten-million-dollar super-computers. At higher levels of complexity, the avionics equipment used in civilian aircraft, for purposes such as navigation, traces its ancestry to military developments. Today, fly-by-wire and active flight control, which have emerged largely from DoD requirements, have been adapted to commercial applications. DoD's C^3 (command, control, and communications) systems likewise share many technical features with civilian computer and telecommunications networks. The equipment found in manufacturing plants, such as machine tools, semiconductor fabrication equipment, and computers and software programs for tracking inventory, will be much the same whether the plant serves military markets or civilian markets or both (with mass production the primary exception). These would more accurately be considered examples of multiple-use rather than dual-use technologies.

It is then true, though not very helpful, to say that any and all technologies must be presumed to have dual-use applications, until and unless analysis shows otherwise.[6] The many studies of critical technologies generated over the past several years illustrate the point: The same categories tend to show up whether the lists comprise military or commercial applications.[7] Given the complexity of modern technology, it would take an encyclopedic effort to explore dual use through such an approach. Nor would there be much significance in the undertaking. Why then have so many groups produced lists of critical technologies? Largely in search of tools to help better manage the nation's huge investment in R&D, which is now more than $150 billion annually. But reintroducing the kind of detail found in the agency R&D budgets and planning documents that underlie these exercises would work against a goal of setting priorities.

More practical perspectives emphasize the techniques and methods used by engineers and managers: computer programs for designing ICs, mathematical models of feedback control for missile guidance or antiskid automobile braking, database management systems for

defense logistics or the insurance industry. Design, construction, and operation of powerplants and hydroelectric stations, pipelines and refineries, and airports and air traffic control systems likewise have their counterparts in the defense sector. And regardless of whether they find employment in the civilian economy or the defense sector, engineers, scientists, and managers, as well as technicians and blue-collar workers, get their training in many of the same institutions. People are the ultimate dual-use resource.

Technical Knowledge

Today, many of the chief impacts of defense spending on commercial technology development stem from improved methods of engineering analysis and design: knowledge (computer-aided software engineering techniques), rather than artifact (computer or communications systems themselves). Technical knowledge, furthermore, extends beyond the well codified results of theoretical and empirical study. It includes tacit know-how (judgment developed through experience, hunches, and heuristics), much of which remains instinctive and unexamined. This tacit dimension is associated with craft skills, the creative insights of entrepreneurs and computer designers, and experience-based organizational learning, such as that captured by learning curves in manufacturing.

The contents of the technology base are ever changing and dynamic. Knowledge flows in as a result of R&D funded and managed by government agencies, companies, universities, and other institutional actors. Procurement contracts generate know-how and circulate it. Results published in the open technical literature enter the technology base immediately. Proprietary knowledge seeps in gradually, despite the efforts of companies to hold onto it. Knowledge flows out when obsolete, or when proved wrong, and is superseded by newer results. Examples such as the development and diffusion of structural integrity technology illustrate the ways in which results of federal R&D spending diffuse.[8] These impacts do not fit the usual spinoff stereotype. Rather, knowledge becomes the common property of the technical community worldwide, conferring competitive advantage to the extent that design and development groups in particular companies, which may or may not be U.S. companies having R&D contracts from federal agencies, are able to maintain a lead in exploiting the knowledge. Establishing and holding onto such a lead demands much more of an organization than simple mastery by its employees of the relevant codified technical skills.

American companies, for example, remain well ahead of their foreign rivals in computer-aided engineering methods, many of which originated in DoD funded projects. But this lead has been of relatively little help in creating a competitive edge for U.S. industry. The reason is that most of
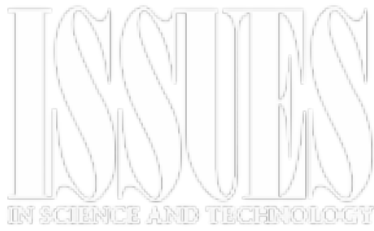
The Dual-Use Dilemma

BY JAY STOWSKY

Political pressures make it difficult to prevent defense needs from squeezing out commercial considerations.

The Clinton administration began with high hopes for its plan to forge a stronger link between military and commercial technologies. Observers inside as well as outside the administration argued that the Technology Reinvestment Project (TRP), designed to propel the development of commercial technologies critical to the military, could spur innovation throughout industry, give U.S. firms a new edge in international competition, and help ease the post-Cold War conversion of the defense industrial base to commercial production. These high expectations paved the way for rapid congressional approval of the effort. At the same time, they saddled the program with the burden of meeting objectives that it was never designed to achieve.

Approved by Congress near the end of the Bush administration (which resisted its implementation), TRP was launched by the Clinton administration in early 1993 as an experiment to improve the outcome of dual-use technology programs. (It was replaced by a new program at the beginning of fiscal 1997.) The Pentagon had begun to pursue a

dual-use investment strategy in the early 1980s, funding innovative R&D for technologies with both commercial and military applications. The strategy was based on the recognition that maintaining a separate defense industrial base is expensive and unwieldy and fails to capitalize on innovation in the commercial sector, where cutting-edge technologies most often originate. In addition, policymakers were concerned that if the United States let foreign firms take the lead in the commercial development of dual-use technologies, the Pentagon could ultimately become dependent on foreign suppliers for key military components.

The first round of dual-use programs, however, produced technologies that served only military needs. The emphasis in TRP was on developing technologies that could result in viable commercial products as well as military uses. Although its life was short, TRP's innovative programmatic features-including government-industry cost sharing and the awarding of competitive grants to industry-led teams-have earned a positive assessment. It is too soon to judge whether it has contributed in a consistently positive way to the development of viable commercial technologies.

Moreover, in satisfying the expectations of some of its proponents, the program has frustrated the hopes of others. Although TRP was created as a military-sponsored R&D program, it came to be considered the centerpiece of both the administration's technology policy and its defense conversion efforts; a burden that is simply too heavy for this program to bear. A review of TRP illustrates the political dynamics underlying the dual-use strategy and illuminates the need to disentangle the goals of technology policy and military procurement.

GREAT EXPECTATIONS

TRP was designed to escape the fate suffered by earlier dual-use initiatives, such as the Very High Speed Integrated Circuits (VHSIC) project and the Strategic Computing Program (SCP). These programs were moderately successful in developing military applications for commercial technologies that were already under development, but they did so by gravitating toward dedicated military production, even prompting manufacturers to build entirely separate production lines for the military versions of the technology. The result was to create separate trajectories for the development of commercial and military technologies.

To avoid creating new defense-dedicated industrial niches, TRP's designers set out to fund projects that would advance the general technological state of the art. Where a technology development trajectory had already been established commercially and confirmed by a pattern of private-sector investment, TRP projects were supposed to accept the market-driven trajectory, not reshape the line of technological development to achieve a particular military objective.

TRP sought to harness the power of the commercial marketplace for defense needs without distorting market forces. But it was designed to serve the military, not the commercial sector. Although the program was intended to accelerate the development of commercial technologies, its purpose in doing so was to make them available to the military more quickly and cheaply, not necessarily to improve the competitive position or performance of commercial firms.

TRP's management structure reflected its priorities. Competitions for TRP grants were conducted by the Defense Technology Coordinating Council, made up of nonmilitary people from the National Science Foundation, the Departments of Energy and Transportation, the National Aeronautics and Space Administration (NASA), and the Commerce Department's National Institute of Standards and Technology. The diversity of the council's membership was meant to enhance the program's technical expertise and to ensure that TRP managers were cognizant of recent technological developments in commercial markets and civilian federal agencies. Management and control of the program, however, was assigned to the Pentagon's Advanced Research Projects Agency (ARPA). Putting TRP under ARPA created a fundamental political imperative: TRP projects had to be justified primarily on the basis of their anticipated value for national defense. This mission was much narrower than the goals of many of TRP's early backers.

TRP was plagued from the start by the demands of disparate political factions with sometimes contradictory goals. The coalition that mobilized to support the program combined elements of U.S. business bruised by foreign competition, members of the defense research establishment concerned about growing dependence on foreign sources for military technology, and neoliberal Democrats who believed that traditional Democratic economic policies wrongly emphasized consumption and distribution over investment and growth. In addition, the labor and peace movements focused on TRP as a way to stem the loss of domestic manufacturing jobs and win a share of the evanescent "peace dividend" that the United States was supposed to reap after the end of the Cold War. Finally, various agency officials and White House staff who were charged with designing, publicizing, and implementing the program also wanted to demonstrate that a federal dual-use R&D program could actually work.

To cement support for the program, the Clinton administration packaged it as the centerpiece of the national defense conversion effort. The young administration was still reeling from the unexpected February 1993 defeat of President Clinton's modest economic stimulus package. TRP was intended to be part of the administration's strategy for addressing long-term structural problems in the economy, whereas most of the administration's other conversion initiatives emphasized short-term economic adjustment assistance of the type included in the failed stimulus package.

In the chaos of the Clinton administration's early months, however, the message was

seriously muddled. Most Americans who were aware of TRP were convinced that it was primarily aimed at solving the short-term adjustment problems created by the end of the Cold War. Although officials directly responsible for the design and implementation of TRP never saw it as a defense conversion or jobs program, administration officials reinforced this impression in speeches and public documents describing the program.

In a White House press release dated April 12, 1993, President Clinton called TRP "a key component of my conversion plan . . . [that] will play a vital role in helping defense companies adjust and compete." He added: "I've given it another name-Operation Restore Jobs-to signify its ultimate mission, to expand employment opportunities and enhance demonstrably our nation's competitiveness."

Ironically, the broad support and high hopes that TRP generated became the source of its greatest political vulnerability. Despite the program's genuine accomplishments, various constituencies became disillusioned with its failure to live up to the administration's rhetoric. Moreover, the very features that have protected the program against replicating past failures have prevented it from attracting stronger political support.

LEARNING FROM EXPERIENCE

Let's look briefly at how TRP was supposed to work.

Closing the pork barrel. To ensure that TRP awards would provide government support without dampening market signals, TRP's designers built in several valuable programmatic features:

The success of TRP's projects will depend on the extent to which DOD aggressively implements acquisition reform.

- TRP invited industry input in designing its research agenda. This ensured that TRP awards would target militarily relevant technologies that were also likely to be commercially viable. Investments were made in an array of fields to ensure that the champions of any particular technology or industry did not exercise undue influence.

- Grant applicants were required to compete in teams combining defense and commercial companies or universities and national labs. The competitions were judged according to technical and economic criteria by a panel of government experts or other independent peer reviewers. Applicants were also required to provide

For civilians or Hamas? 'Dual use' issue complicates Gaza aid efforts

By **Saleh Salem** and **Estelle Shirbon**

January 6, 2024 12:44 AM GMT+1 · Updated January 6, 2024

no poles.

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Summary

Sources in Gaza, Egypt say Israel blocking vital supplies

Israel denies this, says it facilitates humanitarian aid

Israeli inspections aim to stop items useful for Hamas

Precise list of banned items not readily available

GAZA/JERUSALEM, Jan 5 (Reuters) - Water purifiers, medical supplies and tent poles are among items Israel has blocked from entering Gaza on aid trucks, according to an Egyptian Red Crescent document seen by Reuters and sources in Gaza, but Israel denied blocking any such items.

Under a policy that long pre-dates the Oct. 7 Hamas attack on Israel and ensuing war in Gaza, Israel inspects trucks bound for the Palestinian enclave to stop any items it considers to have potential "dual use" - civilian or military.

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But the issue of which items do or don't get through has become more urgent and contested as the war has unfolded. The conflict has displaced most of Gaza's population and caused acute shortages of food, water, medicines and other basic necessities.

The Egyptian Red Crescent document, which dates back to mid-December, says 1,200 water purifiers, 100 oxygen cylinders, one oxygen generator, 1,000 solar-powered items, 24 power generators and 418 medical supplies had been blocked since the war started.

COGAT, an Israeli Defence Ministry agency that coordinates aid deliveries with the United Nations and humanitarian groups, said this was not true.

"We are not refusing anything that is underneath four headlines: food, water, medical supplies and shelters. All of those are entering every day," said Colonel Elad Goren of COGAT during a news briefing on Friday.

COGAT said 11,220 tonnes of medical supplies, including X-ray machines, CT machines and oxygen generators for hospitals had entered Gaza, as well as filters for use in a water desalination plant and mobile desalination filters.

TUNNELS

But hospital doctors in Gaza said equipment such as oxygen cylinders and x-ray machines were not getting through, even though they were desperately needed. They attributed the problem to Israeli inspections, without specifying how they knew that.

A humanitarian worker from an international aid group, who did not wish to be named due to the sensitivity of the subject, said they were aware that certain types of medical equipment, including x-ray machines, "cause problems".

Hamas, the Islamist group that has run Gaza since 2007, triggered the war when its militants invaded Israel on Oct. 7, killing 1,200 people, raping and mutilating some women and taking 240 hostages, according to Israeli authorities.

Vowing to destroy Hamas, Israel responded by bombarding, invading and blockading Gaza, killing more than 22,000 people, according to local health officials, and causing an acute humanitarian crisis of displacement, hunger and disease.

Kobi Michael, a former adviser to the Israeli government on Palestinian affairs, said it was likely that inspections had been toughened up since the start of the war, compared with the pre-war regime which had become less strict over the years.

"What I think most concerns Israeli inspectors now is what equipment might allow Hamas to extend their time in the tunnels," said Michael, who is now a senior researcher at Tel Aviv University's Institute for National Security Studies.

[1/5] Palestinian children queue as they wait to collect drinking water, amid shortages of drinking water, as the conflict between Israel and Hamas continues, in Rafah, in the southern Gaza Strip January 4, 2024. REUTERS/Saleh Salem Purchase Licensing Rights

"Israel wants to shorten this war, and that means shortening the time that Hamas can spend underground."

The Egyptian Red Crescent document was given to a group of European lawmakers during a visit to the Egyptian city of Al Arish, where aid trucks are loaded, and the Rafah crossing, where they enter Gaza. Spanish lawmaker Soraya Rodriguez later provided it to Reuters.

Rodriguez and fellow lawmaker Barry Andrews, of Ireland, said they had learnt during their visit that in some cases, though not all, tent poles were being excluded by Israeli inspectors, for reasons that were not clear.

"How would this be capable of military use?" said Andrews. "It's very difficult to understand."

TENTS WITHOUT POLES

COGAT said Israel had no policy to remove tent poles and that 13,490 tonnes of shelter supplies, including tent poles, had entered Gaza during the war in 923 trucks.

In Rafah, inside Gaza, Reuters reporters saw a pile of what looked like thick canvas tents, discarded on the floor in a corner of the Kuwait Hospital. This was because they had been

delivered without poles, according to Dr Suhaib al-Hams, chairman of the hospital's board of directors.

A Gaza social affairs ministry official said he was aware of about 150 tents arriving without poles, out of 30 trucks loaded with tents.

Ashraf Abu Sakran, a builder displaced from his home in Gaza City, said he had rejected the offer of a tent without poles. Instead, he bought some plywood and tarpaulins, and built a shelter in which he is now living with his wife and five children, one of whom is disabled, in Rafah.

"Where am I supposed to find metal poles?" he said. "We lost our house, and we can't even find a good tent."

Part of the confusion over whether certain items are being blocked by Israel on dual use grounds or are not arriving in Gaza for other reasons may arise from the absence of a public list of specific dual-use items.

Asked to provide one, COGAT referred Reuters to a document dating from 2008, available on the internet, that listed 10 categories of items, such as telecommunications, electronics, advanced materials, propulsion and information security.

An Israeli official with knowledge of this subject, who did not wish to be named, mentioned fertilizer which could be used to make explosives, iron to manufacture rockets and materials to make digging equipment as examples of dual use items.

"Beyond that, we cannot expand and risk giving terrorist groups ideas about what to do with such materials," the official said.

Additional reporting by Ibraheem Abu Mustafa, Fadi Shana and Arafat Barbakh in Gaza, Dan Williams in Jerusalem, Nidal al-Mughrabi and Nafisa Eltahir in Cairo, Suleiman Al-Khalidi in Amman, David Latona and Aislinn Laing in Madrid, Emma Farge in Geneva, Aidan Lewis in London and Padraic Halpin in Dublin; Writing by Estelle Shirbon, Editing by William Maclean
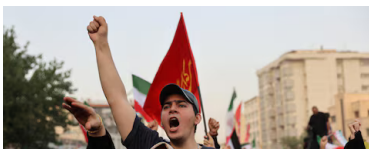
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Fact Sheet: Dual use technology - how Europe funds Israeli military companies trough Horizon 2020

EU research funds have been a very important source of funding for Israeli academics, corporations, and state institutions. Although Israel is not an EU country, since 1995 Israeli applicants have been able to access EU research funds on the same basis as EU member states through Israel's EU Association Agreement. During the last research cycle that ran from 2007-13, known as FP7, a significant share of the funds went to Israeli applicants. Indeed, of the over 200 security research projects in the FP7 funding cycle, one in five included an Israeli partner.[i]

In the Horizon 2020 program, 77 billion euros are available for research grants for the period 2013 - 2020. The research funds are strictly intended for civilian applications. No funds are supposed to be allocated for military applications.

Many Israeli applicants have already obtained Horizon 2020 funds, including Israeli military companies such as Elbit and Israeli Aerospace Industries (IAI). There have already been 162 projects in which Israeli companies have participated, with a budget of around 452.3 million euros.[ii] While the research funds have purportedly gone only to projects with civilian applications, many of the projects are of a dual-use nature, raising questions as to whether the funds are actually being used to support military applications, or will do so in the future.

What are dual use items (products, services, or technologies)?

Dual-use items are products, including software and technology, which can be used for both civil and military purposes. They are basic or generic products or technologies which can have both civilian and military applications. Examples include: unmanned systems (such as drones), robotics, nano-electronics, information and communication technologies (ICT), sensors, energy storage, photonics, 3D printing, and biometrics.

Is the funding of dual-use items permitted in Horizon 2020?

Horizon 2020 permits the funding of dual-use items, as long as the research is "fully motivated by, and limited to, civil applications."[iii]   The funding restrictions are not directed to the actors, nor the subject matter, but on the *applications* of the research. Thus for example, *an actor* such as a military company can receive funds for a program on *a subject matter* such as explosives, as long as the research being funded has strictly civilian *applications* (for example, explosives used in the construction of civilian-sector highway tunnels).

What if funding is found to have gone – intentionally or unintentionally -- towards military applications?

The Horizon 2020 guidelines do warn against potential misuse of research, and recommend taking precautions (such as appointing an independent ethics advisor or an ethics board) to guard against unintended consequences of

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research. If funding guidelines have been violated, the recipients may be in breach of their obligations under the Grant Agreement, and may have their funding curtailed or terminated.

What constitutes civil as opposed to military applications?

Horizon 2020 guidelines do not appear to have a clear definition of "civil" beyond that it is non-military. "Civil applications" appears to include many security-related areas (such as domestic policing, border patrol, airport security, cyber security, etc.). Military companies are increasingly orienting themselves away from conventional wars against external enemies, and towards internal conflicts against their own people, or to use Jeff Halper's phrase, "wars against the people." Even when directed towards external enemies, warfare is increasingly using forms such as "counter-terrorism" operations, which deploy many of these security technologies.

How is Horizon 2020 being used to support military projects?

While the Horizon 2020 guidelines profess to have an exclusive focus on civil applications, the European Commission is actively helping military companies and institutions to get around this, for instance by working with the European Defense Agency (EDA) to "find synergies" between Horizon 2020 and the EDA's research activities.[iv]   A guidebook issued by the European Commission in 2014, *EU Funding for Dual Use*, recommends ways military companies can develop dual use products and technologies. The guidebook outlines two ways of doing this.[v] One is through an in-house process, through which the military companies themselves apply for funds for projects with civilian applications. Afterwards, the company can adapt the product for military use.[vi]

Alternatively, some form of outsourcing process may be used (licensing, joint venture, spin-offs, start-ups, or inter-firm collaboration). For example, a small start-up firm can develop a project with a civilian-application, and then 'exit' the market by selling to a larger military company. The military company can later engage in "product adaptation" and make military use of the technology. In this way, military companies may save on the costs of developing the technology in-house by letting small and medium-sized enterprises develop the technologies (with help of Horizon 2020 funds). Some military companies have even created venture funds to help small start-ups develop technologies for later use by the larger military company.[vii]

The 2014 European Commission guidebook outlines a variety of ways in which governments can help companies make use of dual-use to diversify their products from one sphere (civilian) to the other (military). It suggests that public authorities can provide indirect support with: intelligence observatories (collecting intelligence about products and technologies); technology and knowledge transfers, outsourcing, spin-offs and joint venture creation; matchmaking events (fairs connecting firms and buyers); diversification (helping firms enter new markets); establishing dual-use business incubators (helping entrepreneurs turn their ideas into commercial companies); technology showcases and networking activities; and establishing dual-use clusters (bringing together companies in one geographic location).

In addition, the guidebook provides an overview of various EU funding programs that companies can access, including Horizon 2020. It recommends that to access Horizon 2020, applicants "should limit themselves to basic technologies that could then be adapted to defense applications."[xviii]

Why is the misuse of dual-use particularly concerning?

Israel has been in the forefront of the development of military technologies (such as drones), which it uses in its occupation of the West Bank and Gaza, as well as its recurring wars on Gaza. Israel's actions have repeatedly been found to be in violation of international law and UN Resolutions, and condemned by most of the international community. So why then is the EU supporting Israel by providing it access to EU public research programs funded by EU taxpayers?

In short, the EU presents a public face of claiming not to fund projects with military applications through the Horizon 2020 program, yet behind the scenes it proceeds in doing so, particularly by encouraging companies to develop dual use products and technologies that can later be adapted for the military sector.
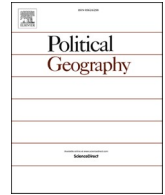
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Viewpoint

Duality and dual use in Israel's war on Gaza

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Israel has developed a political technology of "dual use" that blurs military and non-military worlds to legitimise its war on Gaza. In this militarised vision of Gaza and Gazans, everything can be targeted or prohibited, everyone is culpable and killable. Hospitals are military stores, construction materials are bomb components, and civilians are combatants. Almost nothing exists outside of this logic, and thus almost everything is destroyable, from people and their homes to the medicines and food that sustain life. This has been the case since the beginning of the 2007 siege and has intensified as part of the military assaults that have followed the 7 October Hamas attacks. Dual use, we contend, is crucial to understanding Israel's belligerence and impunity in Gaza.

In this viewpoint we begin at the historical origins of dual use and its standing in international humanitarian law (IHL) before focusing on Israel's deployment of duality in its broader colonial project and in Gaza specifically. We do so with a conviction that a lens of dual use and duality enables a clearer understanding of Israel's military violence in Gaza. The Israeli military is not engaged in *openly* total war; rather, the undeniably present effects of total war are masked by a recurrent claim of dual use and thus of legitimacy. Israel's insistence on dual use, in turn, goes some way to understanding the continued reluctance of Israel's allies – its sources of political and military support – to effectively condemn the war on Gaza. Via duality and dual use, Gaza is made targetable in a way that maintains a façade of legitimacy for the mainly performative humanitarian concerns of onlooking states, thus enabling the terrible violence against Palestinians to continue.

The modern origins of dual use can be traced to the industrialisation of warfare during the late 19th and early 20th Centuries. The development of industrial methods to produce ammonia and stable chlorine isotopes during the First World War, for example, revolutionised agriculture and public sanitation but were also put to military use in Britain, France, and Germany's nascent chemical weapons programmes (Fitzgerald, 2008). During the Second World War, there were all manner of "cross-over" technologies developed that transformed post-war civilian life: penicillin, flu vaccines, blood transfusions, radar, jet engines, and so forth. In the Cold War period, huge amounts of public spending and research resources were dedicated to works with significant dual-use value such as the US interstate highway system, GPS navigation, and computational technologies (Barnes, 2008; Masco, 2006; Kaplan et al., 2013). Without the motivation of war, we would not have innovations like radiotherapy treatment, public sanitations systems, or mass transportation and communications. This is, of course, not to celebrate the generative qualities of militarism but to set in relief that objects and ideas have long crossed boundaries between civilian and military domains (Cowen, 2012).

In military history, the First Gulf War marks a shift in the ways that dual use infrastructure comes to prominence in strategic and justifying logics. During its intensive bombing of Iraq, the US military targeted key infrastructure, including transportation routes and the electricity grid. The rationale was that while transportation and electricity were needed to support everyday civilian life – from running hospitals and schools to domestic and industrial uses – they also fulfilled the dual role of serving Saddam Hussein's army (Crawford, 1997). The legality and morality of this dual use strategy is, tellingly, subject to extensive debate among scholars, a debate that in important ways deflects from the important fact that the US attacks on infrastructure visited significant injury and death on the Iraqi population (Jochnick & Normand, 1994). Its legacy is pronounced even today in the long-term effects on mental and physical health in Iraq (see e.g., Dewachi, 2017; Griffiths, 2022). This legacy also extends spatially beyond Iraq in the way that the targeting of infrastructure laid the foundations of subsequent forms of infrastructural warfare in Gaza and other places (see Jones, 2020).

In terms of IHL – the body of law that governs conduct in war – the "principle of distinction" holds that "parties to the conflict shall at all times distinguish between the civilian population and combatants and between civilian objects and military objectives and accordingly shall direct their operations only against military objectives" (International Committee of the Red Cross, 1977a). IHL also provides a definition of military objectives in relation to objects: "Military objectives are limited to those objects which by their nature, location, purpose or use make an effective contribution to military action and whose total or partial destruction … offers a definite military advantage" (International Committee of the Red Cross, 1977b). Two points are important here.

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First, the very acknowledgment and notion of dual-*ness* blurs any distinction between civilian and military object, shifting accent from binarism (either/or) to dualism (potentially both). Second, once a notion of dualism is called forth, it becomes possible – and permissible – to *unmake* civilian objects or, rather, to *remake* them as military objects.

Israel has mobilised the logic of duality in its restrictions on the movement of goods into Gaza for almost two decades. After its 2005 "disengagement" in Gaza and the 2006 election of Hamas, Israel imposed a siege from 2007, controlling all entry points into the territory and banning the import of "dual use" objects from 2008. The dual use list is subject to a large amount of conjecture since the Coordinator of Government Activities in the Territories (COGAT), the administrative arm of the military that exercises Israel's control of Gaza (and the West Bank), continually change rules and the contents of the list, often leaving businesses and humanitarian organisations guessing as to what might be permitted or prohibited. Building materials, including cement, have been restricted, as have cancer medications, agricultural machinery, and fishing equipment, each with the rationale that these items have an inherent civilian use, but that they can also be used for military purposes (Gisha Legal Center for Freedom of Movement, 2022). If the claims of dual-use potential of such items seems spurious, then COGAT's abuse of a duality rationale is obvious in the banning of (among many other things) A4 paper, sewing machines, canned fruit, children's toys, and even coriander. In short, and without labouring the point, dual use has been instrumental in Israel's infamous and cruel policy, to paraphrase the widely quoted words of Israeli government adviser Dov Weisglass of putting Palestinians in Gaza on a diet without making them die of hunger (see Urquhart, 2006).

Aside this bureaucratic instrumentalisation, dual use has become increasingly prominent in the logic of Israeli military operations in Gaza over recent decades. In 2002, the Israeli military struck a variety of "dual-use" targets across Palestine – including the Ministry of Education, Ministry of Civil Affairs, the Palestinian Legislative Council, the Central Bureau of Statistics, and the al-Bireh Municipal Library. During "Operation Cast Lead" in 2009, Israel's definition of a legitimate target was widened further to include hospitals and schools that the military suspects are used for shielding Hamas personnel or for storing military equipment. From this point, IHL protection of hospitals, in particular, is weakened, raising the horrifying prospect of the infliction of injury alongside the diminishment of capacities and resources to respond (see Jones, 2023). Five years later, when Israel embarked on the bombardment known as "Operation Protective Edge", the Israeli military announced a new and deeply controversial category of military objective termed "power targets" (or "*matarot otzem*") that deployed an accentuated logic of dual use whereby significant civilian objects – often high-rise buildings – are authorised for destruction based on exaggerated or spurious military rationale. During the last days of the 51-day bombardment, Israel targeted several residential multi-story buildings in Gaza City and a high-rise in Rafah, displacing more than 100 families (Al Jazeera, 2014). The Israeli military explained at the time that the attacks were intended to convey to the Palestinians of Gaza that "*nothing is immune anymore*" (Abraham, 2023).

The war on Gaza since 7 October is marked by this logic *in extremis*. Politicians and military officials state repeatedly that "*Hamas is everywhere in Gaza*", with the corollary "So if you want to find a way to turn a high-rise into a target, you will be able to do so" (see Abraham, 2023). This is not only a candid but also an incriminating explication of Israel's current military approach that has resulted in the razing of almost all residential, educational, and health buildings in Gaza, as well as destruction of all utilities infrastructure. Why was a university bombed? Because of Hamas. Why were apartments flattened? Hamas. Why are hospitals all but inoperational? It is all because, apparently, Hamas shields itself and its weapons within civilian infrastructure (for a critique of the logic of human shielding, see Gordon & Perugini, 2020). The problem – and, in Israeli military eyes, *opportunity* – is that since Hamas is the government—a *legislative body elected by civilians*, albeit by less

than half of eligible voters almost 20 years ago—*everything* can be construed as Hamas. The Israeli war machine takes advantage of this dubious generalisation to visit widespread destruction on the largely defenceless and demonstrably vulnerable civilian population. Its genocidal acts of war, in short, are premised on a constant call to duality and dual use.

During the siege of Al-Shifa hospital, the largest medical facility in Gaza, in November 2023 and again in March 2024, hundreds and likely thousands of Palestinians were killed, and many others were denied treatment. Israel's justifying rationale was that Hamas was running military operations via a network of tunnels underneath the site (*The Washington Post* later reported "no immediate evidence of military use by Hamas" at Al-Shifa; Loveluck et al., 2023). When military forces have targeted facilities belonging to the United Nations Relief and Works Agency (UNWRA), a lifeline for Palestinians in Gaza, Israeli officials make the so-far unsubstantiated claim that the agency employs known and active "militants" that were involved in the 7 October attacks (see Borger, 2024). The same instrumentally propagated claim that all Palestinians are Hamas plays out when the Israeli military bombs large apartment blocks and the families housed within them (Graham-Harrison and Q Kierszenbaum, 2024). In many ways, this is the ultimate rendering of duality, the point where *all* civilians become targetable, and the ground is set for genocidal war. This is the point we are at now, and it rests heavily on a political technology that enables convenient movement between military and non-military worlds.

Lest we be misunderstood, it is not our position that Israel should identify "legitimate" targets that more closely fit with a more "humane" vision of IHL. There is no legitimacy for a technologically advanced, over-funded colonial army operating in a pronouncedly asymmetric setting. Our move here, rather, is to begin building explicatory frameworks that help our understandings of Israel's war on Gaza, especially in terms of intensity and impunity. Aside from the horror and revulsion of the last nine months is the question of how the Israeli military is allowed to continue such intense violence with barely any punitive measures. Many factors coalesce in response: European colonial legacies, the capitalist reproduction of the military-industrial complex, Western Orientalism, United States diplomatic protection, and a general post-9/11 apathy towards Arab (and especially Palestinian) suffering (see Agha et al., 2024). When it comes to understanding how these broad historical and material trajectories touch the ground, how they translate into the ruination of lives and livelihoods, the notion of dual use exposes the detailed mechanisms of Israel's military violence in Gaza. From here, the challenge is to develop a critical and praxis-orientated discourse that holds the colonial state to account for its manipulation of duality to fulfil its vengeful designs on the people and land of Gaza.

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8
IMPERIALISM AND DISORGANIC DEVELOPMENT IN THE SILICON AGE*

One epoch does not lead tidily into another. Each epoch carries with it a burden of the past – an idea perhaps, a set of values, even bits and pieces of an outmoded economic and political system. And the longer and more durable the previous epoch the more halting is the emergence of the new.

The classic centre–periphery relationship as represented by British colonialism – and the inter-imperialist rivalries of that period – had come to an end with the Second World War. A new colonialism was emerging with its centre of gravity in the United States of America; a new economic order was being fashioned at Bretton Woods. Capital, labour, trade were to be unshackled of their past inhibitions – and the world opened up to accumulation on a scale more massive than ever before. The instruments of that expansion – the General Agreement on Tariffs and Trade, the International Monetary Fund and the World Bank – were ready to go into operation.¹ Even so, it took the capitalist nations of Western Europe, Japan and the United States some twenty-five years to rid themselves of the old notions of national boundaries and 'lift the siege against multinational enterprises so that they might be permitted to get on with the unfinished business of developing the world economy' (Rockefeller). The Trilateral Commission was its acknowledgement.

Britain, hung up in its colonial past, was to lag further behind. It continued, long after the war, to seek fresh profit from an old

relationship – most notably through the continued exploitation of colonial labour, but this time at the centre. So that when the rest of Europe, particularly Germany, was reconstructing its industries and infrastructure with a judicious mix of capital and labour (importing labour as and when required), Britain, with easy access to cheap black labour and easy profit from racial exploitation, resorted to labour-intensive production. And it was in the nature of that colonial relationship that the immigrants should have come as settlers and not as labourers on contract.

The history of British immigration legislation including the present calls for reparation is the history of Britain's attempt to reverse the colonial trend and to catch up with Europe and the new world order.

That order, having gone through a number of overlapping phases since the war, now begins to emerge with distinctive features. These, on the one hand, reflect changes in the international division of labour and of production, involving the movement of capital to labour (from centre to periphery) which in turn involves the movement of labour as between the differing peripheries. On the other hand, they foreshadow a new industrial revolution based on microelectronics – and a new imperialism, accelerating the 'disorganic' development of the periphery. And it is to these new developments in capitalist imperialism that I want to address myself, moving between centre and periphery – and between peripheries – as the investigation takes me, bearing in mind that these are merely notes for further study.

The early post-war phase of this development need not detain us here, except to note that the industrialisation undertaken by the newly independent countries of Asia and Africa (Latin America had begun to industrialise between the wars) put them further in hock to foreign capital, impoverished their agriculture and gave rise to a new bourgeoisie and a bureaucratic elite.² The name of the game was import substitution, its end the favourable balance of trade, its economic expression state capitalism, its political raison d'ère bourgeois nationalism. Not fortuitously, this period coincided with the export of labour to the centre.

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Capital and labour migration

By the 1960s, however, the tendency of labour to move to capital was beginning to be reversed. The post-war reconstruction of Europe was over, manufacturing industries showed declining profit margins and capital was looking outside for expansion. The increasing subordination of Third World economies to multinational corporations made accessible a cheap and plentiful supply of labour in the periphery, in Asia in particular. Advances in technology – in transport, communications, information and data processing and organisation – rendered geographical distances irrelevant and made possible the movement of plant to labour, while ensuring centralised control of production. More importantly, technological development had further fragmented the labour process, so that the most unskilled worker could now perform the most complex operations.

For its part, the periphery, having failed to take off into independent and self-sustained growth through import substitution,[3] turned to embrace export-oriented industrialisation – the manufacture of textiles, transistors, leather goods, household appliances and numerous consumer items. But capital had first to be assured that it could avail itself of tax incentives, repatriate its profits, obtain low-priced factory sites and, not least, be provided with a labour force that was as docile and undemanding as it was cheap and plentiful. Authoritarian regimes, often set up by American intervention, provided those assurances – the Free Trade Zones provided their viability.[4]

The pattern of imperialist exploitation was changing – and with it, the international division of production and of labour. The centre no longer supplied the manufactured goods and the periphery the raw materials. Instead the former provided the plant and the know-how while the latter supplied primary products and manufactures.

The parameters of that new economic order are best expressed in the purpose and philosophy of the Trilateral Commission. Founded in 1973, under the sponsorship of David Rockefeller of the Chase Manhattan Bank, the Commission brought together

representatives of the world's most powerful banks, corporations, communications conglomerates, and international organisations plus top politicians and a few 'free' trade unions and trade union federations (from North America, Europe and Japan) to reconcile the contradictions of transnational capital, while at the same time checking 'the efforts of national governments to seize for their own countries a disproportionate share of the benefits generated by foreign direct investment'.[5] As Richard Falk puts it: 'The vistas of the Trilateral Commission can be understood as the ideological perspective representing the transnational outlook of the multinational corporation' which 'seeks to subordinate territorial politics to non-territorial economic goals'.[6]

And for the purpose of that subordination, it was necessary to distinguish between the differing peripheries: the oil-producing countries and the 'newly industrialising' countries, and the under-developed countries proper (which the Commission terms the 'Fourth World').

The implications of this new imperial ordinance for labour migration – not, as before, between centre and periphery but as between the peripheries themselves – are profound, the consequences for these countries devastating. The oil-rich Gulf states, for instance, have sucked in whole sections of the working population, skilled and semi-skilled, of South Asia, leaving vast holes in the labour structure of these countries. Moratuwa, a coastal town in Sri Lanka, once boasted some of the finest carpenters in the world. Today there are none – they are all in Kuwait or in Muscat or Abu Dhabi. And there are no welders, masons, electricians, plumbers, mechanics – all gone. And the doctors, teachers, engineers – they have been long gone – in the first wave of post-war migration to Britain, Canada, USA, Australia, in the second to Nigeria, Zambia, Ghana. Today Sri Lanka, which had the first free health service in the Third World and some of the finest physicians and surgeons, imports its doctors from Marcos' Philippines. What that must do to the Filipino people is another matter, but all that we are left with in Sri Lanka is a plentiful supply of unemployed labour, which is now being herded into the colony within the neo-colony, the Free Trade Zone.

The first countries to industrialise in South East Asia were Taiwan in the 1950s and, in the 1960s, South Korea, Singapore and Hong Kong. Taiwan and South Korea were basically offshore operations of the USA and Japan – and, by virtue of their strategic importance to America, were able to develop heavy industry (ship-building, steel, vehicles) and chemicals in addition to the usual manufacture of textiles, shoes, electrical goods, etc. And by the middle of the 1970s, these two countries had gone over from being producers of primary products to producers of manufactured goods. Singapore's industrialisation includes ship repair (Singapore is the fourth largest port in the world) and the construction industry. Hong Kong, the closest thing to a 'free economy', is shaped by the world market.

What all these countries could offer multinational capital, apart from a 'favourable climate of investment' (repatriation of profit, tax holidays, etc.), was authoritarian regimes with a tough line on dissidence in the workforce and a basic infrastructure of power and communications. What they did not have was a great pool of unemployed workers. That was provided by the neighbouring countries.

Hong Kong uses all the migrant labour available in the region, including workers from mainland China, and is currently negotiating with the Philippines government for the import of Filipino labour. South Korea's shortage of labour, by the very nature of its development, has been in the area of skilled workers. But it is Singapore which is the major employer of contract labour – from Malaysia mostly (40 per cent of the industrial workforce) and also from Indonesia, the Philippines and Thailand – and that under the most horrendous conditions. For apart from the usual strictures on *Gastarbeiters* that we are familiar with in Europe, such as no right of settlement, no right to change jobs without permission and deportation if jobless, Singapore also forbids these workers to marry, except after five years, on the showing of a 'clean record', and then with the permission of the government – and that on signing a bond that both partners will agree to be sterilised after the second child is born. Lee Kuan Yew, with a nod to Hitler, justifies the policy on the ground that 'a

multiple replacement rate right at the bottom' leads to 'a gradual lowering of the general quality of the population'.[7] Their working conditions too are insanitary and dangerous and makeshift shacks on worksites (like the bidonvilles) provide their only housing.

And yet the plight of the indigenous workers of these countries is not much better. The economic miracle is not for them. Their lives contrast glaringly with the luxury apartments, automobiles and swinging discos of the rich. To buy a coffee and sandwich on a thoroughfare of Singapore costs a day's wage, in South Korea 12- and 13-year-old girls work 18 hours a day, 7 days a week, for £12 a month, and Hong Kong is notorious for its exploitation of child labour.[8]

How long the repressive regimes of these countries can hold down their workforce on behalf of international capital is a moot point – but multinationals do not wait to find out. They do not stay in one place. They gather their surplus while they may and move on to new pastures their miracles to perform.

The candidates for the new expropriation were Indonesia, Thailand, Malaysia and the Philippines whose economies were primarily based on agriculture and on extractive industries such as mining and timber. Like the first group of countries they too could boast of authoritarian regimes – ordained by the White House, fashioned by the Pentagon and installed by the CIA – which could pave the way for international capital. Additionally, they were able to provide the cheap indigenous labour which the other group had lacked – and the Free Trade Zones to go with it. What they did not have, though, was a developed infrastructure.

Multinationals had already moved into these countries by the 1970s and some industrialisation was already under way. What accelerated that movement, however, was the tilt to cheap labour, as against a developed infrastructure, brought about by revolutionary changes in the production process.

To that revolution, variously described as the new industrial revolution, the third industrial revolution and the post-industrial age, I now turn – not so much to look at labour migration as labour polarisation – between the periphery and the centre, and within the centre itself, and its social and political implications in both.

Capital and labour in the silicon age

What has caused the new industrial revolution and brought about a qualitative leap in the level of the productive forces is the silicon chip or, more accurately, the computer-on-a-chip, known as the microprocessor. (You have already seen them at work in your digital watch and your pocket calculator.)

The ancestry of the microprocessor need not concern us here, except to note that it derives from the electronic transistor, invented by American scientists in 1947 – which in turn led to the semi-conductor industry in 1952–3 and in 1963, to the integrated circuit industry. Integrated circuits meant that various electronic elements such as transistors, resistors, diodes, etc. could all be combined on the tiny chip of semi-conductor silicon, 'which in the form of sand is the world's most common element next to oxygen'.[9] But if industrially the new technology has been in existence for sixteen years, it is only in the last five that it has really taken off. The periodisation of its development is important because it is not unconnected with the post-war changes in the international division of production and of labour and the corresponding movements and operations of the multinational corporations.

The microprocessor is to the new industrial revolution what steam and electricity was to the old – except that where steam and electric power replaced human muscle, microelectronics replaces the brain. That, quite simply, is the measure of its achievement. Consequently, there is virtually no field in manufacturing, the utilities, the service industries or commerce that is not affected by the new technology. Microprocessors are already in use in the control of power stations, textile mills, telephone-switching systems, office-heating and typesetting as well as in repetitive and mechanical tasks such as spraying, welding, etc. in the car industry. Fiat, for instance, has a television commercial which boasts that its cars are 'designed by computers, silenced by lasers and hand-built by robots' – to the strains of Figaro's aria (from Rossini). Volkswagen designs and sells its own robots for spot welding and handling body panels between presses. Robots, besides, can be re-programmed for different tasks more easily than personnel can be

re-trained. And because microprocessors can be re-programmed, automated assembly techniques could be introduced into areas hitherto immune to automation, such as batch production (which incidentally constitutes 70 per cent of the production in British manufacturing.) From this has grown the idea of linking together a group of machines to form an unmanned manufacturing system, which could produce anything from diesel engines to machine tools and even aeroengines. And 'once the design of the unmanned factory has been standardised, entire factories could be produced on a production line based on a standard design'.[10] The Japanese are close to achieving the 'universal factory'.

A few examples from other areas of life will give you some idea of the pervasiveness of microelectronics. In the retail trade, for instance, the electronic cash register, in addition to performing its normal chores, monitors the stock level by keeping tabs on what has been sold at all the terminals and relays that information to computers in the warehouse which then automatically move the necessary stocks to the shop. A further line-up between computerised check-outs at stores and computerised bank accounts will soon do away with cash transactions, directly debiting the customer's account and crediting the store's. Other refinements such as keeping a check on the speed and efficiency of employees have also grown out of such computerisation – in Denmark, for instance (but it has been resisted by the workers).

There are chips in everything you buy – cookers, washing machines, toasters, vacuum cleaners, clocks, toys, sewing machines, motor vehicles – replacing standard parts and facilitating repair: you take out one chip and put in another. One silicon chip in an electronic sewing machine for example replaces 350 standard parts.

But it is in the service sector, particularly in the matter of producing, handling, storing and transmitting information, that silicon technology has had its greatest impact. Up to now automation has not seriously affected office work which, while accounting for 75 per cent of the costs in this sector (and about half the operating costs of corporations), is also the least productive, thereby depressing the overall rate of productivity. One of the

chief reasons for this is that office work is divided into several tasks (typing, filing, processing, retrieving, transmitting and so forth) which are really inter-connected. The new technology not only automates these tasks but integrates them. For example, the word processor, consisting of a keyboard, a visual display unit, a storage memory unit and a print-out, enables one typist to do the work of four while at the same time reducing the skill she needs. Different visual display units (VDUs) can then be linked to the company's mainframe computer, to other computers within the company (via computer network systems) and even to those in other countries through satellite communication – all of which makes possible the electronic mail and the electronic funds transfer (EFT) which would dispense with cash completely.

What this link-up between the office, the computer and telecommunications means is the 'convergence' of previously separate industries. 'Convergence' is defined by the Butler Cox Foundation as 'the process by which these three industries are coming to depend on a single technology. They are becoming, to all intents and purposes, three branches of a single industry'.[11] But 'convergence' to you and me spells the convergence of corporations, horizontal (and vertical) integration, monopoly. A 'convergence' of Bell Telephones and IBM computers would take over the world's communication facilities. (Whether the anti-trust laws in America have already been bent to enable such a development I do not know, but it is only a matter of time.)

Underscoring the attributes and applications of the micropro-cessor is the speed of its advance and the continuing reduction in its costs. Sir Ieuan Maddock, Secretary of the British Association for the Advancement of Science, estimates that 'in terms of the gates it can contain, the performance of a single chip has increased ten thousandfold in a period of 15 years'. And of its falling cost, he says, 'the price of each unit of performance has reduced one hundred thousandfold since the early 1960s'.[12]

'These are not just marginal effects,' continues Sir Ieuan, 'to be absorbed in a few per cent change in the economic indicators – they are deep and widespread and collectively signal a fundamental and irreversible change in the way the industrialised societies will

live... Changes of such magnitude and speed have never been experienced before.'[13]

I am not arguing here against technology. Anything that improves the lot of mankind is to be welcomed. But in capitalist society such improvement redounds to the few at cost to the many. That cost has been heavy for the working class in the centre and heavier for the masses in the periphery. What the new industrial revolution predicates is the further degradation of work where, as Braverman so brilliantly predicted, thought itself is eliminated from the labour process,[14] 'the centralised ownership of the means of production, a culture of reified leisure to mediate discontent and a political system incorporating the state, the multinationals, the trade unions, the bureaucracy and the media, backed by the forces of 'law and order' with microelectronic surveillance at their command. For in as much as liberal democracy was the political expression of the old industrial revolution, the corporate state is the necessary expression of the new. The qualitative leap in the productive forces, ensnared in capitalist economics, demands such an expression. Or, to put it differently, the contradiction between the heightened centralisation in the ownership of the means of production – made possible not only by the enormous increase in the level of productivity but also by the technological nature of that increase – and the social nature of production (however attenuated) can no longer be mediated by liberal democracy but by corporatism, with an accompanying corporate culture, and state surveillance to go with it.

But nowhere is there in the British literature with the exception of the CIS report,[15] any hint of a suggestion that the new industrial revolution, like the old, has taken off on the backs of the workers in the peripheries – that it is they who will provide the 'living dole' for the unemployed of the West. For, the chip, produced in the pleasant environs of 'Silicon Valley' in California, has its circuitry assembly in the toxic factories of Asia. Or, as a Conservative Political Centre publication puts it, 'while the manufacture of the chips requires expensive equipment in a dust-free, air-conditioned environment, little capital is necessary to assemble them profitably

into saleable devices. And it is the assembly that creates both the wealth and the jobs.'[16]

Initially the industry went to Mexico, but Asia was soon considered the cheaper. (Besides 'Santa Clara was only a telex away'.) And even within Asia the moves were to cheaper and cheaper areas: from Hong Kong, Taiwan, South Korea and Singapore in the 1960s, to Malaysia in 1972, Thailand in 1973, the Philippines and Indonesia in 1974 and soon to Sri Lanka. 'The manager of a plant in Malaysia explained how profitable these moves had been: "one worker working one hour produces enough to pay the wages of 10 workers working one shift plus all the costs of materials and transport".'[17]

But the moves the industry makes are not just from country to country but from one batch of workers to another within the country itself. For, the nature of the work – the bonding under a microscope of tiny hair-thin wires to circuit boards on wafers of silicon chip half the size of a fingernail – shortens working life. 'After 3 or 4 years of peering through a microscope,' reports Rachael Grossman, 'a worker's vision begins to blur so that she can no longer meet the production quota.'[18] But if the microscope does not get her ('grandma where are your glasses' is how electronic workers over 25 are greeted in Hong Kong), the bonding chemicals do.[19] And why 'her'? Because they are invariably women. For, as a Malaysian brochure has it, 'the manual dexterity of the oriental female is famous the world over. Her hands are small and she works fast with extreme care. Who, therefore, could be better qualified by nature and inheritance to contribute to the efficiency of a bench assembly production line than the oriental girl?'[20]

To make such intense exploitation palatable, however, the multinationals offer the women a global culture – beauty contests, fashion shows, cosmetic displays and disco dancing – which in turn enhances the market for consumer goods and western beauty products. Tourism reinforces the culture and reinforces prostitution (with package sex tours for Japanese businessmen), drug selling, child labour. For the woman thrown out of work on the assembly line at an early age, the wage earner for the

whole extended family, prostitution is often the only form of livelihood left.[21]

A global culture then, to go with a global economy, serviced by a global office the size of a walkie-talkie held in your hand[22] – a global assembly line run by global corporations that move from one pool of labour to another, discarding them when done – high technology in the centre, low technology in the peripheries – and a polarisation of the workforce within the centre itself (as between the highly skilled and unskilled or de-skilled) and as between the centre and the peripheries, with qualitatively different rates of exploitation that allow the one to feed off the other – a corporate state maintained by surveillance for the developed countries, authoritarian regimes and gun law for the developing. That is the size of the new world order.

Disorganic development

But it is not without its contradictions. Where those contradictions are sharpest, however, are where they exist in the raw – in the peripheries.[23] For what capitalist development has meant to the masses of these countries is increased poverty, the corruption of their cultures, and repressive regimes. All the GNP they amass for their country through their incessant labour leaves them poorer than before. They produce what is of no real use to them and yet cannot buy what they produce – neither use value nor exchange value – neither the old system nor the new.

And how they produce has no relation to how they used to produce. They have not grown into the one from the other. They have not emerged into capitalist production but been flung into it – into technologies and labour processes that reify them and into social relations that violate their customs and their codes. They work in the factories, in town, to support their families, their extended families, in the village – to contribute to the building of the village temple, to help get a teacher for the school, to sink a well. But the way of their working socialises them into individualism, nuclear families, consumer priorities, artefacts of capitalist culture. They are caught between two modes, two sets,

of social relations, characterised by exchange value in the one and use value in the other – and the contradiction disorients them and removes them from the centre of their being. And not just the workers, but the peasants too have not escaped the capitalist mode. What it has done is to wrench them from their social relations and their relationship with the land. Within a single life-time, they have had to exchange sons for tractors and tractors for petrochemicals. And these things too have taken them from themselves in space and in time.

And what happens to all this production, from the land and from the factories? Where does all the GNP go – except to faceless foreign exploiters in another country and a handful of rich in their own? And who are the agents but their own rulers? In sum, what capitalist development has meant to the masses of these countries is production without purpose, except to stay alive; massive immiseration accompanied by a wholesale attack on the values, relationships, gods that made such immiseration bearable; rulers who rule not for their own people but for someone else – a development that makes no sense, has no bearing on their lives, is disorganic.

To state it at another level. The economic development that capital has super-imposed on the peripheries has been unaccompanied by capitalist culture or capitalist democracy. Whereas, in the centre, the different aspects of capitalism (economic, cultural, political) have evolved gradually, organically, out of the centre's own history, in the periphery the capitalist mode of production has been grafted on to the existing cultural and political order. Peripheral capitalism is not an organised body of connected, inter-dependent parts sharing a common life – it is not an organism. What these countries exhibit, therefore, is not just 'distorted' or 'disarticulated' development (Samir Amin), but disorganic development: an economic system at odds with the cultural and political institutions of the people it exploits. The economic system, that is, is not mediated by culture or legitimated by politics, as in the centre. The base and the superstructure do not complement and reinforce each other. They are in fundamental conflict – and exploitation is naked, crude, unmediated – although softened by

artefacts of capitalist culture and capitalist homilies on human rights. And that contradiction because of capitalist penetration, runs right through the various modes of production comprising the social formation. At some point, therefore, the political system has to be extrapolated from the superstructure and made to serve as a cohesive – and coercive – force to maintain the economic order of things. The contradiction between superstructure and base now resolves into one between the political regime and the people, with culture as the expression of their resistance. And it is cultural resistance which, in Cabral's magnificent phrase, takes on 'new forms' (political, economic, armed) in order fully to contest foreign domination'.[24]

But culture in the periphery is not equally developed in all sectors of society. It differs as between the different modes of production but, again as Cabral says, it does have 'a mass character'. Similarly at the economic level, the different exploitations in the different modes confuse the formal lines of class struggle but the common denominators of political oppression make for a mass movement. Hence the revolutions in these countries are not necessarily class, socialist, revolutions – they do not begin as such anyway. They are not even nationalist revolutions as we know them. They are mass movements with national and revolutionary components – sometimes religious, sometimes secular, often both, but always against the repressive political state and its imperial backers.

OSCAR CAMILLE THIERLELIN

IS THE STATE NONBINARY?

A CALL FOR DISCUSSIONS

WELCOME, READERS, TO THIS SEMI-EDUCATIONAL COMIC

FOR CONTEXT, THIS STORY IS BASED SOMEWHERE IN EUROPE,

SOMETIME IN THE 2020's.

BUT THIS STORY IS PURELY FICTIONAL,

ANY SIMILARITIES TO REAL EVENTS ARE FULLY COINCIDENTAL
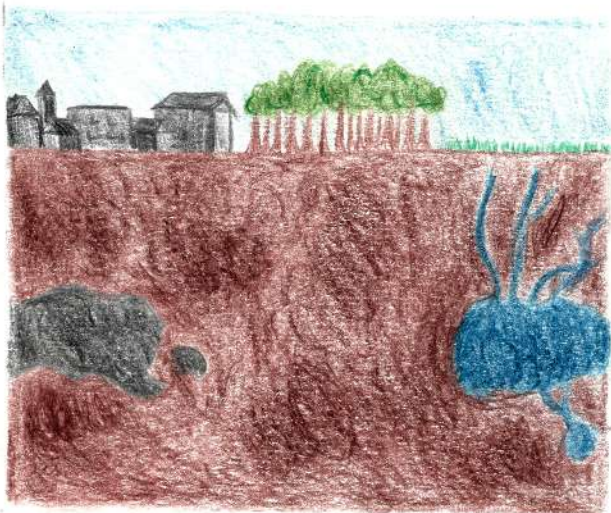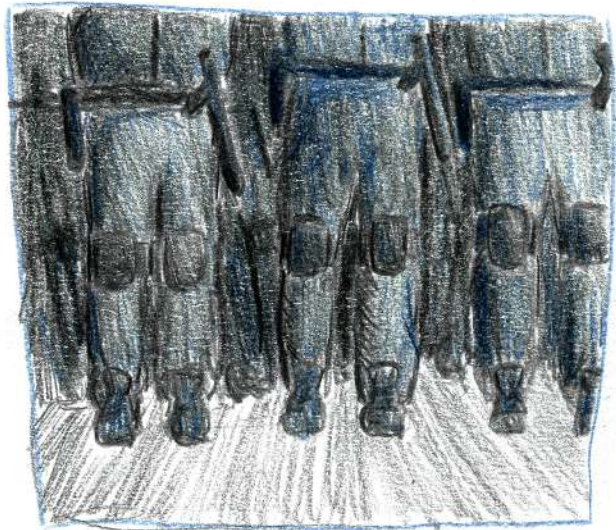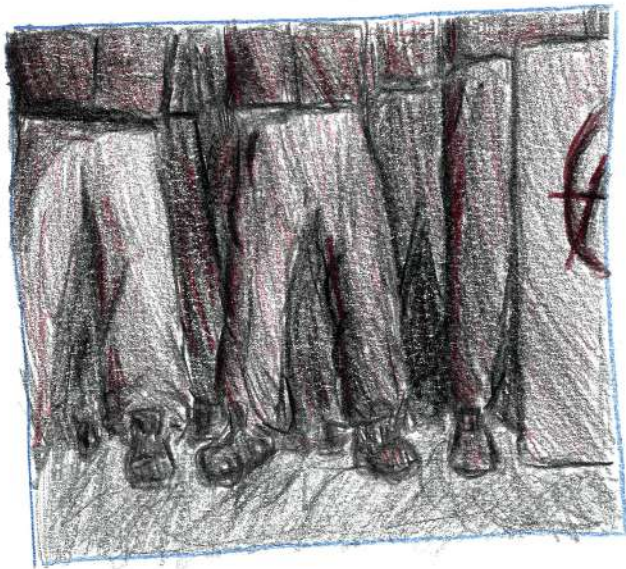
THIS STORY IS HERE MAYBE FOR EDUCATIONAL PURPOSES

BUT MAYBE IT EXISTS JUST TO PROCESS TRAUMA

THIS COMIC IS HERE TO MAKE SENSE
OF STATE VIOLENCE.
TO GO BEYOND THE SHOCK AND THE DESENSITIZATION
THAT FOLLOWS
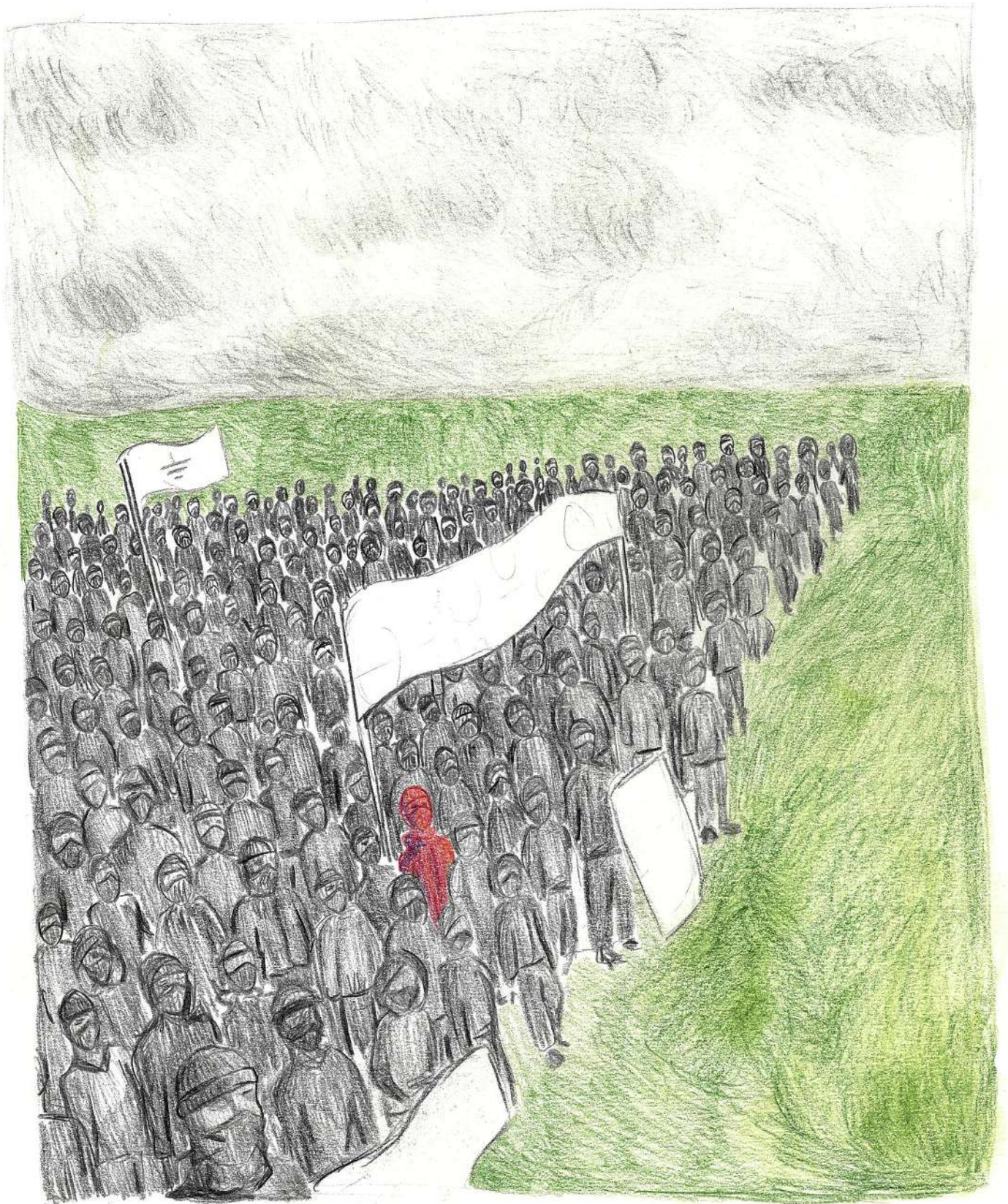
THIS COMIC IS HERE TO TRY TO UNDERSTAND WHAT THE STATE IS

AND WHAT IT MEANS FOR US STRATEGICALLY

MORE IMPORTANTLY
THIS STORY/RESEARCH
TRIES TO ANSWER THE VERY
SCIENTIFIC QUESTION:
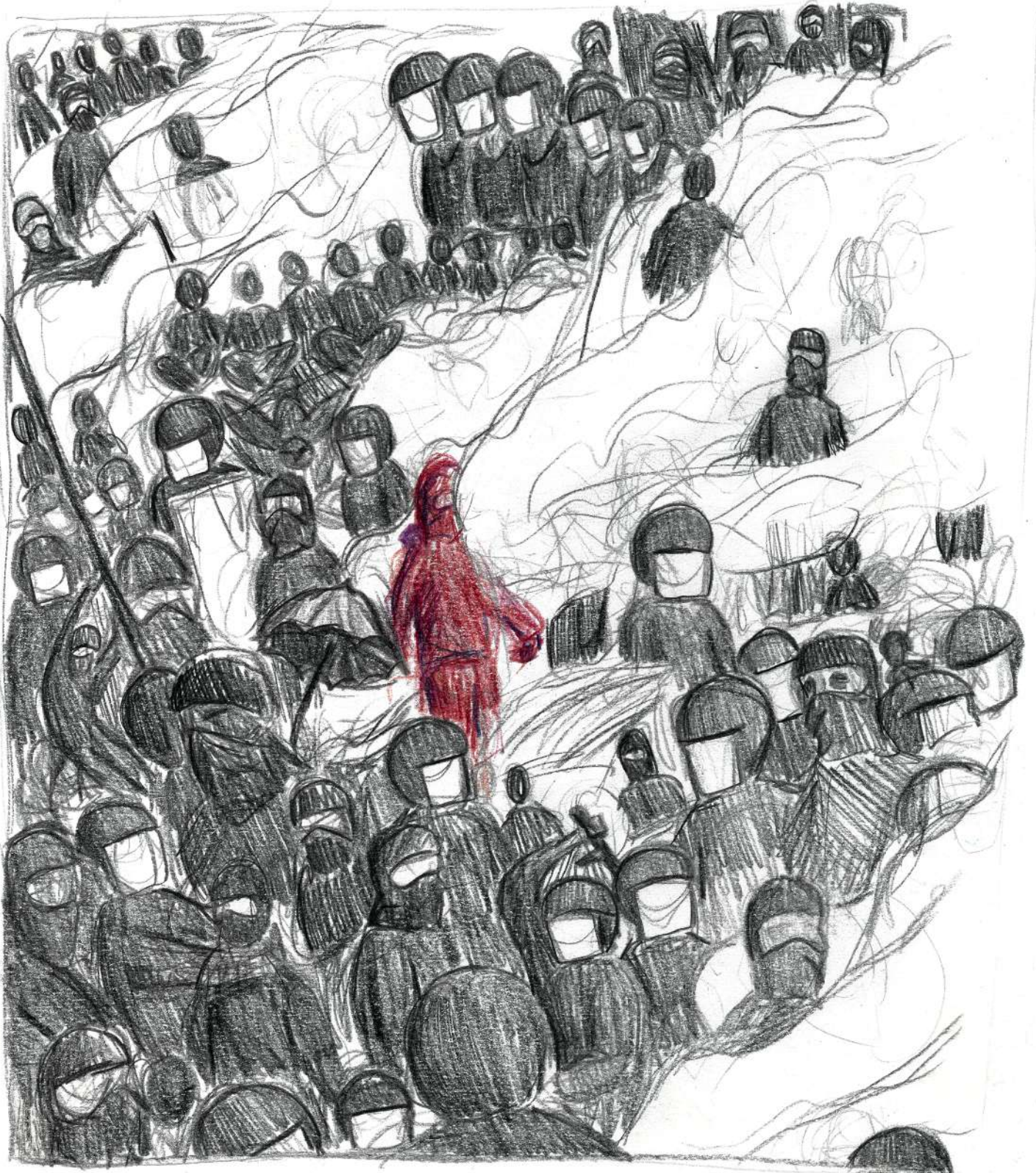
TO ANSWER THIS QUESTION, LET'S FOLLOW OUR CHARACTERS TO THE LEGAL CAMP.

LEGAL CAMP

AN EPHEMERAL UTOPIA CENTERED AROUND CARE
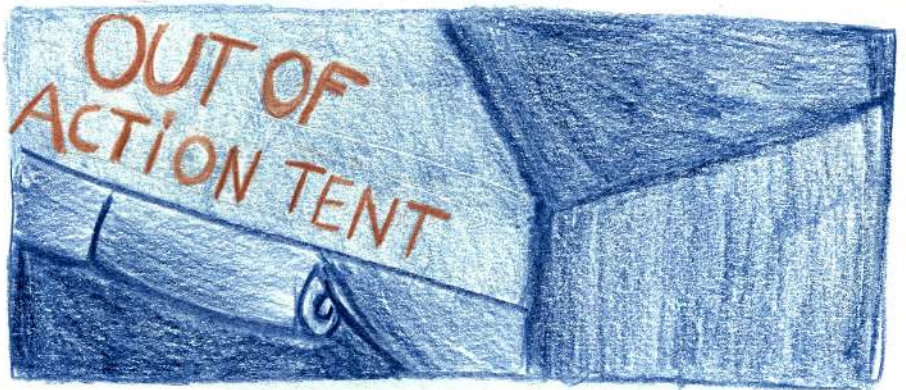
MEDIC

FREE SHOP

OUT OF ACTION TENT

ARE YOU ALRIGHT?

I'M TIRED OF THIS SHIT! I'M TIRED OF GIVING MY ENTIRE LIFE TO THIS FIGHT ONLY TO GET DESTROYED OVER AND OVER AGAIN! I'M TIRED OF FIGHTING FOR THE LIVING AGAINST FUCKING KILLING MACHINES! WE ARE FUCKING HELPLESS IT'S RIDICULOUS. THOUSANDS OF US AND STILL WE CAN'T DEFEND SHIT! WE ARE NATURE BARELY DEFENDING ITSELF AGAINST THE LITERAL MILITARY. THE STATE WILL ALWAYS PUT THE INTERESTS OF CAPITAL ABOVE ALL ELSE! VIOLENCE IS IN ITS DAMN DNA. FUCK THE STATE. VIOLENT MOB WITH ONLY OBJECTI... EXTRACTIVISM GROWTH MAT... THAN THE COMMON-GOO... OF LAW MY ASS! I'M J... BURN TIRE... WH... DSING ...POLIC...

CIVIL SOCIETY

POLITICAL SOCIETY

INTEGRAL STATE

ACCORDING TO GRAMSCI, THE STATE IS COMPOSED OF TWO SPHERES THAT ARE NOT SO DISTINGUISHABLE, HETEROGENEOUS, SPACES THAT PERMEATE EACH OTHER.

WE HAVE THE CLASIC:

POLITICAL SOCIETY → STATE INSTITUTIONS (STATE SCHOOLS, HEALH CARE, THE POLICE...)

↳ THIS CAN BE USED FOR COERCION & REPRESSION

BUT LET'S FOCUS ON **CIVIL SOCIETY** (NGO's, TRADE UNIONS, FAMILIES, THE CHURCH...) → THIS IS WHERE ELABORATION & DISSEMINATION OF IDEOLOGIES HAPPEN

I MIGHT - FALL ASLEEP

BEAR WITH ME FOR A SECOND_

HEGENONY IS THE MOST EFFECTIVE WEAPON OF THE RULING CLASS. IT REPRESENTS THE MAKING OF UNIFORM WORLD VIEWS, UNIVERSAL IDEAS THAT ARE BENEFI-TTING A FEW.

HEGEMONY
3000

COMMON SENSE
BOMB

IT LEGITIMIZES POWER RELATIONS BETWEEN THE **RULING GLASS** AND **SUB-ALTERN GROUPS** THROUGH ELICITING

CONSENT

SOOO, THIS IS A CLASS STRUGLE?

EXACTLY, IT IS THE WAY THE RULING GLASS IMPOSE INTELECTUAL DIRECTIONS

SOOO, WE'RE ALL BRAINWASHED ?

WELL... IT'S MORE SUBTLE THAN THAT BUT THEY HAVE THE MEANS TO SPREAD IDEOLOGIES

IT'S THE CREATION OF IMAGINARIES THAT BECOME IRREFUTABLE COMMON SENSE

THIS JUSTIFIES THE INEQUALITIES CREATED FOR THE BENEFIT OF THE RULING CLASS

BUT WHAT ON EARTH ARE WE GONNA DO ABOUT IT?

VERY CONVENIENT QUESTION. THANKS.

WE CAN FIGHT BACK WITH

COUNTER HEGEMONY

WE NEED TO PRODUCE COUNTER-NARRATIVES STRONG ENOUGH TO HAVE REVOLUTIONARY POTENTIAL

AND THEN THE DEBT OF THE GLOBAL SOUTH GOT CANCELLED AND WE ALL LIVED HAPPILY EVER AFTER

zzz

MY REPARATIVE JUSTICE QUEEN EATS YOUR PUNITIVE JUSTICE BISHOP

BEFORE DOING ANYTHING WE NEED TO WIN THE WAR OF POSITION. WE NEED TO TRANSMIT

ALTERNATIVE AND EMANCIPATORY

IMAGINARIES TO CREATE NEW COMMON SENSE

IS THE STATE NONBINARY? A CALL 4 DISCUSSION
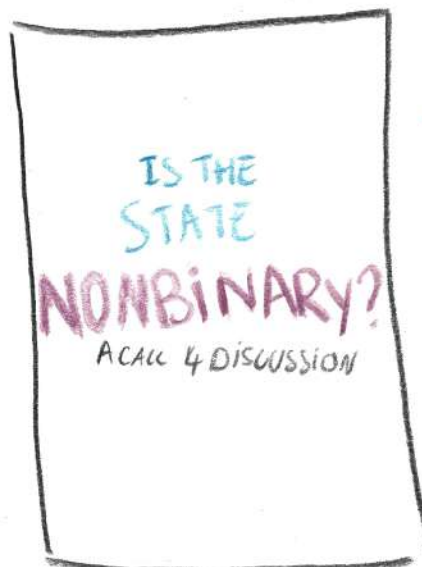
LIKE A COMIC FOR EXAMPLE?

SO META.

COLON
+ CAPIT
= CLIM

TECHNOLOGY WILL SAVE US ♥

BUT WE GOTTA BE CAREFUL WITH HOW WE DO THIS. **CAPITALISM** IS KNOWN TO MAINTAIN ITS HEGEMONIC POWER THROUGH THE INCORPORATION OF ITS CRITIQUES

PASSIVE REVOLUTION

BAMBOO ↓ TOOTHBRUSH

NO MORE FOSSIL EXTRACTION
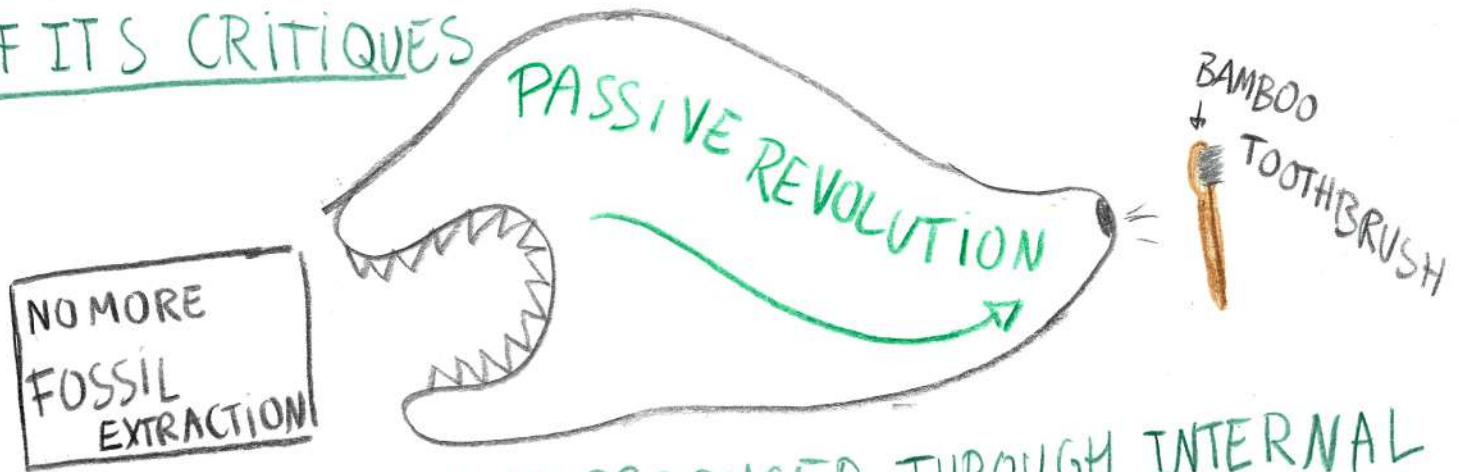
HEGEMONY IS BEING REPRODUCED THROUGH INTERNAL REFORM, DEPOLITICIZATION AND SMALL DISCURSIVE CONCESSIONS.

IS THAT THE ONLY TYPE OF CONCESSION?

GREAT TRANSITION.

HEGEMONY IS NOT JUST DISCURSIVE

IT IS ALSO (DRUM ROLL PLEASE) MATERIAL

NO WAYYYY

TO MAINTAIN ITS POWER, THE RULING CLASS GRANTS **MATERIAL CONCESSIONS** TO SUB-ALTERN GROUPS THAT DO NOT THREATEN THE CAPITAL ACCUMULATION

GROWTH IS NECESSARY TO MAINTAIN HEGEMONY

CAN WE SHARE THIS PIE BETTER?

LOL. NO. BUT WE CAN GET A BIGGER PIE!

THIS IS WHY **SOCIAL ACTORS** THAT ARE VICTIMS OF ITS DISPROPORTIONATE SOCIAL AND ENVI-RONMENTAL BURDEN STILL DESIRE/DEPEND ON **GROWTH**

COUNTER HEGEMONY NEEDS TO TAGKLE THE UNFAIR DISTRIBUTION OF RESOURCES/ECONOMIC POWER AND ENVIRONMENTAL BURDENS. CREATING **COMMONS** WILL MITIGATE THE **DEPENDENCY** ON CAPITALIST MATERIAL CONCESSIONS. THOSE SPACES ALSO HAVE THE POWER TO REPOLITICISE AND TRANSMIT **IMAGINARIES** THROUGH DIRECT EXPERIENCE

NOW, PREFIGURATIVE SPACES ARE TOO FEW AND TOO **ISOLATED** TO HAVE A BIG IMPACT.
AND ONLY A FEW HAVE ACCESS TO THIS TYPE OF ORGANISING.

COMMONS HAVE TO **EXPAND** THEY HAVE TO **GROW** EVERY-WHERE, THEY ALSO HAVE TO **CONNECT** AND **COLLABORATE** TO BECOME MORE **RESILIENT**

ZAD PARTOUT

COOPS

SOLIDAR KITCHE
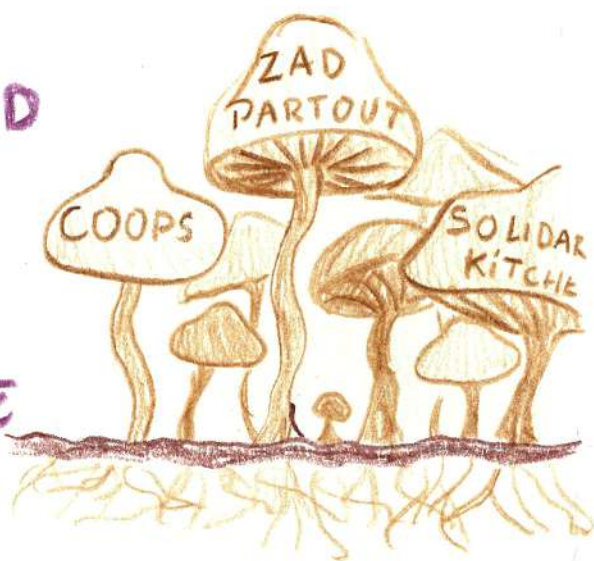
BREAKING NEWS!
THE STATE HAS BECOME
<u>IRRELEVANT</u> DUE TO
SELF-ORGANISING
)

LVI9

THE GENERAL IDEA IS THAT THIS TRANSITION IS GOING TO HAPPEN **GRADUALLY**.

COMMONS ARE ESSENTIAL BUT
I DON'T KNOW IF IT IS SUFFICIENT TO BRING A SOCIAL AND ECOLOGICAL TRANSITION
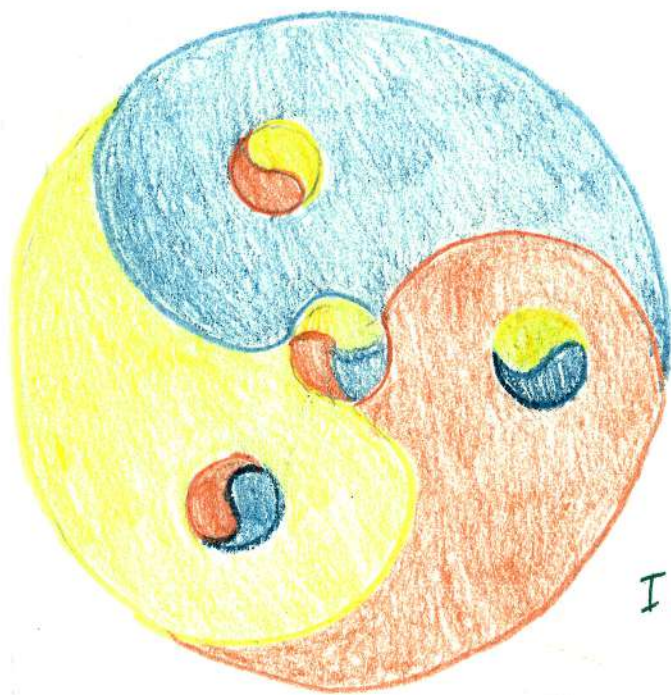
SYBIOTIC
WORK WITH THE SYSTEM

INTERSTITIAL
WORK IN THE CRACKS OF THE SYSTEM

RUPTURAL
WORK AGAINST TH SYSTEM

IS THIS THE CHROME LOGO?

NO, IT'S AN INTERPRETATION OF THE BALANCE OF STRATEGIES THEORIZED BY OLIN WRIGHT. BASICALY, WE NEED A PLURALITY OF TACTICS

SO, WITH SYMBIOTIC THINKING, WE COULD FOR EXAMPLE TAX FINANLES TO FINANCE THE ECO-SOCIAL TRANSITION?

AND THEN HAVE A UNIVERSAL WAGE FOR PEOPLE TO CONCENTRATE THEIR EFFORTS ON THE COMMONS?

TECHNICALLY YES, BUT AS WE HAVE SEEN, CURRENT INSTITUTIONS ARE ROTTEN TO THE CORE

AND WE STILL HAVE A LOT TO DO BEFORE CHANGING THEM

YEP

THIS IS WHY WE NEED

STRATEGIC ALLIANCES

IS THIS THE LOGO FOR AN INSURANCE COMPANY?

CLIMATE ACTIVISTS   PEASANT UNION

WE NEED TO BE UNITED
ACROSS THE STRUGLES
WE NEED TO GAIN LEVERAGE
ACROSS THE CIVIL SOCIETY

WE NEED TO COME TOGETHER

WITH THE ONES DISPROPORTIONALY

IMPACTED BY THE SOCIAL AND

ENVIRONMENTAL CRISIS.
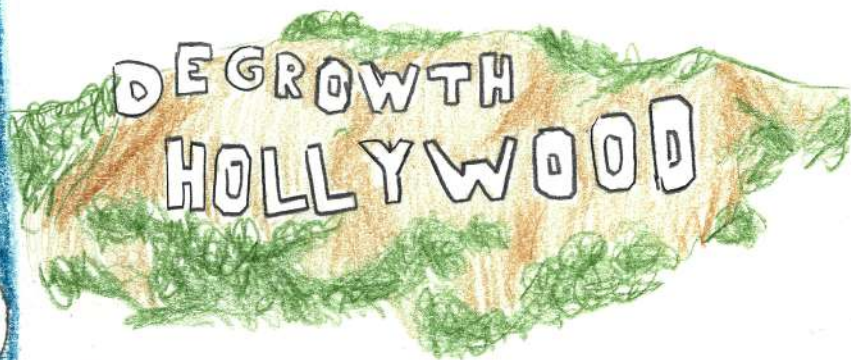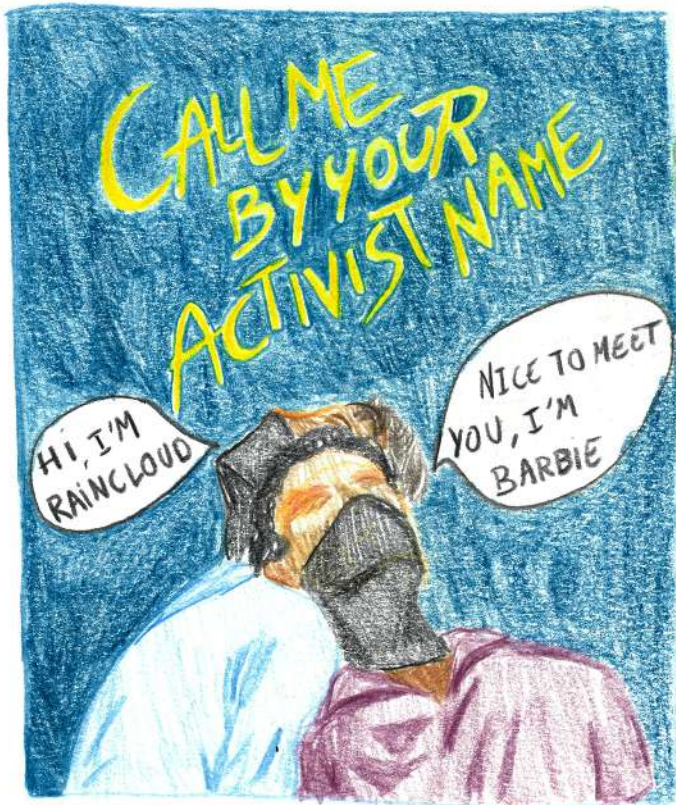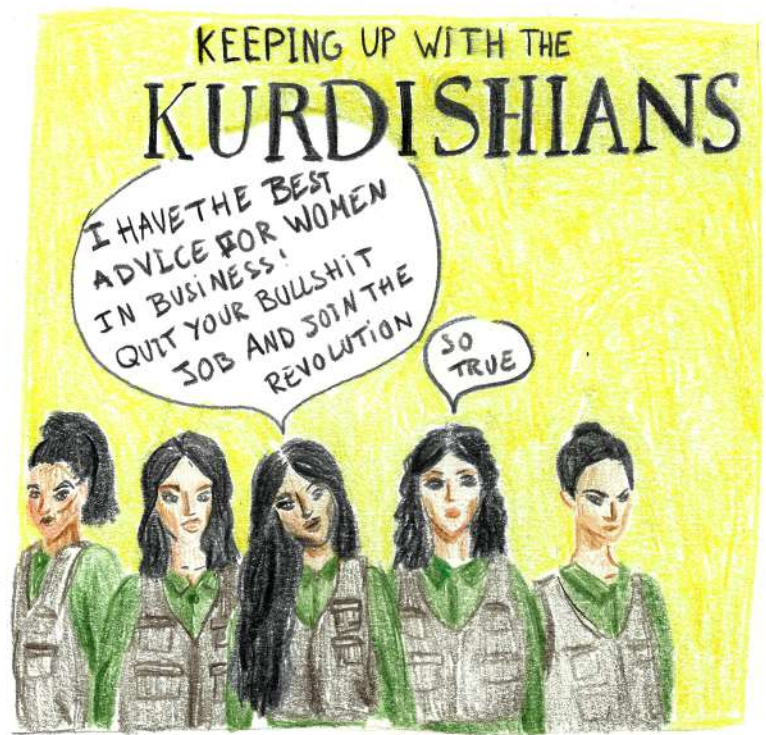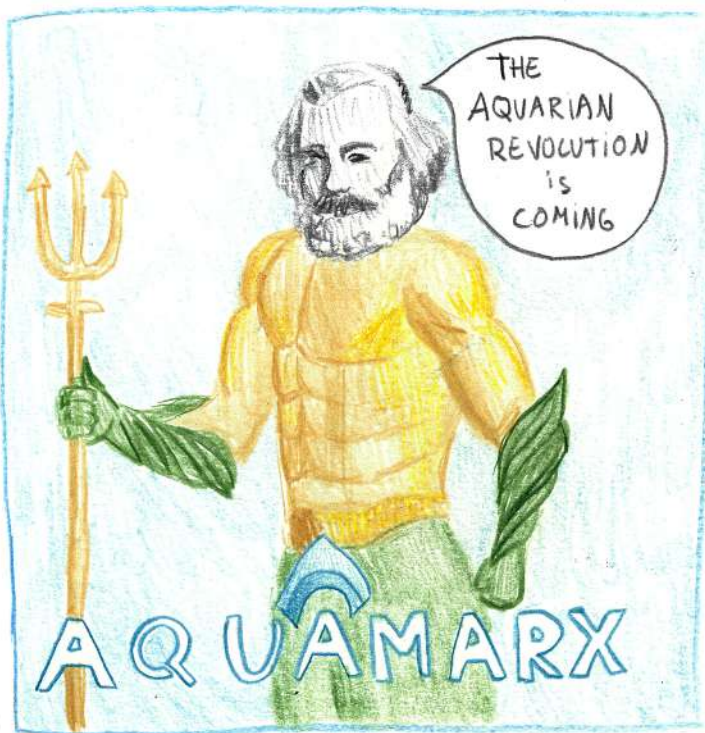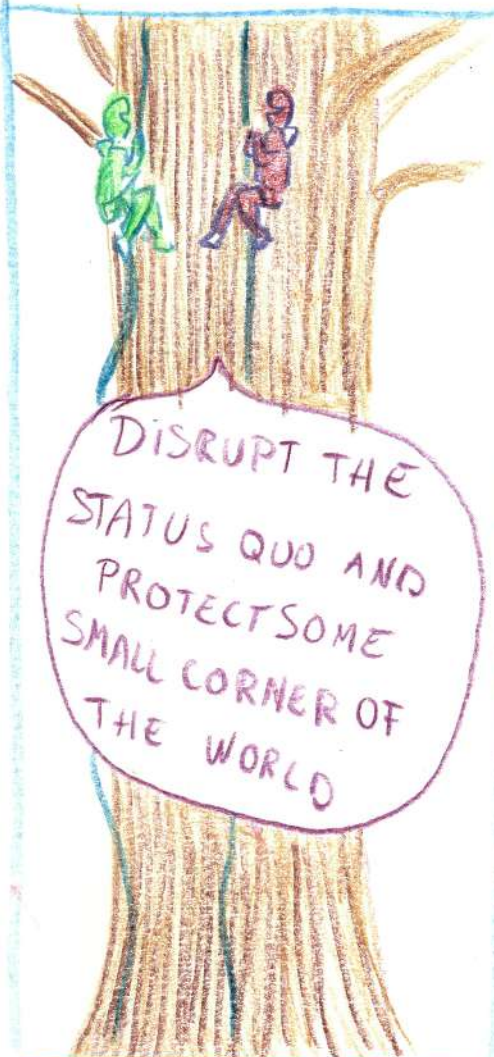
ALSO, DIRECT ACTIONS ARE BY NATURE **COUNTER HEGEMONIC** THEY CAN DISRUPT AND HIGHLIGHT POWER RELATIONS IN PLACE. THEY'RE ALSO SUPER EFFICIENT AT SPREADING **ALTERNATIVE IMAGINARIES**

I'M SORRY, ARE WE ON A TREE OR A BROCCOLI?

THE RULING CLASS IS NOT GOING TO GIVE AWAY THEIR POWER WILLINGLY. SO WE NEED **PRESSURE POINTS** CHALLENGING THE COERCIVE AND HEGEMONIC NATURE OF THE STATE.

ALWAYS GOOD TO HAVE A RADICAL FLANC.

ACABEUUUVUU

Routledge
Taylor & Francis Group
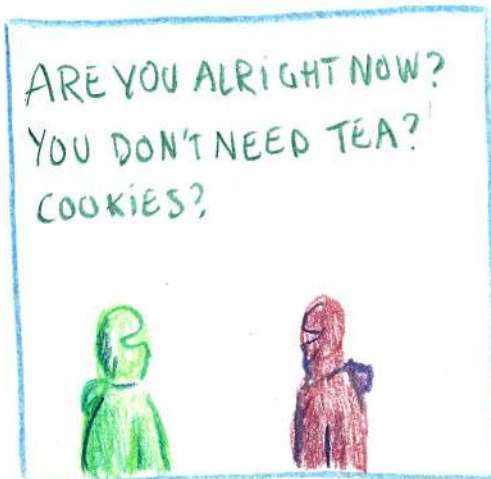
Hasbara 2.0: Israel's Public Diplomacy in the Digital Age

MIRIYAM AOURAGH

University of Westminster, London, UK

ABSTRACT *The Internet has been a counter-public space for Palestinian liberation politics for over a decade, and digital technologies have become an increasingly important tool for solidarity groups across the world. However, the Israeli state and Zionist supporters worldwide are harnessing the same technologies and platforms to mobilize technology primarily to increase pro-Israel sentiments. The aims of this article are to examine hasbara [Israeli public diplomacy] through an exploration of similar diplomacy programmes; to illustrate how social media have affected the basic algorithms of hasbara; and to probe the assertions of hasbara in the light of pro-Palestinian solidarity. Through a study of public diplomacy, this article critically analyzes hasbara as a site of contestation and a method that is hampered by contradictions. On the one hand, there has been a massive growth in hasbara in recent years—indicated by the increase in funding for it and by its professionalized and centralized character; and on the other hand, hasbara has attracted sharp critiques in Israel for its reputed failures. To understand this contradiction, hasbara must be placed within the context of Israel's settler-colonialism, which sets the state apart from other 'post-conflict' states. This article reviews the methods utilized in hasbara, as well as their readjustment in the context of recent wars. Events in 2014 illustrate that hasbara actually destabilizes Israel's diplomacy. Online journalism and the suppression of solidarity for Palestine together stimulate more criticism and, in turn, help to shift public opinion. Paradoxically, therefore, adjustments ('hasbara 2.0') have underlined the image of Israel as a colonial power engaged in violent occupation.*

KEY WORDS: *BDS; Gaza; Internet; Israel; Palestinian Liberation; Propaganda; Public diplomacy; West Bank; Zionism*

> There have been many sterling pieces researching and undermining Israel's Gaza fairy story, but even they are evidence that Israel has succeeded in setting an agenda.[1]

In the summer of 2014 Israel launched a seven-week military attack on the Gaza Strip. Over 2,000 Palestinians were killed, over 10,000 wounded, an estimated 500,000 were internally displaced, and enormous material damage led to an estimated cost of US$4 billion for reconstruction and relief.[2] However, during this military attack (called *Operation Protective*

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[1] C. Miéville (2006) The Lies that Aren't Meant to Deceive Us, *Socialist Review* (November) Issue 311. Available at http://socialistreview.org.uk/311/lies-arent-meant-deceive-us, accessed August 15, 2015.

[2] See, for instance, the detailed report, United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA 2014) Gaza Crisis Appeal: September 2014 Update. Available at http://www.ochaopt.org/documents/gaza_crisis_appeal_9_september.pdf, and a similar report at http://www.unocha.org/aggregator/sources/73?page=18, accessed August 15, 2015.

study.[40] As noted by Laura Eisenberg, this view is devoid of context, aside from the trite use of the word 'terrorist.'[41] However, Ron Schleifer maintains that the reason for Israel's weak *hasbara* is that it is *too* soft, engaging too much with the 'clean' side.[42] Elsewhere, Schleifer (2011) laments that *hasbara* is too concerned with defending itself, while it should be undermining the other—i.e., engaging in psyops rather than diplomacy—especially as Israel has far greater resources and an unrivalled security apparatus.[43] Ben Mor, in contrast, proposed that 'impression management' must be a *structural* strategy, one that goes beyond mere damage control (which Mor sees as akin to *hasbara*).[44]

We see, therefore, a unique *hasbara* coming to life based on a meticulously engineered stigmatization of Palestinians. In an attempt to conceptualize this paradox of Israeli public diplomacy I borrow from Herman and Chomsky's critique of the corporate media in *Manufacturing Consent*, with the aforementioned reservation that complete manipulation of news is complicated by the contradictions of capitalism. Going further, as the evolution of public diplomacy itself shows, manufacturing consent by unabashed self-promotion and patriotic propaganda does not fit in our times. The alternative is to construct a narrative that questions the other. I therefore take note of the absence of Palestinian concerns in mainstream media, as was pointed out in Said's *Peace and Its Discontents* (1995)—the discontented themselves are not even consulted about their appraisal of 'peace' in this mainstream media.[45] It is therefore as also important for Israel to generate *discontent* with Palestinians and their message. This results in the parallel, yet reversed, formulation of *hasbara* as representing the *manufacturing* of *discontent*. In other words, it assumes the employment of both elements (discontent-smear for the other, defend-promote the self).

Hasbara at Work: Manufacturing Discontent

Israel's formation of an informal Ministry of *Hasbara*, as part of the Foreign Ministry, in 2013, is testimony to the professionalization and intensification of *hasbara*, in terms of the amount of interventions (and subsidies) that result from it. This (policy) transformation responded to a number of key moments. Schleifer identifies one moment: the capture of two undercover Israeli agents in a police station in Ramallah in 2002. The photos of the agents' bodies being thrown out of a window (and a man holding up bloodied hands to cheering crowds) were the igniters of a pro-active *hasbara*.[46] This redirection went further under the influence of Prime Minister Benjamin Netanyahu and Foreign Minister Avigdor Lieberman, during their first coalition government.

One of the stark paradoxes that emerges from the many 'advisory' documents is that the suggested *hasbara* narratives—meant to increase pro-Israeli frameworks—are *already* close

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[40] Shalom, *The Role of U.S. Diplomacy*.

[41] See L. Z. Eisenberg (2013) Review of Shalom, Zaki. 2012. *The Role of U.S. Diplomacy in the Lead-Up to the Six-Day War: Balancing Moral Commitments and National Interests*, *Digest of Middle East Studies*, 22(1), pp. 190–193.

[42] Schleifer, Jewish and Contemporary Histories, p. 124. By 'clean' Schleifer means non-violent or within the limits of the law, which completely overlooks the violence of euphemisms used to cover-up colonial injustice. The 'apologetic Jew'—a 'weak and inferior Jewishness' with a 'Freudian longing' for acceptance—is described as lacking the wit to dispense Christian prejudice; this apparently has become a source for weak *hasbara* (p. 126).

[43] Schleifer, *Perspectives of Psychological Operations*.

[44] Mor, Public Diplomacy in Grand Strategy, p. 160.

[45] E. Said (1995) *Peace and its Discontents: Essays on Palestine in the Middle East Peace Process* (New York: Vintage Books).

[46] Schleifer *Jewish and contemporary histories of Israeli Hasbara*, p. 144

Figure 1. (a) *Holland4Israel:* Facebook; (b) Fundraising-paraphernalia in support of Israel.

to the general journalistic language. Decades of *hasbara* have nurtured and constructed a general language for, and interpretation of, Palestine/Israel. Essentially, this discourse is effective because Israel has crucial leverage with regard to powerful states (Great Britain and United States). Pro-Israel lobbies have developed into a transnational phenomenon, funded largely by transnational corporate actors, which, in turn, have incorporated them further into neoliberal and neoconservative networks.[47] Thus the successes of the pro-Israel lobby are possible, not because of remarkably talented 'Jewish lobbies' (as often and wrongly is assumed), but because they coincide with certain material interests.

   Online journalism, however, is an arena where news and opinion have become less monolithic. Coupled with particular realities on the ground, this has resulted in further contradictions. The occasional pro-Palestinian message or alternative report beyond the mainstream frameworks occur in *spite* of an internalized *hasbara* among journalists—because, overall, Western mass media already accommodate *hasbara*. As mentioned, rather than being evidence of an inherent

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[47] H. Aked, T. Mills, T. Griffin & D. Miller (2013) The UK's Pro-Israel Lobby in Context, *Open Democracy*, December 2, 2013. Available at https://www.opendemocracy.net/ourkingdom/tom-mills-hilary-aked-tom-griffin-david-miller/uk's-pro-israel-lobby-in-context, accessed August 15, 2015.

The IDC Herzliya "war room," seen in a screenshot from Ynet video, is a continuation of earlier propaganda efforts.

Figure 2. (a) IDF Twitter announcement GERvsARG hashtags; (b) Hasbara gathering as exposed by Electronic Intifada (courtesy of Ali Abunimah).

openness in mainstream media, this is as a consequence of the ideological cracks provided by a liberal (capitalist) system or dominant frameworks. Such cracks sporadically are filled with relevant information. The 'both sides' paradigm is the sort of framing that assists *hasbara* most prominently in the mainstream domain. Before discussing the transformations of *hasbara* itself, we need to consider the kind of representations of Palestine/Israel it co-designs.

'Suicide Bombers' and 'Hamas Rockets': The Politics of Red Flags

> *They answer the question, 'Did Israel kill the Ghalias?' when the question should be, 'What do we do about the fact that Israel killed the Ghalias?*[48]

The archetypical 'two-sides' narrative, according to which all sides are wrong, or the truth is somewhere in the middle, is not instinctive: The aspect of Israeli military and political force first must be disentangled in order for it to become convincing. One of the contrivances is to replace the inequality that exists in terms of material and military power with moral trepidations. This may take the form of conflating the number of rockets fired from Israeli jets and warships with the number of Palestinian handmade grenades or stones. Another common form is the comparison between calling for revenge in Palestinian propaganda videos and *actually* committing military massacres. As a result *impact* is replaced by *intent* and this itself is pathologized and divorced from *reason*. In recent years, the term 'Hamas rockets' has become code for such a narrative. These discursive accommodations, above all, have allowed journalists and analysts to forget the daily structural living conditions.

   A discomforting example occurred when, during the military attack on Gaza, a television host cut off a Palestinian guest: '*You had your chance. You didn't say Hamas is a terrorist organization. Good-bye.*'[49] Moreover, the term *Hamas rockets* is itself a continuation of the term 'suicide bombers': Such *condemnation imperatives* were prevalent in dominant media representations and academia during the Second Intifada, and led Ghassan Hage to ask,

> why it is that suicide bombing cannot be talked about without being condemned first. After all, we can sit and analyse in a cool manner the formidably violent colonial invasion without feeling that 'absolute' moral condemnation should be a precondition or even a substitute for uttering an opinion about it.[50]

Another common example of this kind of approach relates to the Palestinian 'failure' to commit to peace. The rejection of Israel's propositions—the result of the fact that this peace would bear no resemblance to justice and basically would prolong the suffering, since it would change none of the structural conditions—is rarely considered. This amounts, in a sense, to critiquing Palestinians for not accepting compromises and thus stripping the colonized of their dignity to be at least represented correctly.

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[48] Miéville, The Lies that Aren't Meant to Deceive Us.

[49] This telling example of the systematic demand to condemn Hamas rockets during the 2014 war was illustrated by the appearance of a Palestinian-American director of the *Jerusalem Fund* on the Fox news show *Hannity*. As Munayyer explains that he does not want to discuss his personal opinion, but to debate the reasons behind these violent outbursts by militants, Hannity shouted: 'What part of this can't you get through your thick head?', before cutting Munayyer off. See the episode at https://www.youtube.com/watch?v=_FnV9Qc9MTY, accessed April 2015.

[50] G. Hage (2003) 'Comes a Time We Are All Enthusiasm': Understanding Palestinian Suicide Bombers in Times of Exighophobia, *Public Culture* 15(1), p. 71.

By relating *hasbara* to these media practices, I aim to show that this is not simply the consequence of mass media-induced ignorance. For Hage, the condemnation imperative deliberately prevents a sociological explanation of *why* Palestinian suicide bombers act the way they do in the first place. In addition, this treatment then also muzzles criticism of existing international complicity. In this case, the difference between *hasbara* and public diplomacy is that it actually does not matter what Palestinians think, since *hasbara* initially is not designed to be believed by Palestinians. Unsurprisingly, since Palestinians, who have been resisting the occupying force for over a century, are an unlikely target, *hasbara* is mainly concerned with *external* influence. Its meta-goal is maintaining the international alliances that protect Israel through the provision of material and diplomatic support. Yet, when deconstructing the *hasbara* logic beyond this point, there is a message that is intended for Palestinians. Miélville's observation 'How, the world asked in incredulous rage, can they possibly think this ludicrous scenario will convince us? The answer, of course, is that they don't,'[51] with regard to the very coincidental shelling of a family on a Gaza beach in 2006, explains this proposition. The *hasbara* referred to in this example is simply unconvincing, but the goal is meant to convey a reminder of the rules of engagement, namely that Israel indeed can do this and then keep 'the world' busy with ostentatious explanations. This kind of framing has become one of the most important aspects of *hasbara* and a recurring ritual. The outcome, as hinted at in this article's epigraph, is like many ceremonial formalities: It delays the actual question about what to *do* about it. The use of red flags indicates that the core purpose of *hasbara* is to distract from structural issues. Hence, besides having the objective of mobilizing international support for Israel, *hasbara* is meant to delay support for Palestinians and at the same time, to repair this settler-colonial omission. *Suicide bombers* smoothly transitions into *Hamas rockets* and become the bearer of the very narratives that manufacture discontent. This occurred most intensely after *Operation Cast Lead* and I therefore label it the 'cast doubt' approach.

Hasbara 2.0: Operation 'Cast Doubt'

State-led *hasbara* was nurtured under the tutelage of Daniel Seaman, Deputy Director General for Information at the Israeli Ministry of Public Diplomacy and Diaspora Affairs, followed by the Likud Member of Knesset (MK) Yuli Edelstein, after 2009. A social trend was already noticeable, as evidenced by the popular Israeli television show *The Ambassador,* in which contenders compete to mobilize support for Israel.[52] The recruitment of multilingual Israelis as *hasbara* ambassadors is a case in point. The coordinated appeals to Israeli citizens to take an active part in media battles benefits from several state bodies. The *Jewish Agency* (historically concerned with settling Jews on Palestinian land), provides data about new Jewish immigrants, and the Immigrant Absorption Ministry enables the recruitment of large numbers of multilingual volunteers.[53] Israel's airline company, El Al, even experimented

[51] Miéville, The Lies that Aren't Meant to Deceive Us.

[52] The normalization of *hasbara* through this hugely popular program revolves around a competition between hasbarists, battling to represents Israel; see C. Urquhart (2004) Our Man in the US: Israel uses TV show to Find its best Spin Doctor, *Guardian*, November 27, 2004. Available at http://www.theguardian.com/world/2004/nov/27/israel1. The programme was supported by a variety of political organizations (e.g., see Hillel International (2006) Vote for Israel's next 'Ambassador' to the United States, *Hillel International News and Views – Blog*. Available at http://www.hillel.org/about/news-views/news-views---blog/news-and-views/2006/02/24/vote-for-israel-s-next-ambassador-to-the-united-states-, accessed August 15, 2015.

[53] In particular, the hiring of Avi Mayer as a new media specialist resulted in a new style of diplomacy online; see, e.g., http://www.jewishagency.org/blog/1/article/58, accessed August 15, 2015.

with an offer of special allotted paydays for flight attendants in the United States to engage in personal *hasbara*. These El Al Ambassadors use their free slots between flights to engage in small talk with local residents, sharing personal stories about living in Israel, while mentioning Israel's success in the fields of science and culture.[54] The recruitment of volunteers was achieved most prominently through enlisting support from Israel's biggest student union, in 2013.[55] In times of war, full-time social media operatives are formed in what is referred to as war situation or operation rooms, to engage in political *astroturfing* (see Figure 2b).[56]

Transnationally coordinated efforts and the use of multilingual Israelis reflect some of the most far-reaching evolutions in *hasbara*. The period immediately after the outbreak of the Second Intifada (which coincided with the 'War on Terror') saw the creation of what is termed 'neoliberal Zionism.'[57] As mentioned, these overlaps exist because capitalists and Zionists share some of the same ruling class networks. The pro-Israel lobby groups are supported by, and intimately connected with, pro-Israel Christians.[58] In the Netherlands, *hasbara* volunteers are found within evangelical groups with a Zionist affinity. Their networks are the Facebook group and the Twitter account *Holland4Israel*. As events in 2014 show, they come together and tap into numerous virtual platforms to target pro-Palestine activists. However, they do not engage randomly: They adhere to well prepared and mostly discursive campaigns. The attention given to language is therefore crucial.

The 2009 *Global Language Dictionary* report by *The Israel Project* advises how to instrumentalize *hasbara* volunteers better.[59] The report documents the methods that lie behind the meticulously organized media *hasbara* and confirms Israel's move to a positive (soft) discourse by demonstrating which language should be deployed to advance the pro-Israel paradigm. It gives an example of how to counteract the 'right of return' (enshrined in UN General Assembly Resolution 194) by re-framing it as an unreasonable Palestinian 'demand' that is blocking peace efforts. This political recalibration is designed to reinforce the sense of the conflict being complicated. The report warns against declarative statements (*every*, *totally*, *always* and *never*) because 'westerners think in shades of grey.'[60] Another prominent pressure group, *Yisrael Sheli* [My Israel], also recommends against being argumentative

[54] See the announcement and list of participants here: http://embassies.gov.il/new-york/SpeakersBureau/Pages/El-Al-Ambassadors-.aspx, accessed August 15, 2015.

[55] See also B. Ravid (2013) Prime Minister's office Recruiting Students to Wage Online Hasbara Battles, *Haaretz*, August 13, 2013. Available at http://www.haaretz.com/news/national/.premium-1.541142, accessed August 15, 2015.

[56] See Corporate Watch (2012) *Corporate Watch Magazine* # 52, Spring/Summer 2012, for a clear explanation of the main idea behind 'astroturfing,' a term that refers to fake green grass to point at the fake endorsements of products: https://corporatewatch.org/magazine/52/springsummer-2012/online-astroturfing, accessed August 15, 2015.

[57] Aked et al., The UK's pro-Israel Lobby.

[58] See, for instance, *Christians For Israel International*. Available at http://www.c4israel.org/c4i/about_us/offices.

[59] The report was leaked to *Newsweek*: http://www.newsweek.com/2009/07/08/the-israel-project-s-2009-global-language-dictionary.html., accessed March, 2010. The manual claims to be informed by polls and focus group experiments, although it presents no indications of methodological evidence. A number of investigative journalists have been tracking such hasbara projects, see: M. Blumenthal (2013) Israel Cranks up the PR Machine, *The Nation*, November 4, 2013; M. Leas (2010) Delegitimizers of Israel, *Counterpunch*, May; R. Silverstein (2009), Hasbara Spam Alert, *The Guardian*, January 9, 2009. The consistent reporting by *Electronic Intifada* and *Mondoweiss* is also very helpful.

[60] The report also found that certain words—accountability, children, diplomacy, prosperity, prevention, perseverance—or general references—Hamas or militant Islam instead of Palestinians—work better.

and realizing that there is a democratic community to be taken into consideration.[61] They specifically target American liberals (Democratic Party voters) and differentiate party cadres (on which it can rely) from passive voters (more open to critique), who are not necessarily pro-Israel. Indeed, *hasbara* reports focus on the American public, for the obvious reason that they are, as US taxpayers, the main external funders of Israel, given that Israel is the recipient of the largest amount of US foreign spending. These recommendations clearly disclose where *hasbara* imagines its audience to exist, but it also is important to read them as evidence that *hasbara* is being forced to cope with a globally changing public—one that rejects war, apartheid and land appropriation. These reports have a distinctively corporate tone, and borrow from the formula of 'viral marketing.' A good example of this marketization of *hasbara* is *Brand Israel*.[62]

Hasbara volunteers manipulate facts or make unfounded accusations of anti-Semitism,[63] and thus operate in a manner that is referred to as 'trolling.' They create public fronts from behind which they can attract supporters with affirmative sentiments. Whether in Amsterdam or Tel Aviv, the formula is the same: A group of volunteers and coordinators come together and produce information outlets that disseminate resources and repetitive views via online groups. This signals the emergence of *hasbara* as a more belligerent form of Israeli public diplomacy, e.g., the manipulation of images through digital Photoshopping (altering the texts on placards carried at demonstrations, from 'Stop Israeli Terrorism' to 'Stop Hamas Terrorism on Israel'), or attributing pro-Israeli quotes to famous historical figures, such as Martin Luther King.[64]

Taken together, the policy reports, instructions and commercial strategies constitute a form of public relations and crowd-sourcing that are at once diplomatic and corporate. Such astroturfing and branding varies from selling plastic bracelets to expressing positive reactions through supposedly random posts, and they all can be mediated through the supposed neutral (apolitical) language of tourism or sports.[65] For instance, during summer, 2014, Twitter followers of the Israel Defense Forces (IDF) were asked to re-tweet its posts with the additional hashtag #WorldCup in order to maximize reach (Mackey 2014).[66] The essential point to note here is that the methodologies rely chiefly on internet infrastructures. In recent

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[61] Yisrael Sheli made one of the most outstanding interventions by organizing seminars teaching how to edit online content in favor of Israel, for a report of such a gathering see: https://www.youtube.com/watch?v=t52LB2fYhoY. See also: http://www.webelieveinisrael.org/ where similar assistance and model letters are offered. Accessed August 15, 2015.

[62] R. Hassman (2008) The Israel Brand: Nation Marketing under Constant Conflict. Available at http://spirit.tau.ac.il/government/downloads/Rommy_Hassman_HebBLINT.pdf, accessed August 15, 2015.

[63] C. Liphshiz (2014) From Dutch Situation Room, pro-Israel Volunteers Defend Jewish State on Social Media, *Jewish Telegraphic Agency*, July 29, 2014. Available at http://www.jta.org/2014/07/29/news-opinion/world/in-dutch-situation-room-pro-israel-volunteers-defend-jewish-state-on-social-media, accessed August 15, 2015

[64] See F. Kiblawi and W. Youmans (2015) Israel's Apologists and the Martin Luther King Jr. Hoax, *Electronic Intifada*, August 15, 2015. Available at http://electronicintifada.net/content/israels-apologists-and-martin-luther-king-jr-hoax/4955, accessed August 15, 2015.

[65] On rare occasions, people also coordinate offline efforts, such as pro-Israel (counter-) demonstrations. In this case €1400 was made selling 121 plastic bracelets in Dam Square in the capital city Amsterdam. It is important to note that this step was in response to three successive large pro-Palestinian demonstrations throughout the country. The Facebook group can be found at https://www.facebook.com/Holland4Israel/info?tab=page_info and the Twitter account at https://twitter.com/Holland4Israel, last accessed August 15, 2015.

[66] *Cf.* A. Mohammed (2014) Moeen Ali and the Language of War and Protest, *Islam 21C*, August 18, 2014. Available at http://www.islam21c.com/politics/moeen-ali-and-the-language-of-war-and-protest/, last accessed August 15, 2015.

years, many examples of this *hasbara* genre have converged with social media. As I will discuss in more depth now, a greater intimacy began to develop between state bodies, *hasbara* projects and military campaigns. Hence, efforts to convince the international mainstream media that Palestinian stones are as bad as Israeli warplanes are intensely mediated through online videos.[67] Furthermore, social media, often the first outlet for breaking news, potentially can weaken government interference or newsroom control. This is the double meaning of *hasbara 2.0*: the idea being that cyberspace is where a new public needs to be challenged.

The Emergence of *Hasbara* 2.0

> *We have to understand, first of all, and identify the problem that we are facing a very dedicated enemy who is also very sophisticated and who is now also using technology: Internet, Facebook and many many other things; using NGOs in a very sophisticated way and a large network… there is a dedicated campaign against us by a whole network.*[68]

If one takes the scale, recruitment and training of those employed in *hasbara* activities as a measure, then it is clear that a sense of urgency affected Israel between 2008 and 2012. *Hasbara 2.0* therefore arose in response to two mutually constitutive shifts: First, on a conceptual level, deciding whether *hasbara* was to be the aggressive propaganda variant or the subtle public diplomacy version; and, second, on a technical level, updating its tools (from Web 1 to Web 2) and practices (relying on an army of volunteers) related to what came to be framed as the emergence of *hasbara* 2.0, or digital diplomacy.

Israel's international reputation had experienced serious damage during the 2006 Lebanon war, and *Operation Cast Lead* two years later, proved to be the main turning point. This military confrontation particularly heightened the international solidarity movement with Palestinians and it facilitated a change in international public perceptions of Israel. The many graphic images of people escaping bombardment or covered in detritus, video footage of injured or dead children, the (self-) portraits of IDF soldiers admitting to the killing of children that were circulated on YouTube, Facebook and Instagram and were beamed directly to publics across the world, all had a huge impact. During this period of intense violence, mainstream media outlets became more critical and thus a different approach from Israel was required. Israel therefore felt it had to adopt a more assertive *hasbara* strategy in response. More guidelines appeared, which urged a move away from an aggressive propagandist variety of *hasbara*, and instead recommended a more subtle variant. Yet, it cannot be denied that this was first and foremost a war in cyberspace that was fought over *real* events. The increased levels of *hasbara* came in response both to real events themselves and to pro-Palestinian activism around these events.

This occurred, for instance, during the 2010 attack on the *Mavi Marmara* aid flotilla, and during the November 2012 war (Pillar of Clouds) on Gaza, as well as the July–August

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[67] Apart from external influence, one can also read these *hasbara* videos as simultaneously communicating to Israelis that they are stronger and are winning, i.e., do not need to question their colonial policy. Besides the motive of distracting them from the 'real issues', announcing intent for Israelis themselves is thus an important parallel motive in much of the *hasbara* propaganda.

[68] Deputy Foreign Minister Danny Ayalon (2010). See full talk at https://www.youtube.com/watch?v=06g-juYT7eMU, accessed August 15, 2015.

Figure 3. (a) Campus based campaigns are funded by special fellowships; (b) Pro-Palestinian tweets compared to pro-Israel tweets with similar hashtag (courtesy Linah Alsafinah).

2014 war on Gaza.[69] These *hasbara* campaigns thus mushroom in tandem with high levels of pro-Palestinian online activism. As a result, the levels of digital *hasbara* during these military assaults was intense.[70] Simultaneously, these technological efforts aligned more strictly with 'operational' matters, i.e., they took place at the heart of the military. After the *Mavi Marmara* incident, the IDF launched its own blog, Twitter account and YouTube channel. IDF Lieutenant Aliza Landes, who was the first to initiate these activities, noted that the mainstream media often taps into microblogging spaces and online video channels and made clear that providing visual mediation was therefore indispensable.[71] The YouTube channel had videos of successful army defences against Palestinian and Lebanese attacks during the 2006 war on Lebanon. However, its popularity really soared during *Operation*

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[69] It is outside this article's scope to discuss the impact of new media on grassroots politics in Palestine. For an extensive analysis see Aouragh, Virtual Intifada; E. Siapera (2013) Tweeting #Palestine: Twitter and the Mediation of Palestine, *International Journal of Cultural Studies*, 17(6), pp. 539–555. doi: 10.1177/1367877913503865; A. Najjar (2010) Othering the Self: Palestinians Narrating the War on Gaza in the Social Media, *Journal of Middle East Media*, 6(1), pp. 1–30.

[70] B. Makuch (2014) Israel is Outgunning Hamas on Social Media, Too, *Motherboard Vice*, July 25, 2014. Available at http://motherboard.vice.com/read/israel-is-outgunning-hamas-on-social-media-too, accessed August 15, 2015; D. Kerr (2014) How Israel and Hamas Weaponized Social Media, *CNET*, January 13, 2014. Available at http://www.cnet.com/uk/news/how-israel-and-hamas-weaponized-social-media, accessed August 15, 2015; H. Sherwood (2014) Israel and Hamas on Social Media, *Guardian*, 16 July, 2014. Available at http://www.theguardian.com/world/2014/jul/16/israel-hamas-clash-social-media, accessed August 15, 2015.

[71] For interesting reportage, see R. Aren (2010) available at http://www.haaretz.com/weekend/anglo-file/1.296914, accessed August 15, 2015.

Cast Lead, when it momentarily became the second most subscribed channel of YouTube, according to Jonathan Cook, in the first week of the war, a period that also coincided with the first systematized outsourcing of Twitter.[72] Lieutenant Sacha Dratwa followed in Landes' footsteps as head of the New Media Desk.[73] Trained in this new field during *Cast Lead*, Dratwa pushed the IDF's involvement in the 'media war' even further by coordinating many of the real-time online campaigns. Being a native French speaker he also led the Francophone online interventions. During the attack on the *Mavi Marmara*, English subtitles and captions helped to create certain interpretations that delegitimized the Palestinian narrative.[74]

By 2012 these *hasbara*-style initiatives from the IDF were synchronized as an interactive online branch that came under a new command, with a permanent team operating in liaison with the Ministry of *Hasbara*, and in liaison with international volunteers, as mentioned before.[75] According to the IDF's social media chief, Avital Leibovich, 'The military is a closed organization, it doesn't share with other people—it uses harsh language. Here we are exactly the opposite, we are creative, we are open, we are interacting, and we are sharing. This is something very unique.'[76] The Israeli army was learning how to benefit from the new media ecology, largely because of the innovations of its young conscripts. Indeed, as she continued, 'These [soldiers] are 19-year-olds! They've grown up with this technology and have integrated it—internalized it—completely.'[77] *Hasbara* had to adjust to digital media because online media is not as impassable as the comfort-zone of the mainstream media. However, the issue is not that the mainstream press finally have ceased to ignore the Palestinian side of the story, or that journalists have become more aware and resistant to Israeli spin doctors *per se*.

Israel's behavior and subsequent image as a military aggressor increased just as social media (especially Twitter) began to reconstitute journalism. We saw this most clearly during reporting about the war on Gaza in 2014. The combined effect of the physical presence of journalists (and therefore potentially more personal) and being embedded in Twitter, that operate outside the official media's confines, suggests that social networking media offer a different algorithmic logic of news mediation. Discussing the incorporation of Twitter into news discourses, Zizi Papacharissi and Maria Oliveira also suggest that the rhythms of journalistic storytelling have changed.[78] They maintain that, during the first few months of

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[72] J. Cook (2009) Internet Users Paid to Spread Israeli Propaganda, *The Electronic Intifada*, July 21, 2009. Available at https://electronicintifada.net/content/internet-users-paid-spread-israeli-propaganda/8355, accessed August 15, 2015.

[73] Typical of the 'start-up nation's secret of success, Dratwa began an online marketing and public relations firm, which gave him additional experience, scope and clients. See J. Urich (2011) Meet the Head of the IDF's New Media desk, *Israel Defence Forces*, June 27, 2011. Available at http://www.idf.il/1398-12231-en/Dover.aspx, last accessed August 15, 2015.

[74] Kuntsman & Stein 2010; D. Allan & C. Brown (2010) The Mavi Marmara At the Frontlines Of Web 2.0, *Journal of Palestine Studies*, 40(1), pp. 63.

[75] While it was named 'Pillar of Clouds' in Israel, for Western media the less harsh sounding name 'Pillar of Defence' was used. For Palestinians, it was a military operation that killed almost 500 Palestinians.

[76] M. Borgstede (2013) Tweet Offensive: Social Media is Israeli Military's Newest Weapon, *Worldcrunch*, 21 July, 2013. Available at http://www.worldcrunch.com/culture-society/tweetoffensive-social-media-is-israeli-military-039-s-newest-weapon/israel-tsahal-social-media-idf-avital-leibovich-hamas-hezbollah/c3s12783/#.U-jwg-BZeNG5, accessed August 15, 2015

[77] Ibid.

[78] Z. Papacharissi & M. Oliveira (2011) The Rhythms of News Storytelling on Twitter: Coverage of the January 25th Egyptian Uprising on Twitter. Paper presented at the World Association for Public Opinion Research Conference, Amsterdam, September 2011. Available at http://www.researchgate.net/publication/264645964_Affective_News_and_Networked_Publics_The_Rhythms_of_News_Storytelling_on_Egypt, last accessed August 2015.

the Arab uprisings, Twitter built on a stream of news that mainly had *affective* content. The suggestion is that such online (*affective*) mediated news streams are more in tune with spontaneous inputs and therefore also more susceptible to emotional connections. For instance, 'breaking news' is an additional mechanism underlying these rhythms, temporarily affording online reports the possibility of becoming news stories in themselves. However, it also could be the case that instant Twitter feeds are added as part of the reporting stream when access to the field is blocked and, at the same time, there is increased pressure on editors to report from the ground (as is common in the increasingly competitive news sector).

While this is indeed relevant for consideration, we cannot simply extrapolate this to journalism on Palestine/Israel, a topic that is considerably less open for debate. Reporting about Palestine is more complex and less fair,[79] and so offers limited space for a news ecology that is geared toward positive rhythms based on affect, as suggested by Papacharissi and Oliveira.[80] It is more likely that when access is blocked by Israel, editors still will not promote informal Palestinian voices to fill the gaps, as it did with various Arab bloggers in 2011. In other words, the fissures offered by these *rhythms* will be very exceptional for Palestine. But what if this exception is presented with an all-out war? And what does this suggest in terms of the visual material it bestows? Military attacks create violent images: Uncensored footage sometimes even is recorded by journalists themselves as they happen to witness attacks first hand, and on occasion they are beamed into living rooms through digital platforms. As journalists also utilize social media platforms, their content may become part of grassroots information flows. This occurred briefly in the summer of 2014.

Online Journalism: A Reckoning?

Many journalists are embedded in microblogging platforms, and they generally have a large number of followers. Their presence *in situ* offers the viewing public a direct window on conditions on the ground, as they share their observations. These journalists may witness exactly what happened before or after a bombing; reactions to this, a human response that comes with the repugnancy of witnessing violence, becomes a liability. Yet when they share this observation through an instant medium that is outside central editorial control, this has direct implications for Israeli public diplomacy efforts. In their raw and uncensored manner, the reality of the experience of the journalist is portrayed. This process begins to explain why the sleek and well-prepared *hasbara* content does not generate the same conviction. For example, CNN's Diana Magnay's aversion was visible as she reported from a hilltop full of Israelis cheering the bombings of neighbourhoods in Gaza. Or the case of Peter Beaumont, who described how he witnessed an Israeli naval shelling ripping apart four children playing football on a beach: His shock is deeply ingrained in his comments on Twitter and in a piece for *The Guardian* newspaper. NBC's Ayman Mohye ldin also

[79] G. Philo & M. Berry (2011) *More Bad News from Israel* (London: Pluto Press); D. Baram (2004) *Disenchantment: The Guardian and Israel* (London: Guardian Books); and A. Bishara (2013) *Back Stories: U.S. News Production and Palestinian Politics* (Palo Alto: Stanford University Press).

[80] Papacharissi & Oliveira, The Rhythms of News Storytelling on Twitter.

covered the same incident, recording the mothers and fathers of these children just as they realized what had happened.[81] The response of these journalists, infused with a sense of indignation, becomes part of the news story itself, and, in turn, they are shared even more widely through their linked platforms.

In other words, the reporting by journalists in the summer of 2014, *together* with a far greater online presence, created a disconnect between Israel's *hasbara* message and what was being reported. The fact that these are mostly journalists operating inside *mainstream* media networks causes deeper cracks in the centre of the fault lines, with the subsequent potential to create greater fracturing of the *hasbara* vision. Israeli spokespeople had great difficulty explaining the situation.[82] In such cases *hasbara* efforts are intensified. Nevertheless, even the best versions of *hasbara*, applied with maximum effort, have difficulty legitimizing a militarily superior entity that is launching tank bombardments and airstrikes against a confined population. With some of the extraordinary events instantly flashed through online networks, it has become harder to contain contradictory messages. At this point *hasbara* is at its weakest: As it reveals itself, its distortions become almost predictable. In such a high profile context, a corporate-style foundation for *hasbara* does not always succeed in its appeals. It is also more likely to be rejected during moments of (humanitarian) crisis. However, Israel is also challenged by pro-Palestinian narratives, due to the competitive nature of corporate media and the changing techno-social infrastructures, as argued at the outset. Such critical analyses help us to account for the apparent anomalies of Israeli public diplomacy, and in due course they also may help us to shed light on the ongoing struggles, and to challenge the dominant power relations in the context of the media's changing position. The development of the internet has helped to change the political order and the balance of forces. I do not mean by this that politics can be deduced from technology, but, rather, I highlight their interconnectedness. The result is a techno-political dialectic that comes from both sides, from technological changes *and* a growing political consciousness. For mass media are an important source of information and opinion. At the same time, external dynamics (such as an influential protest movement) also can produce particular ideas that push against the dominant media framings.[83] Parallel to this important dynamic, there are also changes in the infrastructure that allow those contesting ideas to be mediated more widely. Access to mass media is necessary in order to set the agenda and, if possible, to cultivate it as a free space; a space to which to (re)direct attention. This is where critical writings on the temporary synchronization between revolutionary activists' agendas and mainstream journalism, such

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[81] Magnay tweeted about being harassed and called the Israelis on the hilltop 'scum.' She was removed from Palestine by her employer and sent to Moscow, provoking mocking comments about her being sent to Siberia. Mohyeldin commented about this on Facebook. He also was pulled out, presumably in response to his personal comments on Facebook. He was reinstated after a big outcry by fans and colleagues. Beaumont tweeted about having seen a father scraping up his son and putting the pieces into a plastic bag. See, respectively: M. Calderone (2014) CNN Removes Reporter Diana Magnay from Israel-Gaza after 'Scum' Tweet, *Huffington Post*, July 18, 2014. Available at http://www.huffingtonpost.com/2014/07/18/cnn-diana-magnay-israel-gaza_n_5598866.html; G. Greenwald (2014) NBC pulls veteran reporter from Gaza after witnessing Israeli attack on child, *The Intercept*, July 17, 2104. Available at https://firstlook.org/theintercept/2014/07/17/nbc-removes-ayman-mohyel-din-gaza-coverage-witnesses-israeli-beach-killing-four-boys/; P. Beaumont (2014) A father opens a plastic bag: 'This is my son', he says, killed by an Israeli shell, *Guardian*, July 18, 2014. Available at http://www.theguardian.com/world/2014/jul/18/father-gathers-body-dead-son-two-plastic-bag-gaza-shelling, accessed August 15, 2015.

[82] Israel's chief spokesman for the country's Prime Minister, Mark Regev, normally is allowed to out-talk his opponents, but during a Channel 4 interview by Jon Snow there was a confused and irritated look on his face: https://www.youtube.com/watch?v=M_-76H-YRjs, accessed August 15, 2015.

[83] Sparks, Contradictions of Capitalist Media Practice, p. 130.

as during the 2011 Arab uprisings, can help.[84] They remind us that volatile occasions give rise to more debate and opposition.

Indeed, when pushing too far, Israeli *hasbara* practices cause more damage. When asked to support a propagandist Facebook page that promotes Israeli tourism, while the ugliness of war is intensely mediated, *hasbara* astroturfing is unlikely to strike an emotional chord. On the contrary, it may lead to unforeseen results, such as inadvertent comments about the Israeli army, and thus it may become belligerent. Pressure from below can bring about a momentary synchronization of news and political dynamics. This article insists on the interface between the journalistic social media ecology and pro-Palestinian activism. Together they can reach and influence public opinion, as the next, and final, section of this article suggests.

Implications for Palestinian Solidarity

As mentioned, the notion of media 'neutrality' is especially necessary in 'representative' democracies, and this makes it also more vulnerable to pressure. Pro-Palestinian involvement (both online and offline) is therefore an indispensable part of the dynamic. Although often ignored by media or public diplomacy experts, it is necessary to pay attention to political resistance in order to obtain a full picture. When activists mobilize on a large scale, they can persuade sections of society. Precisely because it is not useful to provide a forensic assessment of *hasbara* activities for their own sake, I do so with this tension in mind.

A materialist concept of media and communication technologies recognizes the dialectical contradictions in its unsettled and dynamic social reality. For that is also why the relationship between mainstream media and the political and economic élite reflects a greater overlap with Zionist pressure groups than with ordinary people, who are neither élite nor necessarily pro-colonial. This contradiction suggests an antagonism that in itself can be the basis for struggle and progress.[85] This does not mean that the mere existence of oppression is sufficient to achieve resistance. Dana Cloud, for instance, explains this through the difference between class as an objective entity, and class as a subjective consciousness.[86] Changing political awareness inevitably will require mediation, and while attempts to change such awareness indeed often are tried through the media, they also can take place through activism. The rhetorical power of a social movement can disrupt business as usual.[87] That is why I have argued that *hasbara* is not merely challenged technologically.

During contentious moments in recent years—from disrupting propaganda efforts to the imposition of alternative media frameworks, Israeli *hasbara* faced an increasingly successful counter-narrative. This occurs *despite* the fact that dominant media frameworks helped to manufacture an erroneous framework over several decades, always ready for *hasbara* to exploit. As noted, this is denoted most clearly by the 'both sides' imperative, and its exasperating red flags. The small victories are the product of a political process that evolves the combined effect of technological tools and political activism. In this way new media

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[84] This argument is developed in greater detail in A. Alexander & M. Aouragh (2011) The Egyptian Experience: Sense and Nonsense of the Internet Revolution, *International Journal of Communication*, 5, pp. 1344–1358; and A. Alexander & M. Aouragh (2014) Egypt's Unfinished Revolution: The Role of the Media Revisited, *International Journal of Communication*, 8, pp. 890–915.

[85] L. Artz (2006) On the Material and the Dialectic: Toward a Class Analysis of Communication, in: L. Artz, S. Macek & D. L. Cloud (eds) *Marxism and Communication Studies*.

[86] D. L. Cloud (2006) Change Happens: Materialist Dialectics and Communication Studies, in: L. Artz, S. Macek, D. L. Cloud (eds) *Marxism and Communication Studies*, pp. 62–65, provides an interesting reflection of the different takes on the extent of the spontaneity of consciousness between Lukacs, Luxemburg and Gramsci.

[87] L. Artz, On the Material and the Dialectic, p. 46.

strategies can converge the socio-political and techno-material dynamics and help bust the pro-Israel myths. As mentioned, *hasbara* has made several important adaptations relating to precisely these digital media changes in coordination with the army.

During the 2014 war on Gaza, the IDF had 292,000 Twitter followers and was offering dozens of updates a day, including infographs. However, these figures cannot be taken at face value. Its presence was indeed far superior to that offered by Palestinian military groups, such as *al-Qassam* (the military wing of Hamas), whose account on Twitter had merely 11,900 followers in the same period.[88] Online media is shaped by an existing colonization of digital infrastructures that reflect the reality of *cyber imperialism*.[89] The fact is that existing dominant platforms block most of al-Qassam's accounts, since the majority of companies are hosted in the United States and abide by state wishes and policy regulations. Thus the internet is not a democratic space: Many platforms are not neutral but follow corporate or state orders that mostly favor Israel. But if we zoom out from the military actors, where there is such an unequal balance of forces, and zoom into activist groups, then the number of people sharing and liking hashtags in support of Palestinians is much higher, with pro-Palestinian tweets than being far more numerous than those produced by *hasbara*. The *#GazaUnderAttack* (Figure 3(b)) tweets during the war illustrate this.[90] The fact that celebrities (e.g., Dwight Howard, the basketball player, and Rihanna, the singer) posted tweets with the *#FreePalestine* hashtag also reflects how broadly this political dispositionality is embraced.[91]

Moreover, the contradiction of hyper-mediations turns *hasbara* audiences into witnesses of injustice. An example of this dynamic is the online video, *What Is It Like to Be Attacked By Rocks?* It shows scenes of Palestinian youths throwing stones, and it ends dramatically with the question: 'The media consider rock-throwing a harmless provocation. Do you still agree?' The stark irony is that cars pass by on Israeli-only roads in West Bank settlements. These discursive and visual tools become *hasbara*'s own nemesis by *disclosing* the illegal presence of Israeli colonial settlers, providing evidence of apartheid.[92] Similarly, in the *What it's like to be hit by rockets* video, the casualty is a cat that falls from a tree. Again, compared to footage of air bombardments of densely populated apartment blocks in Gaza, this only *confirms* the military inequality. These contradictions do not just occur as such, they are identified by critics and offered to the media as part of larger awareness campaigns. The tireless attempts of Palestinian activists and their international supporters therefore answers why *hasbara* has refocused much of its attention toward the activist spaces and networks. This is exactly why the media are not the only space of contention for *hasbara*.

This perspective offers a better explanation of why, despite Israel's status as an unscrupulous rival with an undeniably stunning media apparatus and a very well-funded public diplomacy, *hasbara* is not very successful in winning hearts and minds. This perspective

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[88] In D. Kerr, How Israel and Hamas Weaponized Social Media. Al-Qassem is considered 'a member of a designated foreign terrorist organization', hence banned from YouTube. Whatever the reasoning is, the result is that state violence is preferred over non-state violence.

[89] M. Aouragh (2012) Social Media, Mediation and the Arab Revolutions, *Triple-C: Communication, Capitalism & Critique*, 10(2), pp. 518–536.

[90] *Cf*. B. Dabour (2014) In Asymmetric Twitter War over Gaza, Palestinians are Winning, *Electronic Intifada*, August 21, 2014. Available at http://electronicintifada.net/blogs/belal-dabour/asymmetric-twitter-war-over-gaza-palestinians-are-winning, accessed August 15, 2015.

[91] *Cf*. A. Kaczynski (2014) Rihanna tweets '#FreePalestine,' quickly deletes tweet, *BuzzFeed*, July 15, 2014. Available at http://www.buzzfeed.com/andrewkaczynski/rihanna-tweets-freepalestine-quickly-deletes-tweet#.glwvGrbP, accessed August 15, 2015.

[92] See the video at https://www.youtube.com/watch?v=YZC7A-Lr4Eo, accessed August 15, 2015.

becomes clear once we step outside the disciplinary confines of media studies and regard mediation as a convergence of socio-political and techno-material factors. For example, as a consequence of Israeli military violence (in 2000, 2002, 2004, 2006, 2008–09, 2010, 2012, 2014), protests began to accumulate and gather speed. This is reflected in a number of surveys conducted between 2002 and 2012. The 2014 attack on Gaza furthered this increasingly critical international public opinion. In the UK the *YouGov* and *The Sunday Times*' polls showed that 62 percent of the public believed that the Israeli government was committing war crimes, and 51 percent of those polled by *The Sunday Times* stated that Israel's actions were unjustified. This increase in sympathy for the Palestinians is particularly interesting in traditionally pro-Israeli media outlets, such as *The Sunday Times*.[93] A growing number of people place Israel, together with Iran, Pakistan and North Korea, as the most negatively rated countries. Specifically in EU countries, views on Israeli influence have hardened in Spain (74 percent negative rating, up 8 points) and in France (65 percent, up 9 points). Negative ratings in Germany (69 percent) and Britain (68 percent) remain high. In other English-speaking countries, negative views about Israeli policies also have risen: In Australia (65 percent negative rating, up 7 points) and in Canada (59 percent, up 7 points).[94] The decline of support among the Jewish community in the UK is particularly telling. British Jews have become increasingly uncomfortable with the right-wing politics of Israel and the ethno-racial expectation that they will close ranks for its sake.[95]

Political engagement on university campuses is among the most interesting challenge that is causing shifts in the public's opinion *vis-à-vis* Israel. This engagement, in turn, also explains the growth of campus activities by *hasbara* campaigns. Progressive student bodies endorsing divestment campaigns, such as Boycott, Divestment and Sanctions (BDS), increasingly weaken pro-Israel lobbies and antagonize *hasbara* initiatives. Consequently, Israel has experienced a growing number of celebrities cancelling cultural events in Israel, at a level that is similar to the boycott and divestment campaigns during the apartheid era in South Africa. It is likely that the growth in boycott campaigns and the increase in street protests have pushed previously controversial topics regarding Palestine further into the public arena. Similarly, it is unsurprising that the Israeli government and its *hasbara* strategy have identified BDS as a key strategic threat. The double entendre, 'Don't believe the BS in BDS!', used by Prime Minister Benjamin Netanyahu in his speech at the 2014 American Israel Public Affairs Committee (AIPAC) meeting, is telling.[96] However, this top-level response to a largely grassroots campaign further demonstrates that ordinary people can contradict *hasbara* messages that emanate via the same dominant media on which public diplomacy relies, and in due course can construct an independent discourse. This dynamic clarifies why *hasbara* must be refined and yet how, in doing so, it repeatedly fails, or rather why the contradictions that exist between the Israeli message and its reality are becoming ever wider. The additional angle of politically active engagement makes clear that a particular consciousness can be nurtured beyond the reach of public relations or diplomacy.

[93] For both questionnaires see: http://cdn.yougov.com/cumulus_uploads/document/ejq2q2g7ym/Internal_Results_140728_War_Crimes_W.pdf; http://cdn.yougov.com/cumulus_uploads/document/ytggo8ho42/YG-Archive-Pol-Sunday-Times-results-140725.pdf, accessed August 15, 2015.

[94] See this extensive assessment by the BBC: http://www.worldpublicopinion.org/pipa/pdf/may12/BBCEvals_May12_rpt.pdf.

[95] Aked et al., The UK's pro-Israel Lobby.

[96] For the full transcript of his speech, see: http://www.haaretz.com/news/diplomacy-defense/1.577920, accessed August 15, 2015.

Conclusion: Meticulous Strategy, Magnificent Failure

> *This ostentatiously outrageous lie reads not as evasion, but as a deliberate and cruel assertion of power, not only over life and death, but, at least in the Gaza strip, over truth itself.*[97]

For Palestinians, *hasbara* does something definite: it mediates not only the exercise of power over life and death, but over truth itself. *Hasbara* has become a multi-levelled project: some can be understood as a form of public diplomacy, or seductive branding, while others take the form of aggressive soft power, or psyops. Following a framework that befits liberal nation-states, mainstream public diplomacy literature provides a separation of these two roles: One where the monopoly and exertion of violence is veiled. This is not the case with Israel, which, according to Molad,

> is perceived in the international community as militaristic, masculine, religious, stiff-necked, dangerous, chauvinist, and frightening, and is constantly identified in the international media with images of conflict.[98]

This change mostly is associated with Israel's military operations. International public opinion gradually, and perhaps irrevocably, has shifted toward one in which Israel is perceived as a military aggressor. Simply put, it is more difficult to mask images of conflict when one perpetually is involved in wars. The underlying truth of colonialism, obscured by an ideological bias (Zionism), does not allow *hasbara* to arrive at the most logical explanation that would be in tune with most public relations approaches or media analyses. In answer to Schleifer (cited at the beginning of this article), who asked how it is that a state with nuclear weapons and reputable intelligence services could fail, the answer is contained in the question. The primacy given to military doctrines, Israel's *permanent* condition, directs us to what causes the *hasbara* stalemate. *Hasbara* cannot make a 'post-conflict' shift as long as it is not based on justice for Palestinians, which, of course, would undermine the Zionist project itself. Thus, *hasbara* is trapped between a rock and a hard place as this article illustrated. The difference between opinions of governments and ordinary publics regarding Israel epitomizes the immense contradictions. That is why public diplomacy needs to be assessed through state *and* non-state dynamics, increase of support for Palestine and critique of Israel coincide.

In response to growing international criticism *hasbara* has undertaken a number of make-overs—refined its earlier style to a slick 'cast doubt' strategy. In the 'Hamas Rockets' *red flag* model a handmade grenade damaging a tree in Israel, and an Israeli F16 killing 25 people in a massive blast are measured against the same philosophical or ethical standards. Such a conceptual levelling of politics and experiences in a greatly uneven reality reverses oppression and resistance, or cause and effect. This article explored the role of the internet for public diplomacy with reference to techno-military forces and has illustrated how this process intersects with, and is influenced by, a changing media ecology and journalism more generally.

The asymmetry in the military field and the strength and resources of Israeli social media—construed by existing double standards, e.g., online platforms are blocking Hamas

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[97] Miéville, The Lies that Aren't Meant to Deceive Us.
[98] Molad (2012) Israeli Hasbara: Myths and Facts, p. 11.

pages while accommodating those of the IDF—clearly outweigh those of the Palestinians. However, the overall impact of the Palestinians on social media outweighs that of Israel, defying the mathematical logic that one might presume applies. That an opponent with more resources, superior access to intelligence and crucial international backing is not able fully to impose its will is an important confirmation of activist efforts and solidarity. To understand these contradictory dynamics better, we must take the conceptual dispute outside of the media realm and *re*converge it with offline strategies, with grassroots activism. And amid the deeply unequal balance of forces, the struggle for justice only can be a long-term one. It is important to remember that the grassroots struggle against Apartheid South Africa took many decades; without all those initial cracks in the projection of white supremacy by all the big and small solidarity groups across the world, it would not have managed to emanate as a collective that managed to pressure international governments to end their diplomatic and economic support for South Africa.

The lacuna between Israel's desired public persona and overall international perception continues to deepen and pro-Palestinian movements are gaining public support. If anything, the examples discussed in this article have shown that occasions of war create cracks in the dominant media narrative. It is when a parallel common sense seeps through, one that defies many of *hasbara*'s attempts to 'explain' it all away. This 'common sense' is captured by the words chanted in the streets of many capitals across the world in July and August 2014: 'In our thousands—in our millions—we are all Palestinians.' This striking chant proclaims that (pro-) Palestinian public diplomacy, not relying on government interventions, is an international and above all people's objective. The basic fact, therefore, is that every time Israeli propaganda becomes more masterful in its techniques and receives more budgets, it ends in disappointment. Paradoxically, *grassroots diplomacy* —a public relations that is formed by universal principles of justice and equality—offers qualities that money cannot buy, hence a more aggressive *hasbara* tends to mobilize *more* solidarity for Palestinians in the process.

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Disclosure statement

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'The Last Peaceful Weapon'

It had been tried before. When the idea first surfaced with regard to South Africa during the early decades of apartheid rule, no one seemed to have enthusiastic recollections of the previous attempt to implement an oil embargo. In a conference convened in 1964 to discuss economic sanctions against South Africa, participants were told: 'To very many people "sanctions" means something that somebody tried, or did not really try, to do to Italy about Ethiopia in the 1930s; and failed'.[1] The course of that chapter of history, thus far the 'most celebrated attempt to apply sanctions in modern international politics',[2] did not inspire much confidence in the practicality of the oil embargo as an instrument. Anglo-French *raisons d'état* had blocked the intervention by the League of Nations under the provisions of its Covenant when Mussolini threatened to annex Ethiopia in the course of 1935. When the attack came in October, the League voted for half-hearted economic sanctions against Italy; however, oil and coal – 'the two products that might have thwarted Italy's attack'[3] – were not included. The British kept the vital Suez Canal route open for Italian shipping, and the USA and Germany, not members of the League, were not bound by the decision. The US government tried to dissuade oil companies from trading with Italy, and it was generally expected that the international sanctions would still be extended to include oil. In early 1936, the new British Foreign Secretary, Anthony Eden, advocated oil sanctions on the condition that everybody joined in order to make them effective, 'but it was clear that the condition negated the promise and made it an empty one'.[4] Hitler's occupation of the Rhineland (March 1936), the rapid Italian victory in Ethiopia (May 1936), and the onset of Franco's insurrection against the Spanish government (July 1936) were the final death knell for the unfortunate experiment. At the end of June 1936, only two nations voted in favour of the continuation of the League's sanctions programme: New Zealand and *South Africa*.

First steps

The first steps en route to economic sanctions against South Africa had a unilateral character. A decision to consider the imposition of economic sanctions as a result of the treatment of citizens of Indian origin in South Africa was taken by India as early as November 1944. When the measures came into effect in July 1946, India was the first country to institute a total ban on exports to and imports from South Africa (India did not export oil). India was also the first country which put the matter on the agenda of the United Nations.[5] In the UN, the issue soon merged with the broader question of apartheid as such, which first appeared on the agenda of the General Assembly at the request of 13 Afro-Asian states in 1952.[6] Meanwhile, South Africa's conduct towards the mandated territory of South-West Africa was another bone of contention between the international community and South Africa. Initially, recommendations and requests were directed at the South Af-

rican government, and there was much legal haggling about the UN's power to institute sanctions.

'Economic boycott is one way in which the world at large can bring home to the South African authorities that they must either mend their ways or suffer from them'. A landmark in the growth of the movement for sanctions against the apartheid regime was the call which the later Nobel Peace Prize laureate, Chief Albert Luthuli, made in 1959 in his capacity as President of the African National Congress, together with the leaders of the South African Indian Congress and the Liberal Party.[7]

The Sharpeville massacre, 21 March 1960, in which 69 peaceful anti-pass protesters were killed and 180 wounded, marked the end of the non-violent phase of the struggle against apartheid. The ANC and the Pan Africanist Congress (PAC) were forced to pursue their activities underground. Meanwhile, abroad, support was mounting in favour of Luthuli's call for the economic isolation of South Africa. Oliver Tambo, who later became Luthuli's successor, fled the country five days after Sharpeville and became one of the leading figures in the 'South African Unity Front' which was formed in June 1960 and included members of both ANC and PAC. Until its demise in early 1962, the SAUF was engaged in a concerted campaign for an economic boycott. It was then that oil reappeared on the agenda.

Boycotts & Embargoes

Towards the end of the 16th century, the English borrowed a word from their Spanish enemies ('embargar': to arrest or restrain) and spoke of the 'embargement' of ships, merchants and goods. They started using the term *embargo* when referring to a prohibitory order, often issued in anticipation of war, by which ships of a foreign power were prohibited from entering or leaving English ports, or native ships from proceeding to (anticipated) enemy ports. The use of the word has since been extended to include the prohibition of trade in certain products or goods in general, imposed by a government or an international organisation.

The word *boycott* was coined in more recent times. The English estate manager Charles C. Boycott (1832–97), who achieved notoriety for his harsh collection of land rents in the face of demands by the Irish Land League for a rent reduction when harvests were bad, was the first to be subjected to a successful tactic of total isolation by his Irish tenants in the autumn of 1880. The term "Boycotting" was immediately adopted by newspapers in many languages as a generic term describing concerted plans of deliberate non-violent isolation of persons. In commerce, the term came to refer to the organised refusal by a group of persons to have dealings with a person, a firm or a country. The ultimate aim of a boycott in this sense – the word soon lost its capital B and inverted commas – is to exert pressure on the target.

Strictly speaking, an embargo such as one on oil sales to South Africa is established by an explicit legal undertaking on a government level. The word 'boycott' more loosely applies to all sorts of actions with the aim of isolating and influencing the targeted party – the apartheid government, or oil companies which refused to stop sales to or investments in South Africa.

In practice, the term 'oil boycott' was often used where 'oil embargo' would have been more appropriate. Most people didn't bother about the terminology and regarded 'oil embargo', 'oil boycott' and 'oil ban' as more or less interchangeable terms. The movement for oil sanctions – a convenient umbrella term – was a broad one and was not centered around government policy only. Local authorities, companies, concerned organisations and individuals all participated as they saw fit.

The first recorded call for sanctions specifically regarding oil can be traced to the Second Conference of Independent African States, held in Addis Ababa in June 1960. The conference 'invited the Arab states to approach all petroleum companies with a view to preventing Arab oil from being sold to the Union of South Africa' and recommended that African states 'refuse any concession to any company which continues to sell petroleum to the Union of South Africa'.[8] A few years later, at the July 1964 summit of the Organization of African Unity (OAU), founded in 1963 by the newly independent African states, a resolution was passed 'to appeal to all oil producing countries to cease as a matter of urgency their supply of oil and petroleum products to South Africa'.[9] Hardly any oil-exporting country heeded the call; one of the exceptions was Kuwait which had already banned exports of its oil to South Africa in the early 1960s. It was only in 1973 that the Arab states responded to the OAU's request, in their attempt to strike an alliance with the African states against Israel.

From the mid-1970s onwards, the oil embargo came to occupy a prominent position on the UN agenda regarding international sanctions policy. Dr Amer Araim, who for many years was closely involved in the UN oil embargo, tells the story in his contribution. However, the ball only started rolling slowly. When the newly appointed Pakistani director of the United Nations Centre against Apartheid, Assistant Secretary-General Iqbal Akhund, visited the Shipping Research Bureau in Amsterdam in 1985, he proudly recalled the fact that he had been a member of the Pakistani delegation which had been the first to plead for an oil embargo against South Africa. On 13 November 1961, Pakistan introduced an amendment to a draft resolution on apartheid calling upon all UN member states to refrain from exporting petroleum to South Africa; the amendment failed to obtain the required two-thirds majority.[10] Exactly two years after the Pakistani initiative, on 13 November 1963, a General Assembly resolution in connection with South Africa's policies on Namibia did include a once-only call for oil sanctions against South Africa. The USA, supported by 21 other countries, had tried in vain to prevent the clause from being included in the resolution; the opponents included the parent countries of all the world's major oil companies.[11] During the 1960s, oil sanctions were conspicuous by their absence from the resolutions of the General Assembly and the Security Council dealing with the issue of apartheid in South Africa, including those in which calls were made or decisions taken to implement punitive measures.[12]

1964: A pioneering conference

In its first report to the General Assembly after its establishment in 1963, the United Nations Special Committee against Apartheid recommended a study of the means to ensure an effective embargo on the supply of petroleum to South Africa.[13] At that time, such a study, though not connected with the UN recommendation, was already being undertaken by a group of British 'Young Fabians'.

In March 1960, following the announcement that the ANC was to be banned, the South African journalist Ronald Segal smuggled Oliver Tambo out of the country in his car. Four years later, Segal convened an *International Conference on Economic Sanctions against South Africa*, which was held in London from 14–17 April 1964 under the patron-

Three stories on everyday technological complicity

We are writing this text as Pipas, a group of people based in Antwerp, Amsterdam, Barcelona, Basel, Brussels, Rotterdam and elsewhere. We came together in autumn 2023 to understand what practices of technological resistance we could articulate and build, as we witness the genocidal world rotation currently taking place.[0] Together, we are exploring modes of resistance to the extractive and colonial approaches to technological infrastructure modelled and propagated by Big Tech companies, in complicity with nation states, Fortress Europe, the oil industries and the world of finance.

Our resistance includes campaigning for divestment from Big Tech companies due to, among others, their role as military service providers for Israel. For that purpose, we want to call attention to the way in which the everyday use of platforms provided by Microsoft, OpenAI, or NVIDIA is directly entangled with economies of war and genocide.

The term "Dual use" refers to technologies which are considered to be useable in both military and civilian applications. The origins of the term lay in the post-WWII period when a legal framework was developed to regulate the export and import of nuclear materials that could be used for both military (weapons) and civilian (energy) purposes. Nowadays, the concept is used in legal, policy business contexts to regulate or sanction the manufacturing and trade of a much wider range of technologies. Some dual use technologies are easy to spot—it's not hard to imagine how an EU-funded software for "civil border protection" developed in collaboration with an Israeli institution might be deployed in a military setting.[1]

However, we find the concept of "dual use" to be questioned as much as the one of "technological neutrality", which supposedly puts in the hand of a "user" the responsibility to *do good* or *do bad*. Specifically when speaking about computational infrastructure, we refuse this fiction that exonerates entire industries and economies from their criminal responsibilities: the deeper you look, the more you find the liberal murderous benevolence being rendered in High Definition.

With this contribution we propose to reconsider the meaning of this term, acknowledging the everyday violence of dual abuse technologies in a much more mundane sense. Opening up this question in all its complexity, means recognizing the forms of dual use technologies financed by schools, universities and individuals. These uses are close to our everyday life; this brings up the question whether any kind of *good* use is really possible.

From the military's growing dependence on civilian tech giants such as OpenAI, whose same logic of categorisation, efficiency and calculation punctuate everyday life, to the distribution and hobbyfication of NVIDIA hardware used in war zones, to an attempt to resist the incursion of Microsoft, an accomplice to genocidal violence, in a classroom, we collectively wrote these three vignettes in an attempt to highlight and reflect on the concrete connections between everyday practices and military operations.

These three short stories, inspired by our experiences and sometimes told in the form of fiction, invite the following reflection: is it possible that our use of everyday technologies is fundamentally not so different from their military use?

ChatGPT at war and on holiday

A colleague told me how annoyed she was with her partner because he uses ChatGPT for trivial requests such as 'what to do on a day in Amsterdam?' My colleague assures me that the results he gets are completely predictable; the app's suggestions are the same as those he would get for the same query in any search engine. When she points this out to him, he doesn't disagree, but explains that he likes the language model for its interface and the way the system structures its responses. For a trip to Amsterdam, he no longer needs to understand the city's geography or calculate the distances between two places to be sure they can be visited on the same day. The software provides him with a perfectly tailored itinerary that includes all the most popular tourist attractions.

My colleague's irritation is obvious, but she finds it difficult to explain why, which may also be part of the reason for her annoyance.

I imagine this scene is recognisable (if not already familiar) to many of us, either because we have let ChatGPT slip into our daily routines, or because we are astonished at how quickly its use has become increasingly prevalent in the practices and habits of those around us. Under the guise of making our lives easier, saving time and improving performance, this normalised adoption of ChatGPT may be the result of a need for simplicity and clarity in order to act and think on a daily basis in the face of the complexities of the world. And that is precisely what this language model does: it grasps the world and effectively reduces it to a few paragraphs.

However, ChatGPT is only effective to a certain extent. Its totalising and universalist approach erases all differences and complexities, depriving us of our ability to think about the world as a whole and from multiple angles. Its intellectual extractivism treats all practices related to the cultural field as a mere resource, waiting to be passively consumed. As if there were no need to engage critically in intellectual production, for example in art, literature, poetry, theory or other urgent forms of intellectual expression, and as if human engagement in this production were a cost to be optimised. Its material extractivism has a devastating impact on the Earth, both in terms of mineral extraction and the manufacture of electronic devices, and in terms of the growing consumption of water and electricity needed to perform its calculations. This is not to mention the exploitation of workers at various points in this infernal spiral (click factories, mining sites, electronic equipment assembly lines, etc.). In all these respects, ChatGPT requires and perpetuates a colonial logic based on extreme extractivism and appropriation. By using it, we become passive consumers of content generated through this colonial violence, which is thus maintained.

Increasing speed[2], increasing precision[3], increasing efficiency[4] regardless of the purpose; AI-powered systems such as ChatGPT propelled us into a forged reality of unmitigated quantification where everything can be measured and upgraded.

The use of large models in day-to-day inquiries induces a relationship with the world similar to that of the colonial-military boundless death-making enhancement. Through the optimisation of methods of warfare and these automated deadly procedures, emerges the fantasy of an omniscient vision informed by 'psychotic quantities'[5] of information that large systems are supposed to be able to process. This is military logic that considers a war zone remotely operable, where 'targets' are identified and 'neutralised' by automated systems. After all, these *more-than-human* systems know more, therefore they know better.

It is both necessary and difficult to talk about how AI-powered systems import military logic into our daily lives. It seems almost impossible to talk about the violence of these systems in the most mundane moments of everyday life, particularly because the needs they fulfil reveal the impossibility of making room for complexity in our daily lives. Yet this violence and banality are intimately linked.

ChatGPT induces a reality in which organising, doubting, searching or getting lost become problems to be delegated to systems created by private companies, and where it is normal to demand a quick, accurate and definitive answer, whether for organising a holiday or for a homework.

Insidiously, trust in these systems has taken hold and is quietly eroding the critical thinking needed to analyse the answers presented and their algorithmic constructs. Obviously, trusting ChatGPT to organise your holidays is not a big risk, apart from perhaps ending up in crowded places that are part of a predefined tourist itinerary. However, it is important to understand that placing trust in such a system reaffirms and reconfirms the regime of techno-military operations that make life-and-death decisions. The problem is that the systems are agnostic about the purpose for which they are deployed. Conveniently, their logic does not change – the more data they process, the closer they can supposedly get to the 'truth'. In one context, 'truth' means pointing out that Madame Tussauds is a must-see attraction in Amsterdam; in another context, 'truth' means selecting so-called terrorists based on their silhouettes and walking patterns. Accepting what ChatGPT presents as acceptable knowledge is, in a way, accepting as 'correct' the extreme violence facilitated and amplified by systems powered by so-called AI in the Gaza Strip and elsewhere.

Talking about large-scale execution while on holiday is certainly uncomfortable. But this discomfort must become normalised so that we do not bury our heads in the sand. We can aspire to satisfy our different needs and practices without harming one another. We must find ways of being, speaking and resisting together, and reject the logic of war that is watered down and disseminated by systems that are 'quite practical, after all'.

<u>**From: School To: Liberation**</u>

From: teacher1@.institution.edu
**To: teacher2@institution.edu , teacher3@institution.edu , teacher4@institution.edu ,
teacher5@institution.edu , teacher6institution.edu , teacher7@institution.edu**
Cc: teacher2@roseup.net, teacher3@roseup.net
Bcc:
Subject: A concern about Microsoft Teams: proposal to meet

One evening during the week at the end of January 2025, an email was sent. It began with a
friendly greeting: 'I hope you are well,' and then quickly moved on to express the deep concern
of the sender, a biology teacher who had just read an online article entitled 'Leaked documents
reveal close ties between the Israeli army and Microsoft' [6].

In the email, the teacher shared their concern about the standardised use of Microsoft Teams in
their online classes, due to the contractual link between their institution and the company
complicit in the genocidal, ecocidal and epistemicidal Zionist project.
Although Microsoft Teams' myAnalytics applications were now an integral part of their teaching
practice, they couldn't help but see them in a new, sinister light. The incessant pop-ups from
Microsoft Insights, reminders of the individual tracking of students 'active especially at night',
became inseparable from the massacre of civilians carried out under the guise of so-called
'surgical strikes', whose targets are chosen by automated databases. Each home screen of the
platform, suggesting percentages of efficiency to evaluate collaborations and monthly
performance results, reminded them of the deadly efficiency with which 'Azure,' the cloud
platform developed by Microsoft under 'Software as a Service' (SaaS) conditions, is unleashed
against Gaza, Khan Yunis, and Rafah.

So they wrote to their colleagues bluntly and without complacency, probably with a little naivety,
to share their concern and propose a meeting with the teaching staff to discuss possible ways
of resisting the rise of techno-fascism in which their school now seems to be complicit. The
question seemed obvious to them, so they wrote it in a way that was both urgent and hopeful.

From: microsoftoutofourschool@roseup.net
To: head@institution.edu, finance@instituion.edu
Cc: teaching@institution.edu
**Bcc: teacher2@institution.edu , teacher3@institution.edu , teacher4@institution.edu ,
teacher5@institution.edu , teacher6institution.edu , teacher7@institution.edu**
Subject: Formal petition to divest from Microsoft Services

The meeting had gone on for a long time, and the group had grown. The situation had
culminated in an interdepartmental agreement among teachers to actively reject the use of
Microsoft in their classrooms and to invite the school board to end all engagement with Azure

services. The group also proposed contributing to a list of alternative tools to the tech giant's infrastructure, as well as establishing processes to rethink their interdependencies and responsibilities as educators.

The teachers' strategy proved effective. Although their frustrations with Microsoft Teams had begun for different reasons, ranging from the company's responsibility for environmental destruction to its extreme right-wing stance, they focused their arguments on the urgency of the company's involvement in the Israeli army's deadly machines.

They agreed to mobilise the argument of dual-use technology so that the board of directors could easily understand the impossibility of continuing with business as usual. Everyone had already heard, at least in passing, about the legal concept of dual use, which is used by the media to refer to the convergence of technological applications for both military and civilian use.

With the support of comprehensive documentation explaining how to disengage from Microsoft Teams, they worked on an implementation schedule for their own school. Their focus was on how each educational department could migrate to another platform. The needs in terms of media, methods and content were taken into account in the most context-specific way possible. For example, they had to accommodate different spaces, procedures and tools for both the linguistics and arts departments. A small group of teachers and students volunteered to prepare this documentation, which led to very fruitful discussions.

Their message was carefully crafted, combining a sense of anger and urgency while remaining open to discussion.

From: ict-head@institution.edu
To: teaching@institution.edu
Cc: head@institution.edu, finance@instituion.edu
Bcc:
Subject: Re: Discussing the renewal of our Microsoft Teams Contract

Unsurprisingly, the school forwarded the petition to its internal IT department, typically relegating it to a simple technical issue.

The frustration of the IT department tasked with dealing with the 'Microsoft issue' was palpable. After all the expensive Azure training for employees, this campaign to stop buying Microsoft licences was not only seen as extra work, but as a direct threat to the integrity of the department. The group spent hours in front of the coffee machine complaining about the school's problems being dumped on their shoulders and the utopian attitude of the teachers. Their main argument was that the free software proposed by the teachers would not be up to the standard of the systems Teams and 365 already in place. What's more, no one wanted to learn how to install and manage this thing called 'NextCloud' on the school's infrastructure, which consisted of only a few old machines left there to run a few blogs and web pages for

teachers who still insisted on playing around with HTML and PHP on a local server. Above all, for the IT department managers, the irritation focused on the argument of dual-use technology. They felt that the teachers were exaggerating and, on a more personal level, the group felt judged and attacked in their role. Should every powerful computer now be considered a weapon? Although they had to acknowledge that the infrastructure of the IDF's specialised data centres had many similarities with what was happening in their workplace, they fiercely defended the neutrality of these systems. In the same way that these systems were used to kill, they were used by the national health ministry to save lives.

However, some IT department employees were quietly in favour of breaking Microsoft's monopoly. Like many others in the school, they were affected by a sense of powerlessness in the face of the real-time media coverage of the massacre, so boycotting the company seemed like a modest victory. Some added to this argument by defending the necessity of their jobs. The increasing outsourcing of their IT infrastructure to Microsoft data centres had led to the termination of two of their colleagues' contracts. They therefore saw a clear link between the security of their jobs and the development of an internal technological infrastructure. While management was categorically opposed to these changes, an internal resistance movement was brewing, even within the IT department!

From: studentsagainstgenocide@roseup.net
To: microsoftoutofourschool@roseup.net
Cc:
Bcc:
Subject: Solidarity with Teachers Against Microsoft

The air was thick in the corridors, in the canteen, around the vending machines. The Microsoft affair had taken a turn for the worse and the world order seemed to be heading for the worst.

The accentuation of totalitarian modes of knowledge transfer (via the tools themselves) perfectly aligned with widespread dispossession, joined the long experience of forced and individualised so-called formal education.

The assembly of students mobilised for Palestine had grown rapidly and had already organised itself into a coalition with Pal Action, Families for Peace, Palestine Solidarity Campaign, Students for Justice in Palestine and other local internationalist groups. Faced with the frustration of teachers and the paralysis of communications with their school board and IT department, they knew what needed to be done on the road to liberation.

How it's supposed to be played

It was surprisingly easy to find a second-hand version of the NVIDIA Jetson Orin Nano Super Developers Kit on https://www.2ememain.be/. We order the kit because we wonder if coming

closer to the actual hardware that NVIDIA produces would allow us to see a way through the contradictions present in the complex conflations of global finance, digital aesthetics, securitisation and militarisation that the hard- and software company stands at the nexus of.[7]

Its former owner assures us: 'I think the Jetson is a great device and I am convinced that you will feel the same.' The kit arrives the next day in the post, still packaged in its original, friendly plain cardboard box, accompanied by a cute paper card with an illustrated how-to-start manual. 'Ready, Set, Develop!'[8] NVIDIA markets the kit as an affordable and accessible hardware-software platform to both professionals as well as students and enthusiasts. The idea is that anyone with a few hundreds euros to spare can live the dream of powering up a real generative AI supercomputer in their living room while learning hands-on about AI and next-gen robotics.

NVIDIA is an American multinational corporation that sells "graphics processing units" or GPU's, specialized chips that are able to handle data-intensive tasks that demand a lot of computer power such as rendering graphics and AI processing. NVIDIA chips can be found in many different applications and devices, ranging from cloud-servers, urban combat drones, gaming platforms, mobile computing, high-end screens, edge-to-cloud, and 5G telecommunications.

The company is ranked third among the world's most valuable companies, with a current market capitalisation of €2.583 billion according to the website *companiesmarketcap.com* (accessed in April 2025). Even after a major market crash due to the launch of Chinese AI competitor, DeepSeek, its hard- and software products remain in high demand due to the hyped global desire for everything-AI. Promoting applications for gaming, telecom, scientific research, aviation and logistics, its numerous contracts with military research and development agencies, such as The Defense Advanced Research Projects Agency (DARPA) for the US Department of Defense, or arms companies such as Lockheed Martin, are widely known.[9]

In November 2023, ahead of schedule, the company completed the first phase of development of the world's largest supercomputer, an order placed by the Israeli government and aptly named Israel-1, providing numerous exaflops to a country known for its use of AI in the automation of mass assassinations.[10]

We became interested in NVIDIA after realising that its software and chips are used in both civilian and military applications, including in Gaza. But the company has not attracted the same global attention as Google with its involvement in the Nimbus project, either from tech workers at Google or from activists outside the company. Could it be that the ubiquity of their products in almost all of today's high-end digital applications prevents us from imagining a way out of their complicity?
After lunch, we gather with a small group in a corner of our collective space. We power up the board, and of course, it takes a few hours of downloads on our limited network speed before the installation is complete and we can start exploring the device. We decide to turn our backs

on this mesmerizing process and instead read through the user guide, watch instruction videos and scroll through software licenses.

We spend some time understanding the way this processor works and how its specific patented hardware design allows for high intensity computing. Witnessing its extravagant cooling fins power up from the installation process, we grapple in the meantime with the difference between Graphic Processing Units (GPU) like the Jetson and Computer Processing Units (CPU) in our PC laptops. We search for usages of the Jetson elsewhere, knowing that similar NVIDIA Jetson processors to the one that we just bought, are used in the LANIUS search-and-attack drone made by Elbit Systems, which are sold globally to border agencies and are thought to be used in Gaza.[11]

We read through websites advertising military appliances, selling the exact same chip that is next to us on the table. The deployment of the NVIDIA Jetson in Elbit Systems drones is no exception, we quickly find, and the integration of the platform in military tech is widespread. Wolf, a company offering "high-performance solutions for aerospace and defense" embeds the Jetson into their "switchblade" product series, combined with their own designs. Aitech systems (high-profile defense, space, and commercial programs across the globe) lists NVIDIA as their preferred solution provider, utilising Jetson modules as part of their autonomous, surveillance, and advanced weapons systems, Curtiss-Wright Defense Solutions integrates the chip and platform into what they call "hyper-rugged, scalable mission computers", Eizo (setting the standard within the defense market with high-performance graphics) proudly partners with NVIDIA to use the Jetson in their High-Performance Embedded Computing for Advanced Mission Processing, and so on.

These chips are complicit in domesticating relentless violent computing as they sit comfortably in the hands of an everyday user. We are thrown by how the Jetson is actually designed for dual-use, to function in both hobbyist and military environments, and how NVIDIA speaks openly and proudly about it. The lack of contradiction is already revealed by their original tagline: "The way it's meant to be played", as the company made its name as innovators in the gaming industry through their high performance graphics cards. The way it's meant to be played, is that you're always playing a game, although not because it isn't real, but because *you're the one who will always win*. With the means of endlessly expanding computational horizons held in your hands, the world is *yours*. By experiencing the innovations powering genocidal warfare at your fingertips, through the colonial legacies of militarized domination, there is no suspension of belief or fantasy. You might think you're in your living room playing Call of Duty to relax after a hard day at work, but you're actually already on the front line in Iraq or Afghanistan or Palestine. This is at the heart of the fallacy of dual-use.

Postscript

The conversations that led to the writing of these vignettes were permeated and animated by a multitude of questions that we use to think about the themes of the three vignettes:

How does unconditional trust in generative AI models support military logic? How do our mundane, everyday digital activities contribute to the solidification of violent AI-driven operations? What paradigm shift is taking place within security and intelligence agencies, where access to personal, commercial, and institutional data allows AI learning protocols to be optimised in order to analyse satellite photographs, transcribe conversations, or even translate texts while offering interpretations that become concretely actionable in war contexts? What does it mean that the extractive practices, totalitarian modes and imperialist projections of Microsoft Education are ultimately establishing an agenda that governs the imaginaries of what can be learned and taught? How can staff and students still make tactical use of the conceptually flawed term "dual-use technology" in an effort to resist the industrial complex of the classroom? How can we confront the domestication of combat hardware that offers increasingly accessible and low-cost opportunities for military development experiences, where the dual use of these systems is a feature rather than a problem? What new paradigms are emerging from the fusion of software and hardware as a means of optimising their specific and non-neutral use, dictated by the economy that produced them?

The vignettes indicate different entry points into a complex set of questions that we are keeping with us, while calling for systemic change here and now, one piece of hardware or software licence at a time. Without averting our gaze from the destruction that everyday technologies are complicit in, we want to continue to unite in trans*feminist and anti-colonial practices, to experiment with abolitionist practices to think about infrastructure differently, and to encourage a tactic of divestment from platforms to remain alert to binary and brutal oppositions that only reproduce deep injustices.

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[0] We use the construction 'genocidal rotation' to describe how the current actions of the state of Israel, which include ethnic cleansing, ecocide and scholasticide, can be read like a new turn of events, but also as a continuation and intensification of the long-term zionist colonial project.
[1] A list of border security projects funded by the HORIZON2020 programme including Israeli institutions can be obtained from the European Commission's Community Research and Development Information Service (CORDIS) website:
https://cordis.europa.eu/search?q=contenttype%3D%27project%27%20AND%20programme%2Fcode%3D%27H2020-EU.3.7.3.%27%20AND%20relatedRegion%2Fregion%2FeuCode%3D%3D%27IL%27&p=1&num=10&srt=Relevance:decreasing
[2] Speech by US Deputy Secretary of Defence Kathleen Hicks, "The Urgency to Innovate" (As Delivered), 28 August 2023.
[3] Joseph Clark, *DOD Releases AI Adoption Strategy*, DOD news, 2 November 2023
[4] Yaakov Lappin, *Israel's Military Demonstrates Unprecedented Coordination And Precision Strikes*, Zenger news, 14 November 2023
[5] Yuval Abraham, Israel developing ChatGPT-like tool that weaponises surveillance of Palestinians, +972 Magazine, 6 March 2025.

El evangelio según Google: el rol de las tecnologías y las Big Tech en el genocidio palestino

Las tecnologías digitales están siendo utilizadas para librar la guerra, perseguir y reprimir a la población palestina y controlar el relato a escala internacional

conocidos son ya los programas espía de vigilancia, que fabrica y exporta a todo el mundo y que primero "testea" usándolos contra defensores de derechos humanos en Palestina.

A todo esto hay que añadir la iniciativa de vigilancia "Lobo Azul", una aplicación para teléfonos inteligentes alimentada con información personal. La base de datos de esta aplicación se nutre de otra mayor, denominada "Manada de lobos", que pretende elaborar un perfil de cada residente en Cisjordania. Cada perfil contiene fotografías, historial familiar, educativo y una calificación de seguridad. Israel ordena a sus soldados que introduzcan, en el sistema de seguimiento Lobo Azul de las IDF, fotos y datos de al menos 50 palestinos en el transcurso de cada turno; obviamente, sin ningún consentimiento de los afectados. Aquellos soldados que no alcanzan la cuota son obligados a permanecer de servicio hasta que lo consiguen. Incluso compiten para ver quién puede acosar al mayor número de residentes. La información privada recopilada se utiliza para chantajear a la población palestina, con el fin de que se conviertan en informantes, o para reducir sus derechos y libertades. Todos los espacios de la sociedad civil palestina están continuamente asediados por la innovación en la tecnología de vigilancia.

El negocio alrededor del genocidio y el apartheid: la necesaria complicidad de las Big Tech.

Todos los sistemas descritos en el apartado anterior necesitan de una infraestructura de gestión y almacenamiento de datos extremadamente potente. La concentración de poder característica del capitalismo de plataformas y servicios de computación hace necesaria la complicidad de las grandes tecnológicas, conocidas como big tech. Especialmente relevantes son, en este caso, las empresas estadounidenses Amazon y Google. Mientras el ejército israelí bombardeaba casas, clínicas y escuelas en Gaza, y amenazaba con

expulsar a las familias palestinas de sus hogares en Jerusalén en mayo de 2021, los ejecutivos de Amazon Web Services y Google Cloud firmaban un contrato de 1.220 millones de dólares para proporcionar tecnología en la nube al gobierno y al ejército israelíes con el objetivo de incrementar su capacidad de computación. Esta ampliación de infraestructura mejora la eficiencia del procesamiento de datos, por lo que, tal y cómo alertan desde la campaña No Tech for apartheid (https://www.notechforapartheid.com/), estos contratos contribuyen a que el apartheid israelí sea más eficiente, más violento e incluso más mortífero para los palestinos. La última en añadirse a esta entente de la vigilancia ha sido Starlink, la compañía de servicios de internet mediante satélites propiedad de Elon Musk. Israel ha acordado implementar los servicios de Starlink en Gaza (https://www.elperiodico.com/es/internacional/20240108/israel-satelites-elon-musk-starlink-internet-gaza-guerra-palestina-96652283), pero únicamente para sus organismos y con el fin de reforzar sus telecomunicaciones en las fronteras de la Franja.

No obstante, poner en conocimiento de la opinión pública esta información no ha conseguido incentivar una reacción de boicot como la vista en otros casos, tales como grandes cadenas de supermercados o marcas comerciales. Incluso el propio movimiento de Boicot, Desinversión y Sanciones a Israel (BDS), sugiere presionar (https://bdsmovement.net/Act-Now-Against-These-Companies-Profiting-From-Genocide) a estas compañías tecnológicas sin llegar a pedir el boicot, puesto que considera que, para que esto último sea posible, deben existir "alternativas razonables". La concentración de poder de las big tech que tanto denunciamos desde los movimientos de derechos digitales, convierten a estas empresas en entes supremos e inevitables ante la inexistente soberanía y autonomía digital del resto de países y sus ciudadanías. Sin pudor, estas corporaciones se aprovechan de ello para seguir incrementando su capital económico y, a su vez, ampliar

su gran red de infraestructuras. Se erigen, así, como aliadas necesarias e inevitables de quienes hacen la guerra y de quienes están en contra de ella.

El mito del país innovador: crecimiento económico basado en la tecnología para la represión.

Aunque las empresas tecnológicas mencionadas hasta ahora obtienen grandes beneficios de sus negocios con el estado de Israel, no son las únicas favorecidas. Según Apoorva PG, coordinadora del BDS en Ásia-Pacífico, en este artículo para TNI (https://www.tni.org/en/article/seeing-the-world-like-a-palestinian), los profundos vínculos entre Israel y las grandes empresas tecnológicas han permitido un flujo bidireccional de beneficios y complicidades. Por un lado, esto permite a Israel desplegar tecnología de rápida innovación desarrollada por empresas transnacionales, e integrarla en su infraestructura de vigilancia, control y represión de los Territorios Ocupados Palestinos. Por otro, la tecnología israelí desarrollada para controlar al pueblo palestino se pone a disposición de las empresas tecnológicas nacionales e internacionales para que la amplíen y exporten a otros países con fines represivos. La campaña palestina Stop the Wall recoge, en su informe Digital Walls, distintas estadísticas que dan una idea del alcance del negocio existente alrededor de la "innovación israelí". Destaca el hecho de que más de 300 empresas multinacionales líderes en desarrollo tecnológico han establecido centros de Investigación y Desarrollo (I+D) en Israel, y representan el 50% del gasto en I+D en el estado de Israel. Además, estas corporaciones multinacionales han adquirido cerca de 100 empresas israelíes. Intel, Microsoft, Broadcom, Cisco, IBM y ENC se encuentran entre las empresas que más operaciones de adquisición han llevado a cabo. Por último, cabe destacar que alrededor del 10% de las start-ups tecnológicas del mundo valoradas en más de 1000 millones de dólares (conocidas como "unicornios") tienen su sede en Israel.

Esta relación simbiótica impulsa la inversión de las grandes tecnológicas en Israel y refuerza el crecimiento de la vigilancia y la tecnología digital militarizada, de la que Israel ha sido pionera. Se trata de un mercado creciente que confirma la dinámica hacia una militarización de todo el espacio digital y de las propias herramientas tecnológicas. Por estos motivos, desde algunos estamentos del propio sector tecnológico, se ha lanzado un llamamiento al boicot a la tecnologia cómplice del genocidio (https://genocide.vc/bit/), apelando tanto a trabajadoras como a inversores.

Algoritmos de control del relato: silenciamiento, desinformación y propaganda.

Hasta ahora hemos destacado el entramado existente alrededor de lo que podríamos llamar la "máquina de guerra, apartheid e innovación" israelí. Sin embargo, toda esta red de negocios y poder opera también para manipular y controlar la información que llega a la opinión pública internacional. Por lo tanto, no debería sorprendernos conocer la importancia que tienen estas mismas big tech en la propaganda, desinformación y silenciamiento del pueblo palestino y aquellos que lo apoyan.

En estos documentos se detallan mensajes clave y tácticas de acoso en línea que proporcionan una visión del esfuerzo masivo que realiza Israel para moldear el discurso en línea y silenciar las voces pro-palestinas.

Lee Fang y Jack Poulson, periodistas independientes, analizan en este artículo (https://www.leefang.com/p/inside-the-pro-israel-information) registros de chats y videollamadas obtenidas gracias a fuentes del gobierno israelí. En estos documentos se detallan mensajes clave y tácticas de acoso en línea que proporcionan una visión del esfuerzo masivo que realiza Israel para moldear el discurso en línea y silenciar las voces pro-palestinas. En este sentido, portavoces del IDF incluso participan en chats y encuentros de fondos de inversión (en los que comparten espacio con altos directivos de empresas e inversores de Silicon Valley), para explicar cómo los estadounidenses que apoyan a Israel pueden colaborar con grupos de presión y

relaciones públicas. Uno de estos fondos, formado por inversores de ideología muy cercana al sionismo y con gran poder de influencia en el sector, es J-Ventures. En una presentación ofrecida el 22 de noviembre por Adam Fisher (https://www.leefang.com/p/inside-the-pro-israel-information), director en Israel de Bessemer Venture Partners, explicó al público, en su gran mayoría directivos del sector tecnológico, cómo "ridiculiza" eficazmente a voces influyentes pro-palestinas en Twitter/X, entre ellas la de la congresista palestino-estadounidense Rashida Tlaib y la del inversor de capital riesgo Paul Graham. El espacio digital ha sido un foco de activismo pro-israelí desde el inicio de la actual operación militar. Se trata de una estrategia deliberada que se sirve, también, de la monetización y el modelo de negocio de las redes sociales, es decir, de la publicidad. Los primeros quince días de respuesta militar al atentado de HAMAS, el Ministerio de Asuntos Exteriores israelí publicó hasta 75 anuncios diferentes en línea, y gastó millones de dólares en la compra de espacios en plataformas como YouTube y Twitter/X. El ministerio, que gestiona varias cuentas muy activas en estas redes, también se ha dirigido directamente a los aliados estadounidenses para orientar el activismo pro-israelí en las plataformas sociales, señalando y acosando a celebridades que han manifestado su apoyo a la resistencia palestina.

Esas instrucciones parecen haber sido seguidas de forma diligente por Meta y todos sus productos (Facebook, Instagram, Messenger). Human Rights Watch (HRW) (https://www.hrw.org/report/2023/12/21/metas-broken-promises/systemic-censorship-palestine-content-instagram-and) analizó más de mil casos de censura en línea en más de 60 países, identificando seis patrones comunes: eliminación de contenidos, suspensión o eliminación de cuentas, imposibilidad de participar en contenidos, imposibilidad de seguir o etiquetar cuentas, restricción del uso de funciones como Instagram y Facebook Live, y bloqueos. Según HRW, la eliminación de expresiones pacíficas de apoyo a la

población palestina es el resultado de "políticas de Meta defectuosas y de su aplicación incoherente y errónea, así como de la excesiva dependencia de herramientas automatizadas para moderar el contenido y la influencia indebida del gobierno en la eliminación de los mismos". Ante esta situación surge la campaña Stop silencing Palestine (https://stopsilencingpalestine.com/), que pide a Meta que revise sus prácticas y políticas de moderación de contenidos y ponga fin a la censura sistemática de las voces palestinas.

Pero la influencia de la propaganda israelí va más allá de las grandes plataformas, y se extiende también a los sistemas de recomendación de contenidos que usan la inmensa mayoría de medios de comunicación digitales. Las dos empresas más importantes de este mercado, Outbrain y Taboola, radicadas en Israel, han manifestado también su apoyo a la masacre en Gaza. Medios de comunicación de todo el espectro político utilizan sus sistemas en nuestro país, tal y como destapa esta investigación de El Salto. El estado sionista ha lanzado una verdadera cruzada digital contra la libertad de expresión de la población palestina, que incluye a cualquiera que ose mostrar en público su solidaridad con ella.

La IA generativa muestra sus sesgos sionistas.

No queríamos terminar este análisis sin mencionar el comportamiento de las inteligencias artificiales generativas, las grandes protagonistas de las noticias tecnológicas en 2023. Por ejemplo, en este artículo de The Guardian (https://www.theguardian.com/technology/2023/nov/02/whatsapps-ai-palestine-kids-gun-gaza-bias-israel), se detalla cómo la IA generativa de WhatsApp muestra a niños armados cuando se le pregunta por "Palestina" y, sin embargo, con la instrucción "niño israelí" genera dibujos animados de niños jugando al fútbol y leyendo. En respuesta a "ejército israelí", la IA crea dibujos de soldados sonriendo y rezando, sin armas de por medio. Estas respuestas dicen

más sobre las empresas que las poseen que sobre las propias tecnologías.

También ChatGPT responde de maneras diferentes cuando se le pregunta por el derecho a la libertad de israelíes y palestinos. Como podemos ver en el artículo de Bruno Rodrigues en Medium (https://medium.com/@rodriguesgbruno/what-chat-gpt-has-to-teach-us-about-the-israel-vs-palestine-conflict-c0fee2696c37), la IA conversacional de OpenAI responde inmediatamente "Sí, como cualquier otro pueblo, los ciudadanos israelíes tienen el derecho fundamental a la libertad" cuando se le pregunta por ello. Sin embargo, al referirse a la libertad de los palestinos, en la primera frase ya se objeta que "es un tema complejo", y "de intenso debate" que incluye "divergencia de opiniones sobre cómo debe aplicarse el derecho a la autodeterminación palestina".

Cuestionar nuestro papel de usuarias y pasar a la acción.

Desde la selección y bombardeo de objetivos a la propaganda y la desinformación, hemos visto cómo la tecnología está redefiniendo la forma de hacer la guerra. Permite y habilita un genocidio con control quirúrgico de la población y de la opinión pública. Todo ello con la complicidad y el apoyo de las grandes compañías tecnológicas, que además salen económicamente beneficiadas al ofrecer sus servicios y pleitesía a un estado opresor. En este contexto no sólo está en peligro el pueblo palestino, sino que está en juego el futuro de los derechos de las sociedades civiles en todo el mundo. Al permitir este tipo de prácticas estamos marcando un peligroso y macabro precedente sobre el papel que las empresas de tecnología digital pueden tener en el control, opresión y represión de la sociedad civil.

La eliminación de la separación entre lo civil y lo militar convierte a las Big Tech en empresas de fabricación de armas de guerra y, por lo tanto, nos transforma a nosotras, usuarias, en soldados cómplices o potenciales objetivos, sin tan siquiera darnos cuenta.

Aunque las guerras siempre han tenido un fuerte componente tecnológico y la innovación militar ha marcado el desarrollo de nuevas tecnologías, el escenario actual diluye cada vez más la separación entre la tecnología de uso civil y la de uso militar. De repente, tecnología que usamos habitualmente se utiliza para matar,

segregar o espiar a la población (como en el caso de los teléfonos móviles que llevamos en el bolsillo, o los sistemas de IA que entrenamos a diario sin darnos cuenta). La eliminación de la separación entre lo civil y lo militar convierte a las Big Tech en empresas de fabricación de armas de guerra y, por lo tanto, nos transforma a nosotras, usuarias, en soldados cómplices o potenciales objetivos, sin tan siquiera darnos cuenta. Así pues, cuestionarnos la complicidad con un estado genocida pasa por cuestionarnos también nuestro papel de usuarias de ciertos servicios tecnológicos. Organizarnos para seguir exigiendo el alto el fuego, así como para señalar el entramado de servicios digitales que facilitan el exterminio del pueblo palestino, es urgente y prioritario, también desde los movimientos tecnopolíticos y de defensa de los derechos digitales.

Agradecimientos.

Este artículo ha sido posible gracias al trabajo colaborativo de una comunidad de personas interesadas en la tecnopolítica y el poder

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Informar de un error

SOBRE ESTE BLOG

struggles, then there is no reason to fear intervention, or strategic thought. Any perspective militants and intellectuals might bring to a struggle is either al- ready represented within it or, on the contrary, capable of being confronted as one of many obstacles and impasses antagonists encounter in their self- education. Strategic thought is not external to struggles, but native to them, and every set of victories or failures opens up new strategic prospects — possi- ble futures — which must be examined and whose effects in the present can be accounted for. In describing these prospects, theory inevitably takes sides among them. This is not to issue orders to struggles, but to be ordered by them.

LOGISTICS, COUNTERLOGISTICS AND THE COMMUNIST PROSPECT

THEO RY FROM THE GROUND

The following essay is an experiment in theory writing. It attempts to render ex- plicit the link between theory as it unfolds in the pages of communist journals and theory as it unfolds in the conduct of struggles, demonstrating how reflec- tions about the restructuring of capitalism emerge as the consequence of par- ticular moments of struggle. From these theoretical horizons, specific strategic prospects also emerge, and inasmuch as they are discussed on the ground and affect what happens there, we can only with great effort avoid them.

We can (and perhaps should) always ask of the theories we encounter, *Where are we? In response to which practical experience has this theory emerged?* In what follows we are, for the most part, in the port of Oakland, California, be- neath the shadows of cyclopean gantry cranes and container ships, pacing around anxiously with the 20,000 other people who have entered the port in or- der to blockade it, as part of the so-called "General Strike" called for by Occupy Oakland on November 2, 2011. Every participant in the blockade that day surely had some intuitive sense of the port's centrality to the northern Californian economy, and it is with this intuitive orientation that theory begins. If asked, they would tell you that a sizeable fraction of what they consumed originated overseas, got put onto ships, and passed through ports like Oakland's en route to its final destination. As an interface between production and consumption, between the US and its overseas trading partners, between hundreds of thou- sands of workers and the various forms of circulating capital they engage, the quieted machinery of the port quickly became an emblem for the complex total- ity of capitalist production it seemed both to eclipse and to reveal.

For our blockaders, then, all manner of questions unfolded directly from their

encounter with the space of the port and its machinery. How might we produce a map of the various companies — the flows of capital and labour — directly or indirectly affected by a blockade of the port, by a blockade of particular terminals? Who sits at one remove? At two removes or three? Additionally, questions emerged about the relationship between the blockade tactic and the grievances of those who took part. Though organised in collaboration with the local section of the ILWU (the dockworker's union), in solidarity with the threatened workers in Longview, Washington, few people who came to the blockade knew anything about Longview. They were there in response to the police eviction of Occupy Oakland's camp and in solidarity with whatever they understood as the chief grievances of the Occupy movement. How, then, to characterise the relationship between the blockaders, many of whom were unemployed or marginally employed, and the highly organised port workers? Who was affected by such a blockade? What is the relationship between the blockade and the strike tactic? Once asked, these questions linked the moment of the blockade to related mobilisations: the *piqueteros* of the Argentine uprisings of the late 1990s and early 2000s, unemployed workers who, absent any other way of prosecuting their demands for government assistance, took to blockading roads in small, dispersed bands; the *piquets volants* of the 2010 French strikes against proposed changes in pension law, bands of dispersed picketers who supported blockades by workers but also engaged in their own blockades, independent of strike activity; the recent strikes by workers in IKEA's and Wal-Mart's supply chains; and everywhere, in the season of political tumult that follows on the crisis of 2008, a proliferation of the blockade and a waning of the strike as such (with the exception of the industrial "BRICS", where a renegade labour formation has initiated a new strike wave).

LOGISTICS AND HYDRAULIC CAPITALISM

These are not questions that belong solely to formal theory. They were debated immediately by those who participated in the blockade and who planned for a second blockade a month later.[4] Some of these debates invoked the concept of "globalisation" to make sense of the increasing centrality of the port and international trade within capitalism, in an echo of the alter-globalisation movement of the early 2000s. But it has always been unclear what the term "globalisation" is supposed to mean, as marker for a new historical phase. Capitalism has been global from the very start, emerging from within the blood-soaked matrix of the mercantile expansion of the early modern period. Later on, its fac-

tories and mills were fed by planetary flows of raw material, and produce for a market which is likewise international. The real question, then, is what kind of globalisation we have today. What is the *differentia specifica* of today's globalisation? What is the precise relationship between production and circulation?

Today's supply chains are distinguished not just by their planetary extension and incredible speed but by their direct integration of manufacture and retail, their harmonisation of the rhythms of production and consumption. Since the 1980s, business writers have touted the value of "lean" and "flexible" production models, in which suppliers maintain the capacity to expand and contract production, as well as change the types of commodities produced, by relying on a network of subcontractors, temporary workers, and mutable organisational structures, adaptations that require precise control over the flow of goods and information between units.[5] Originally associated with the Toyota Production System, and Japanese manufacturers in general, these corporate forms are now frequently identified with the loose moniker Just In Time (JIT), which refers in the specific sense to a form of inventory management and in general to a production philosophy in which firms aim to eliminate standing inventory (whether produced in-house or received from suppliers). Derived in part from the Japanese and in part from Anglo-American cybernetics, JIT is a circulationist production philosophy, oriented around a concept of "continuous flow" that views everything not in motion as a form of waste (*muda*), a drag on profits. JIT aims to submit all production to the condition of circulation, pushing its velocity as far toward the light-speed of information transmission as possible. From the perspective of our blockaders, this emphasis on the quick and continuous flow of commodities multiplies the power of the blockade. In the absence of standing inventories, a blockade of just a few days could effectively paralyse many manufacturers and retailers.[6]

In JIT systems, manufacturers must coordinate upstream suppliers with downstream buyers, so speed alone is insufficient. Timing is crucial. Through precise coordination, firms can invert the traditional buyer-seller relationship in which goods are first produced and then sold to a consumer. By replenishing goods at the exact moment they are sold, with no build-up of stocks along the way, JIT firms perform a weird sort of time-travel, making it seem as if they only make products that have already been sold to the end-consumer. As opposed to the older, "push production" model, in which factories generated massive stockpiles of goods that retailers would clear from the market with promotions and

coupons, in today's "pull" production system "retailers share POS [point-of-sale] information with their vendors who can then rapidly replenish the retailers' stock".[7] This has lead to the functional integration of suppliers and retailers, under terms in which the retailers often have the upper hand. Massive buyers like Wal-Mart reduce their suppliers to mere vassals, directly controlling product design and pricing while still retaining the flexibility to terminate a contract if needed. They gain the benefits of vertical integration without the liability that comes from formal ownership. Whereas in the early 1980s some thought that the emphasis on flexibility and dynamism would shift the balance of power from big, inflexible multinationals to small, agile firms, lean production has instead only meant a phase change rather than a weakening of the power of multinational firms. The new arrangement features what Bennett Harrison has called the "concentration without centralisation" of corporate authority.[8]

Lean manufacturing, flexibility, just-in-time inventory systems, "pull" production: each one of these innovations now forms a component part of the so-called "logistics revolution", and the corresponding "logistics industry", which consists of in-house and third-party specialists in supply-chain design and management. Enabled by the technical transformations of the shipping and transport industry, containerisation in particular, as well as the possibilities afforded by information and communications technology, logistics workers now coordinate different productive moments and circulatory flows across vast international distances, ensuring that the where and when of the commodity obtains to the precision and speed of data. Confirming the veracity of the oft-quoted passage from Marx's *Grundrisse* about the tendential development of the world market, through logistics, capital "strives simultaneously for a greater extension of the market and for greater annihilation of space by time".[9] But logistics is more than the extension of the world market in space and the acceleration of commodital flows: it is the active power to coordinate and choreograph, the power to conjoin and split flows; to speed up and slow down; to change the type of commodity produced and its origin and destination point; and, finally, to collect and distribute knowledge about the production, movement and sale of commodities as they stream across the grid.

Logistics is a multivalent term. It names an industry in its own right, composed of firms that handle the administration of shipping and receiving for other corporations, as well as an activity that many businesses handle internally. But it

also refers, metonymically, to a transformation of capitalist production overall: the "logistics revolution". In this latter sense, logistics indexes the subordination of production to the conditions of circulation, the becoming-hegemonic of those aspects of the production process that involve circulation. In the idealised world-picture of logistics, manufacture is merely one moment in a continuous, Heraclitean flux; the factory dissolves into planetary flows, chopped up into modular, component processes which, separated by thousands of miles, combine and recombine according to the changing whims of capital. Logistics aims to transmute all fixed capital into circulating capital, the better to imitate and conform to the purest and most liquid of forms capital takes: money. This is impossible, of course, since the valorisation process requires fixed capital outlays at some point along the circuits of reproduction, and therefore someone somewhere will have to shoulder the risk that comes with investing in immobile plant and machinery. But logistics is about mitigating this risk, it is about transforming a mode of production into a mode of circulation, in which the frequencies and channel capacities of the circuits of capital are what matters. In this the logistics revolution conforms to the hydraulic conception of capitalism outlined by Deleuze and Guattari in the 1970s, in which surplus value results not so much from the irreversible transformation of worked matter but from the conjunction of one flow (money) with another (labour).[10] In this account, influenced by Fernand Braudel's description of the origins of capitalism, and its revision by world-systems theory, capital is nothing so much as the commander of flows, breaking and conjoining various currents in order to create a vast irrigation and drainage of social power. Logistics turns solids into liquids — or at its extreme, into electrical fields — taking the movement of discrete elements and treating them as if they were oil in a pipeline, flowing continuously at precisely adjustable pressures.[11]

THE USE-VALUE OF LOGISTICS

So far our project of cognitive mapping has successfully situated our blockaders within a vast spatial horizon, a network of reticulated flows, against the backdrop of which even the gargantuan containerships, even the teeming thousands of blockaders, are mere flyspecks. But the picture we have given is without depth, without history; it is, in other words, a picture, and we might wonder whether some of the disorientation to which the concept of the cognitive map responds is aggravated by the spatial (and visual) approach. Perhaps "map" functions as metaphor more than anything else, referring to an elaboration of

concepts and categories in both spatial and temporal dimensions. A map, but also a story, chart, and diagram, because once we adopt the view *from* somewhere, the view *for* somebody, we place ourselves between a past and a future, at the leading edge of a chain of causes that are as much in need of mapping as the spatial arrangement of the supply chain, especially if we want to have any sense of what might happen next.

In other words, we will want to know why capital turned to logistics. Why did capital reorganise in this manner? In pursuit of which advantages and in response to which impasses? One answer, hinted at above, is that logistics is a simple accelerator of commodity flows. Logistics is a method to decrease the turnover time of capital, and thereby raise total profits. Short turnover times and quick production cycles can produce very high total profits with even the very low rates of profit (per turnover) which capitalists encountered in the 1970s. Logistics was one solution, then, to "the long downturn" that emerged in the 1970s and the general crisis it ushered in, as opportunities for profit-taking through investment in the productive apparatus (in new plant and machinery) began to vanish. As we know from numerous accounts, one result is that capital flowed into financial assets, real estate, and the like, amplifying the velocity and bandwidth of the money supply and the credit market, and concocting novel forms of finance capital. But this well-documented process of financialisation had as its hidden counterpart a massive investment of capital in the complementary sphere of commodity (rather than money) circulation, increasing the throughput of the transportation system and accelerating the velocity of commodity capital through a buildout in the form of tankers, port complexes, railyards, robotically-controlled distribution centers, and the digital and network technology needed to manage the increased volume and complexity of trade. The shipping container and the commodity future were thus complementary technical innovations, streamlining and supercharging different segments of the total circuit of reproduction. The ever-faster rotations of credit and commodities around the globe are mutually enabling relays. However, investment in these areas is not just about brute velocity; it also aims at reducing the associated costs of circulation and thereby increasing the total load of the transport systems. Alongside the obvious economies of scale and mechanisation afforded by container technology, integrated information systems vastly reduce the administrative costs associated with circulation, freeing up more money for direct investment in production.[12]

But these developments cannot be understood in terms of quantitative increase and decrease alone: increase in speed and volume of commodital flows, decrease in overhead. There is an important qualitative goal here as well, described by logistics as "agility"— that is, the power to change, as quickly as possible, the speed, location, origin and destination of products, as well as product type, in order to meet volatile market conditions. Corporations aim for "responsive supply chains", as the chapter title of one popular logistics handbook has it, "such that [they] can respond in shorter time-frames both in terms of volume change and variety changes".[13] In their interventive role, logistics experts might seek to identify and remedy bottlenecks in order to maintain agility. But as a matter of preventive design, specialists will strive to synchronise and distribute information across the entire supply chain so that suppliers can take appropriate action *before* intervention becomes necessary. This distributed information is referred to as a "virtual supply chain", a chain of transmitted symbolic representations that flows opposite to the physical movement of commodities. Entirely separate firms might use distributed data of this sort to coordinate their activities. The result, as Bonacich and Wilson note, is that "competition … shift[s] from the firm level to the supply chain level".[14] But transparency of data does not level the playing field at all; typically, one of the actors in the supply-chain network will retain dominance, without necessarily placing itself at the centre of operations — Wal-Mart, for instance, has insisted its suppliers place Radio Frequency Identification (RFID) tags on pallets and containers, allowing it to manage its inventory much more effectively, at considerable cost to the suppliers.[15]

Before we consider the final reason for the logistics revolution, a brief historical note is in order. Until WWII, the field of corporate or business logistics did not exist at all. Instead, logistics was a purely military affair, referring to the methods that armies used to provision themselves, moving supplies from the rear to the front line, a mundane but fundamental enterprise which military historians since Thucydides have acknowledged as a key determinant of the success of expeditionary wars. Business logistics as a distinct field evolved in the 1950s, building upon innovations in military logistics, and drawing upon the interchange of personnel between the military, industry and the academy so characteristic of the postwar period, interchanges superintended by the fields of cybernetics, information theory and operations research. The connection between military and corporate logistics remained intimate. For instance, though Malcolm McLean introduced stackable shipping containers in the 1950s, and

had already managed to containerise some domestic transport lines, it was his Sea-Land Service's container-based solution to the logistics crisis of the Vietnam War that generalised the technology and demonstrated its effectiveness for international trade.[16] Likewise, RFID technology was first deployed by the US military in Iraq and Afghanistan, at which point Wal-Mart begin exploring its use. Shortly afterwards, the Department of Defense and Wal-Mart issued mandates to their largest suppliers, requiring them to use RFID tags on their merchandise. The link between corporate logistics and military logistics is so strong that the many of Wal-Mart's managers and executives — who set the standard for the industry as a whole — come from the military.[17]

Logistics, we might say, is war by other means, war by means of trade. A war of supply chains that conquers new territories by suffusing them with capillarial distributions, ensuring that commodities flow with ease to the farthest extremities. From this martial perspective, we might usefully distinguish, however, between an offensive and a defensive logistics. The offensive forms we have already described above: logistics seeks to saturate markets, reduce costs and outproduce competitors, maintain maximum throughput and maximum product variety. In this offensive aspect, logistics emphasises flexibility, plasticity, permutability, dynamism, and morphogenesis. But it finds its complement in a series of protocols which are fundamentally defensive, mitigating supply chain risk from blockades and earthquakes, strikes and supplier shortages. If "agility" is the watchword of offensive logistics, defensive logistics aims for "resilience" and emphasises the values of elasticity, homeostasis, stability, and longevity. But resilience is only ostensibly a conservative principle; it finds stability not in inflexibility but in constant, self-stabilising adaptivity.[18] In this sense, the defensive and the offensive forms of logistics are really impossible to disentangle, since one firm's agility is another's volatility, and the more flexible and dynamic a firm becomes the more it "exports" uncertainty to the system as a whole, requiring other firms to become more resilient. In any case, we can expect that, in the context of the economic crisis and the looming environmental collapse, logistics will become more and more the science of risk management and crisis mitigation.

Logistics is capital's art of war, a series of techniques for intercapitalist and interstate competition. But such wars are, at the same time, always fought through and against workers. One of the most significant reasons for the extension, complication and lubrication of these planetary supply chains is that they

allow for arbitrage of the labour market. The sophisticated, permutable supply chains of the contemporary world make it possible for capital to seek out the lowest wages anywhere in the world and to play proletarians off of each other. Logistics was therefore one of the key weapons in a decades-long global offensive against labour. The planetary supply chains enabled by containerisation effectively encircled labour, laying siege to its defensive emplacements such as unions and, eventually, over the course of the 1980s and 1990s, completely crushing them. From there, with labour on the run, logistics has enabled capital to quickly neutralise and outmanoeuvre whatever feeble resistance workers mount. Although capital must deal with the problem of sunk investments in immovable buildings, machines, and other infrastructures, reconfigurable supply chains allow it unprecedented power to route around, and starve, troublesome labour forces. By splitting workers into a "core" composed of permanent workers (often conservative and loyal) and a periphery of casualised, outsourced and fragmented workers, who may or may not work for the same firm, capital has dispersed proletarian resistance quite effectively. But these organisational structures require systems of coordination, communication and transport, opening capital up to the danger of disruption in the space of circulation, whether by workers charged with circulating commodities or by others, as with the port blockade, who choose circulation as their space of effective action, for the simple reason that capital has already made this choice as well. The actions of the participants in the port blockade are, in this regard, doubly determined by the restructuring of capital. They are there not only because the restructuring of capital has either left them with no jobs at all or placed them into jobs where action as workers according to the classical tactics of the worker's movement has been proscribed, but also because capital itself has increasingly taken the sphere of circulation as the object of its own interventions. In this regard, theory provides us not only with the *why* of capital's restructuring but the *why* of a new cycle of struggles.

VISIBILITY AND PRAXIS

It should be obvious by now that logistics is capital's own project of cognitive mapping. Hence, the prominence of "visibility" among the watchwords of the logistics industry. To manage a supply chain means to render it transparent. The flows of commodities in which we locate our blockaders are doubled by flows of information, by a signifying chain that superintends the commodity chain, sometimes without human intervention at all. Alongside the predictive

models of finance, which aim to represent and control the chaotic fluctuations of the credit system and money, logistics likewise manages the complex flows of the commodity system through structures of representation. We might imagine, then, a logistics against logistics, a counter-logistics which employs the conceptual and technical equipment of the industry in order to identify and exploit bottlenecks, to give our blockaders a sense of where they stand within the flows of capital. This counter-logistics might be a proletarian art of war to match capital's own *ars belli*. Imagine if our blockaders knew exactly which commodities the containers at particular berths, or on particular ships, contained; imagine if they could learn about the origin and destination of these commodities and calculate the possible effects — functionally and in dollars — of delays or interruptions in particular flows. Possession of such a counterlogistical system, which might be as crude as a written inventory, would allow antagonists to focus their attention where it would be most effective. Taking, for example, the situation of the French pension law struggles of 2010, in which mobile blockades in groups of twenty to a hundred moved throughout French cities, supporting the picket lines of striking workers but also blockading key sites independently, the powers of coordination and concentration permitted by such a system are immediately apparent.[19] This is one example of the strategic horizons which unfold from within struggles, even if most discussions of such counterlogistics will have to be conducted with particular occasions in mind.

But beyond the practical value of counterlogistic information, there is what we might call its *existential* value: the way in which being able to see one's own actions alongside the actions of others, and being able to see as well the effects of such concerted action, imbues those actions with a meaning they might have otherwise lacked. The contagiousness of the Arab Spring — for example — arises in part from the affirmative effect of transmitted images of struggle. Being able to see one's own action in the face of state violence reflected in and even enlarged by the actions of others can be profoundly galvanising. This is another one of the values of theory with regard to praxis — the ability to place struggles side by side, to render struggles visible to each other and to themselves.

This importance of visibility — or legibility, as he calls it — is essential to one of the best discussions of the restructuring of labour in late capitalism, Richard Sennett's *The Corrosion of Character*. Sennett suggests that the "weak work

identity" of contemporary workplaces — distinguished mainly by computerisation, in his treatment — results from the utter illegibility of the work processes to the workers themselves. Visiting a bakery which he had studied decades earlier for his first book, *The Hidden Injuries of Class,* Sennett finds that, in place of the physically challenging processes of the 1960s bakery, workers now used computer-controlled machines which can produce any kind of bread according to changing market conditions, simply by pressing a few buttons. As a result, unlike bakers in the past, the workers do not identify with their jobs or derive satisfaction from their tasks, precisely because the functioning of the machines is fundamentally opaque to them. The difference between entering values into a spreadsheet and baking bread is negligible to them. Concrete labour has become fundamentally abstract, scrambling at the same time distinctions between material and immaterial, manual and mental labour:

> Computerized baking has profoundly changed the balletic physical activities of the shop floor. Now the bakers make no physical contact with the materials or the loaves of bread, monitoring the entire process via on-screen icons which depict, for instance, images of bread color derived from data about the temperature and baking time of the ovens; few bakers actually see the loaves of bread they make. Their working screens are organized in the familiar Windows way; in one, icons for many more different kinds of bread appear than had been prepared in the past — Russian, Italian, French loaves all possible by touching the screen. Bread had become a screen representation.

> As a result of working in this way, the bakers now no longer actually know how to bake bread. Automated bread is no marvel of technological perfection; the machines frequently tell the wrong story about the loaves rising within, for instance, failing to gauge accurately the strength of the rising yeast, or the actual color of the loaf. The workers can fool with the screen to correct somewhat for these defects; what they can't do is fix the machines, or more important, actually bake bread by manual control when the machines all too often go down. Program-dependent laborers, they can have no hands-on knowledge. The work is no longer legible to them, in the sense of understanding what they are doing.[20]

There is an interesting paradox here, which Sennett draws out very nicely in the following pages: the more transparent and "user-friendly" the computerised

processes are, the more opaque the total process they control becomes. His conclusion should trouble any simplistic conception of the powers of visibility or the "cognitive map" as such, a problem that Jameson recognised early on, declaring "informational technology the representational solution as well as the representational problem of [the] world system's cognitive mapping".[21] The problems for Sennett's workers, as well as for our blockaders, are practical as much as they are epistemological, a matter of doing and knowing together. Unless the representations such systems provide widen our capacity to do and to make, to effect changes upon the world, they will make that world more rather than less opaque, no matter how richly descriptive they might be. And though Sennett's discussion is geared only toward the world of labour (and imbued with typical left-wing nostalgia for the *savoir-faire* and stable identities that skilled work entailed) the problems of legibility pertain as much to our blockaders as to the dockworkers at the port. To persist beyond an initial moment, struggles need to recognise themselves in the effects they create, they need to be able to map out those effects, not just by positioning themselves within the abstract and concrete space of late capital, but within a political sequence that has both past and future, that opens onto a horizon of possibilities. All of this requires knowledge but it requires knowledge that can be practiced, that can be worked out.

Our blockaders are therefore dispossessed of usable knowledge by a technical system in which they appear only as incidental actors, as points of relay and insertion which require at most a stenographic compression of their immediate environs into a few kilobytes of usable information. Bernard Stiegler, who despite an often tedious Heideggerian theoretical apparatus is one of the best contemporary theorists of technology, describes this process as "cognitive and affective proletarianization", where proletarians are dispossessed, as producers, of *savoir faire* and, as consumers, of *savoir vivre.* This is part of a long history of what Stiegler calls "grammatization", in which knowledge and memory is discretised into reproducible and combinatorial bodily gestures — phonemes, graphemes, keystrokes, bits — and then exteriorised through inscription in matter.[22] The digital and telecommunication technology of contemporary grammatisation is the final stage of this process, such that our memories and cognitive faculties now exist in the data cloud, as it were, part of a distributed technological prosthesis without which we are effectively incapable of orienting ourselves or functioning. In this largely persuasive account, which thankfully cuts against the optimistic readings of information technology as a progressive socialisation

of "general intellect", we are dispossessed not just of the means of production but the means of thought and feeling as well.

In many ways, Stiegler shares a great deal with the rich exploration of the concepts of alienation, fetishism and reification that followed the popularisation of the early Marx in the 1960s, by Herbert Marcuse, Guy Debord and others. We might, for this reason, wonder about the latent humanism in Stiegler. Sennett, however, provides us with an important caveat against reading Stiegler in humanist terms: whereas a certain kind of classic Marxist analysis might expect his bakers to want to reappropriate the knowledge of which they had been dispossessed by the machines, few of them have any such desires. Their real lives are elsewhere, and hardly any of them expect or desire dignity and meaning from their jobs as bakers. The only person who conforms to the expected outline of the alienated worker, in Sennett's bakery, is the foreman, who worked his way up from apprentice baker to manager, and takes the wastage and loss of skill in the bakery as a personal affront, imagining that if the bakery were a cooperative the workers might take more interest in knowing how things are done. The other workers, however, treat work not as the performance of a skill but as a series of indifferent applications of an abstract capacity to labour. Baking means little more than "pushing buttons in a Windows program designed by others". [23] The work is both illegible to them, and utterly alien to their own needs, but not alien in the classic sense that they recognise it as a lost or stolen part of themselves they hope to recover through struggle. This is one of the most important consequences of the restructuring of the labour process superintended by the logistics revolution: the casualisation and irregularisation of labour, the disaggregation of the work process into increasingly illegible and geographically separate component parts, as well as the incredible powers which capital now has to defeat any struggle for better conditions, mean that it is not only impossible for most proletarians to visualise their place within this complex system but it is also impossible for them to identify with that place as a source of dignity and satisfaction, since its ultimate meaning with regard to the total system remains elusive. Most workers today cannot say, as workers of old could (and often did): *It is we who built this world! It is we to whom this world belongs!* The restructuring of the mode of production and the subordination of production to the conditions of circulation therefore forecloses the classical horizon of proletarian antagonism: seizure of the means of production for the purposes of a worker-managed society. One cannot imagine seizing that which one cannot visualise, and inside of which one's place remains uncertain.

THE RECONFIGURATION THESIS

The difficulties which Sennett's bakers (or our blockaders) encounter are not simply failures of knowledge, ones that can be solved through pedagogical intervention; as valuable as a cognitive map of these processes might be, the problems we confront in *visualising* some self-management of existing productive means originate from the *practical* difficulties — in my view, impossibilities — that such a prospect would encounter. The opacity of the system, in this regard, emerges from its intractability, and not the other way around. In an insightful article on the logistics industry and contemporary struggle, Alberto Toscano (who has lately devoted considerable effort to critiquing theorists of communisation) faults the "space-time of much of today's anticapitalism" for its reliance on "subtraction and interruption, not attack and expansion".[24] Toscano proposes, as an alternative, an anticapitalist logistics which treats the various productive sites and infrastructures of late capitalism as "potentially reconfigurable" rather than the object of "mere negation or sabotage". No doubt, any struggle which wants to overcome capitalism will need to consider "what use can be drawn from the dead labours which crowd the earth's crust", but there is no reason to assume from the start, as Toscano does, that all existing means of production must have some use beyond capital, and that all technological innovation must have, almost categorically, a progressive dimension which is recuperable through a process of "determinate negation". As we saw above, the use-value which the logistics industry produces is a set of protocols and techniques that enable firms to seek out the lowest wages anywhere in the world, and to evade the inconvenience of class struggle when it arises. In this sense, unlike other capitalist technologies, logistics is only partly about exploiting the efficiencies of machines in order to get products to market faster and more cheaply, since the main purpose of the faster and cheaper technologies is to offset the otherwise prohibitive cost of exploiting labour forces halfway around the world. The technological ensemble which logistics superintends is therefore fundamentally different than other ensembles such as the Fordist factory; it saves on labour costs by decreasing the wage, rather than increasing the productivity of labour. To put it in Marxist terms, it is absolute surplus value masquerading as relative surplus value. The use-value of logistics, for capital, is exploitation in its rawest form, and thus it is truly doubtful that logistics might form, as Toscano writes, "capitalism's pharmakon, the cause for its pathologies (from the damaging hypertrophy of long-distance transport of commodities to the aimless sprawl of contemporary conurbation) as well as the potential do-

main of anti-capitalist solutions".

For workers to seize the commanding heights offered by logistics — to seize, in other words, the control panel of the global factory — would mean for them to manage a system that is constitutively hostile to them and their needs, to oversee a system in which extreme wage differentials are built into the very infrastructure. Without those differentials, most supply-chains would become both wasteful and unnecessary. But perhaps "repurposing" means for Toscano instead a kind of making-do with the machinery of logistics as we find it, seeing what other purposes it can be put to, rather than imagining an appropriation of its commanding heights? Any revolutionary process will make do with what it finds available as a matter of necessity, but it is precisely the "convertibility" or "reconfigurability" of these technologies that seems questionable. The fixed capital of the contemporary production regime is designed for extraction of maximum surplus value; each component part is engineered for insertion into *this* global system; therefore, the presence of communist potentials as unintended features —"affordances", as they are sometimes called — of contemporary technology needs to be argued for, not assumed as a matter of course.[25] Much of the machinery of contemporary logistics aims to streamline the circulation of *commodities* and not use-values, to produce not the things that are necessary or beneficial but those that are profitable: individually packaged boxes of cereal, for instance, whose complex insignia distinguish them from the dozens of varieties of nearly identical cereals (sold and consumed in sizes and types that reflect certain social arrangements, such as the nuclear family). How much of the vaunted flexibility of the logistics system is really the flexibility of product variety, of wage differentials and trade imbalances? How much would become useless once one eliminated the commodity-form, once one eliminated the necessity of buying and selling? Furthermore, the contemporary logistics system is designed for a particular international balance of trade, with certain countries as producers and others as consumers. This is a fact fundamentally entangled with the wage imbalances mentioned earlier, which means that the inequality of the global system in part has to do with the unequal distribution of productive means and the infrastructures of circulation — the concentration of port capacity on the West Coast of the US rather than the East Coast, for instance, because of the location of manufacturing in Asia. Rebalancing the amount of goods produced locally or at a distance — if such a thing were to be a part of a break with capitalist production — would mean an entirely different arrangement of infrastructures and probably different types of infrastructure as

well (smaller ships, for instance).

We might also question the reconfiguration thesis from the perspective of scale. Because of the uneven distribution of productive means and capitals — not to mention the tendency for geographical specialisation, the concentration of certain lines in certain areas (textiles in Bangladesh, for instance)— the system is not scalable in any way but up. It does not permit partitioning by continent, hemisphere, zone or nation. It must be managed as a totality or not at all. Therefore, nearly all proponents of the reconfiguration thesis assume high-volume and hyper-global distribution in their socialist or communist system, even if the usefulness of such distributions beyond production for profit remain unclear. Another problem, though, is that administration at such a scale introduces a sublime dimension to the concept of "planning"; these scales and magnitudes are radically beyond human cognitive capacities. The level of an impersonal "administration of things" and the level of a "free association of producers" are not so much in contradiction as separated by a vast abyss. Toscano leaves such an abyss marked by an ominous appeal to Herbert Marcuse's concept of "necessary alienation" as the unfortunate but necessary concomitant of maintenance of the technical system. Other partisans of the reconfiguration thesis, when questioned about the scaling-up of the emancipatory desires and needs of proletarian antagonists to a global administration invariably deploy the literal *deus ex machina* of supercomputers. Computers and algorithms, we are told, will determine how commodities are to be distributed; computers will scale up from the demands for freedom and equality of proletarian antagonists and figure out a way to distribute work and the products of work in a manner satisfactory to all. But how an algorithmically-mediated production would work, why it would differ from production mediated by competition and the price-mechanism remains radically unclear, and certainly unmuddied by any actual argument. Would labour-time still be the determinant of access to social wealth? Would free participation (in work) and free access (in necessaries) be facilitated in such a system? If the goal is rather a simple equality of producers — equal pay for equal work — how would one deal with the imbalances of productivity, morale and initiative, which result from the maintenance of the requirement that "he who does not work does not eat"? Is this what "necessary alienation" means?

But the non-scalarity (or unidirectional scalarity) of the logistics system introduces a much more severe problem. Even if global communist administration —

by supercomputer, or by ascending tiers of delegates and assemblies — were possible and desirable on the basis of the given technical system, once we consider the *historical* character of communism, things seem much more doubtful. Communism does not drop from the sky, but must emerge from a revolutionary process, and given the present all or nothing character of the international division of labour — the concentration of manufacturing in a few countries, the concentration of productive capacity for certain essential lines of capital in a handful of factories, as mentioned above — any attempt to seize the means of production would require an *immediately global* seizure. We would need a revolutionary process so quickly successful and extensive that all long-distance supply chains ran between non-capitalist producers within a matter of months, as opposed to the much more likely scenario that a break with capital will be geographically concentrated at first and need to spread from there. In most cases, therefore, maintenance of these distributed production processes and supply-chains will mean trade with capitalist partners, an enchainment to production for profit (necessary for survival, we will be told by the pragmatists) the results of which will be nothing less than disastrous, as a study of the Russian and Spanish examples will show. In both cases, the need to maintain an export economy in order to buy crucial goods on the international markets — arms in particular — meant that revolutionary cadres and militants had to use direct and indirect force in order to induce workers to meet production targets. Raising productivity and increasing productive capacity *now* became the transitional step on the way to achieving communism *then*, and in anarchist Spain, as much as Bolshevist Russia, cadres set to work mimicking the dynamic growth of capitalist accumulation through direct political mechanisms, rather than the indirect force of the wage, though in both cases economic incentive structures (piece rates, bonus pay) were eventually introduced as matter of necessity. It is hard to see how anything but a new insurrectionary process — one mitigated against by the establishment of new disciplines and repressive structures — could have restored these systems even to the labour-note based "lower phase of communism" that Marx advocates in "Critique of the Gotha Program", let alone a society based upon free access and non-compelled labour.

The traditional discussions of such matters assume that, whereas underdeveloped countries like Russia and Spain had no choice but to develop their productive capacity first, proletarians in fully industrialised countries could immediately expropriate and self-manage the means of production without any need for forced development. This might have been true in the immediate postwar

period, and as late as the 1970s, but once deindustrialisation began in earnest, the chance had been officially missed — the global restructuring and redistribution of productive means leaves us in a position that is probably as bad as, if not worse than, those early 20th-century revolutions, when some large percentage of the means of production for consumer goods were ready to hand, and one could locate, in one's own region, shoe factories and textile mills and steel refineries. A brief assessment of the workplaces in one's immediate environs should convince most of us — in the US at least, and I suspect most of Europe — of the utter unworkability of the reconfiguration thesis. The service and administrative jobs which most proletarians today work are meaningless except as points of intercalation within vast planetary flows — a megaretailer, a software company, a coffee chain, an investment bank, a non-profit organisation. Most of these jobs pertain to use-values that would be rendered non-uses by revolution. To meet their own needs and the needs of others, these proletarians would have to engage in the production of food and other necessaries, the capacity for which does not exist in most countries. The idea that 15% or so of workers whose activities would still be useful would work on behalf of others — as caretakers of a communist future — is politically non-workable, even if the system could produce enough of what people need, and trade for inputs didn't produce another blockage. Add to this the fact that the development of logistics itself and the credit system alongside it, greatly multiplies the power of capital to discipline rebellious zones through withdrawal of credit (capital flight), embargo, and punitive terms of trade.

HORIZONS AND PROSPECTS

The whole is the false, in this case, not so much because it can't be adequately represented or because any attempt at such representation does violence to its internal contradictions, but because all such global representations belie the fact that the whole can never be possessed as such. The totality of the logistics system belongs to capital. It is a view from everywhere (or nowhere), a view from space, that only capital as totalising, distributed process can inhabit. Only capital can fight us in every place at once, because capital is not in any sense a force with which we contend, but the very territory on which that contention takes place. Or rather, it *is* a force, but a field force, something which suffuses rather than opposes. Unlike capital, we fight in particular locations and moments — *here, there, now, then.* To be a partisan means, by necessity, to accept the partiality of perspective and the partiality of the combat we offer.

The weak tactics of the present — the punctual riot, the blockade, the occupation of public space — are not the strategic product of an antagonist consciousness that has misrecognised its enemy, or failed to examine adequately the possibilities offered by present technologies. On the contrary, the tactics of our blockaders emerge from a consciousness that has already surveyed the possibilities on offer, and understood, if only intuitively, how the restructuring of capital has foreclosed an entire strategic repertoire. The supply chains which fasten these proletarians to the planetary factory are radical chains in the sense that they go to the root, and must be torn out from the root as well. The absence of opportunities for "reconfiguration" will mean that in their attempts to break from capitalism proletarians will need to find other ways of meeting their needs. The logistical problems they encounter will have to do with replacing that which is fundamentally unavailable except through linkage to these planetary networks and the baleful consequences they bring. In other words, the creation of communism will require a massive process of delinking from the planetary factory as a matter of survival. We will not have the opportunity to use all (or even many) of the technical means that we find, since so many of these will be effectively orphaned by a break with capitalist production. But what, then, of strategy? If theory is the horizon which opens from present conditions of struggle, strategy is something different, less a horizon than a prospect. Strategy is a particular moment when theory reopens to practice, suggesting not just a possible but a desirable course of action. If a horizon places us in front of a range of possibilities, the strategic moment comes when struggles reach a certain crest, an eminence, from which a narrower set of options opens up — a prospect. Prospects are a middle ground between where we are and the far horizon of communisation.

What are our prospects, then, based upon the recent cycle of struggles? We now know that the restructuring of the capital–labour relationship has made intervention in the sphere of circulation an obvious and in many ways effective tactic. The blockade, it seems, might assume an importance equal to the strike in the coming years, as will occupations of public space and struggles over urban and rural environments remade to become better conduits for flows of labour and capital — as recent struggles in both Turkey and Brazil have demonstrated. Our prospects are such that, instead of propagandising for forms of workplace action that are unlikely to succeed or generalise, we might better accept our new strategic horizon and work, instead, to disseminate information about how interventions in this sphere might become more effective, what their limits are,

and how such limits could be overcome. We might work to disseminate the idea that the seizure of the globally-distributed factory is no longer a meaningful horizon, and we might essay to map out the new relations of production in a way that takes account of this fact. For instance, we might try to graph the flows and linkages around us in ways that comprehend their brittleness as well as the most effective ways they might be blocked as part of the conduct of particular struggles. These would be semi-local maps — maps that operate from the perspective of a certain zone or area. From this kind of knowledge, one might also develop a functional understanding of the infrastructure of capital, such that one then knew which technologies and productive means would be orphaned by a partial or total delinking from planetary flows, which ones might alternately be conserved or converted, and what the major practical and technical questions facing a revolutionary situation might look like. How to ensure that there is water and that the sewers function? How to avoid meltdown of nuclear reactors? What does local food production look like? What types of manufacture happen nearby, and what kinds of things can be done with its production machinery? This would be a process of inventory, taking stock of things we encounter in our immediate environs, that does not imagine mastery from the standpoint of the global totality, but rather a process of bricolage from the standpoint of partisan fractions who know they will have to fight from particular, embattled locations, and win their battles successively rather than all at once. None of this means setting up a blueprint for the conduct of struggles, a transitional program. Rather, it means producing the knowledge which the experience of past struggles has already demanded and which future struggles will likely find helpful.

1   Karl Marx, 'Letter to Arnold Ruge', September 1843 (MECW 3), 144.

2   Fredric Jameson, 'Postmodernism, or the Cultural Logic of Late Capitalism', *New Left Review* 146 (July-August 1984), 84.

3   See the forthcoming 'A History of Separation' in *Endnotes* 4 for a full exposition of the betrayal thematic within the ultraleft.

4   For an example, see 'Blockading the Port Is Only the First of Many Last Resorts' (bayofrage.com), a text that addresses many of the questions outlined above, and which was distributed within Occupy Oakland after the first blockade and before the second, multi-city blockade. In many regards, the essay here is a formalisation and refinement of a process of discussion, reflection and critique initiated by that

used to call the philosophical element, that is to say, the point of their *Entwicklungsfähigkeit* (literally, capacity to be developed), the locus and the moment wherein they are susceptible to a development. Nevertheless, whenever we interpret and develop the text of an author in this way, there comes a moment when we are aware of our inability to proceed any further without contravening the most elementary rules of hermeneutics. This means that the development of the text in question has reached a point of undecidability where it becomes impossible to distinguish between the author and the interpreter. Although this is a particularly happy moment for the interpreter, he knows that it is now time to abandon the text that he is analyzing and to proceed on his own.

I invite you therefore to abandon the context of Foucauldian philology in which we have moved up to now in order to situate apparatuses in a new context.

I wish to propose to you nothing less than a general and massive partitioning of beings into two large groups or classes: on the one hand, living beings (or substances), and on the other, apparatuses in which living beings are incessantly captured. On one side, then, to return to the terminology of the theologians, lies the ontology of creatures, and on the other side, the *oikonomia* of apparatuses that seek to govern and guide them toward the good.

Further expanding the already large class of Foucauldian apparatuses, I shall call an apparatus literally anything that has in some way the capacity to capture, orient, determine, intercept, model, control, or secure the gestures, behaviors, opinions, or discourses of living beings. Not only, therefore, prisons, madhouses, the panopticon, schools, confession, factories, disciplines, juridical measures, and so forth (whose connection with power is in a certain sense evident), but also the pen, writing, literature, philosophy, agriculture, cigarettes, navigation, computers, cellular telephones and—why not—language itself, which is perhaps the most ancient of apparatuses—one in which thousands and thousands of years ago a primate inadvertently let himself be captured, probably without realizing the consequences that he was about to face.

To recapitulate, we have then two great classes: living beings (or substances) and apparatuses. And, between these two, as a third class, subjects. I call a subject that which results from the relation and, so to speak, from the relentless fight between living beings and apparatuses. Naturally, the substances and the subjects, as in ancient metaphysics, seem to overlap, but not completely. In this sense, for example, the same individual, the same substance, can be the place of multiple processes of subjectification: the user of cellular phones, the web surfer, the writer of stories,

the tango aficionado, the anti-globalization activist, and so on and so forth. The boundless growth of apparatuses in our time corresponds to the equally extreme proliferation in processes of subjectification. This may produce the impression that in our time, the category of subjectivity is wavering and losing its consistency; but what is at stake, to be precise, is not an erasure or an overcoming, but rather a dissemination that pushes to the extreme the masquerade that has always accompanied every personal identity.

7.

It would probably not be wrong to define the extreme phase of capitalist development in which we live as a massive accumulation and proliferation of apparatuses. It is clear that ever since Homo sapiens first appeared, there have been apparatuses; but we could say that today there is not even a single instant in which the life of individuals is not modeled, contaminated, or controlled by some apparatus. In what way, then, can we confront this situation, what strategy must we follow in our everyday hand-to-hand struggle with apparatuses? What we are looking for is neither simply to destroy them nor, as some naively suggest, to use them in the correct way.

For example, I live in Italy, a country where the gestures and behaviors of individuals have been reshaped

from top to toe by the cellular telephone (which the Italians dub the *telefonino*). I have developed an implacable hatred for this apparatus, which has made the relationship between people all the more abstract. Although I found myself more than once wondering how to destroy or deactivate those *telefonini*, as well as how to eliminate or at least to punish and imprison those who do not stop using them, I do not believe that this is the right solution to the problem.

The fact is that according to all indications, apparatuses are not a mere accident in which humans are caught by chance, but rather are rooted in the very process of "humanization" that made "humans" out of the animals we classify under the rubric Homo sapiens. In fact, the event that has produced the human constitutes, for the living being, something like a division, which reproduces in some way the division that the *oikonomia* introduced in God between being and action. This division separates the living being from itself and from its immediate relationship with its environment—that is, with what Jakob von Uexküll and then Heidegger name the circle of *receptors-disinhibitors*. The break or interruption of this relationship produces in living beings both boredom—that is, the capacity to suspend this immediate relationship with their disinhibitors—and the Open, which is the possibility of knowing being as such, by constructing a

world. But, along with these possibilities, we must also immediately consider the apparatuses that crowd the Open with instruments, objects, gadgets, odds and ends, and various technologies. Through these apparatuses, man attempts to nullify the animalistic behaviors that are now separated from him, and to enjoy the Open as such, to enjoy being insofar as it is being. At the root of each apparatus lies an all-too-human desire for happiness. The capture and subjectification of this desire in a separate sphere constitutes the specific power of the apparatus.

8.

All of this means that the strategy that we must adopt in our hand-to-hand combat with apparatuses cannot be a simple one. This is because what we are dealing with here is the liberation of that which remains captured and separated by means of apparatuses, in order to bring it back to a possible common use. It is from this perspective that I would like now to speak about a concept that I happen to have worked on recently. I am referring to a term that originates in the sphere of Roman law and religion (law and religion are closely connected, and not only in ancient Rome): profanation.

According to Roman law, objects that belonged in some way to the gods were considered sacred or

religious. As such, these things were removed from free use and trade among humans: they could neither be sold nor given as security, neither relinquished for the enjoyment of others nor subjected to servitude. Sacrilegious were the acts that violated or transgressed the special unavailability of these objects, which were reserved either for celestial beings (and so they were properly called "sacred") or for the beings of the netherworld (in this case, they were simply called "religious"). While "to consecrate" (*sacrare*) was the term that designated the exit of things from the sphere of human law, "to profane" signified, on the contrary, to restore the thing to the free use of men. "Profane," the great jurist Trebatius was therefore able to write, "is, in the truest sense of the word, that which was sacred or religious, but was then restored to the use and property of human beings."

From this perspective, one can define religion as that which removes things, places, animals, or people from common use and transports them to a separate sphere. Not only is there no religion without separation, but every separation contains or conserves in itself a genuinely religious nucleus. The apparatus that activates and regulates separation is sacrifice. Through a series of minute rituals that vary from culture to culture (which Henri Hubert and Marcel Mauss have patiently inventoried), sacrifice always sanctions the

passage of something from the profane to the sacred, from the human sphere to the divine. But what has been ritually separated can also be restored to the profane sphere. Profanation is the counter-apparatus that restores to common use what sacrifice had separated and divided.

9.

From this perspective, capitalism and other modern forms of power seem to generalize and push to the extreme the processes of separation that define religion. If we consider once again the theological genealogy of apparatuses that I have traced above (a genealogy that connects them to the Christian paradigm of *oikonomia*, that is to say, the divine governance of the world), we can then see that modern apparatuses differ from their traditional predecessors in a way that renders any attempt to profane them particularly problematic. Indeed, every apparatus implies a process of subjectification, without which it cannot function as an apparatus of governance, but is rather reduced to a mere exercise of violence. On this basis, Foucault has demonstrated how, in a disciplinary society, apparatuses aim to create—through a series of practices, discourses, and bodies of knowledge—docile, yet free, bodies that assume their identity and their "freedom" as subjects in

the very process of their desubjectification. Apparatus, then, is first of all a machine that produces subjectifications, and only as such is it also a machine of governance. The example of confession may elucidate the matter at hand: the formation of Western subjectivity that both splits and, nonetheless, masters and secures the self, is inseparable from this centuries-old activity of the apparatus of penance—an apparatus in which a new I is constituted through the negation and, at the same time, the assumption of the old I. The split of the subject performed by the apparatus of penance resulted, therefore, in the production of a new subject, which found its real truth in the nontruth of the already repudiated sinning I. Analogous considerations can be made concerning the apparatus of the prison: here is an apparatus that produces, as a more or less unforeseen consequence, the constitution of a subject and of a milieu of delinquents, who then become the subject of new—and, this time, perfectly calculated—techniques of governance.

What defines the apparatuses that we have to deal with in the current phase of capitalism is that they no longer act as much through the production of a subject, as through the processes of what can be called desubjectification. A desubjectifying moment is certainly implicit in every process of subjectification. As we have seen, the penitential self is constituted only

through its own negation. But what we are now witnessing is that processes of subjectification and processes of desubjectification seem to become reciprocally indifferent, and so they do not give rise to the recomposition of a new subject, except in larval or, as it were, spectral form. In the nontruth of the subject, its own truth is no longer at stake. He who lets himself be captured by the "cellular telephone" apparatus—whatever the intensity of the desire that has driven him—cannot acquire a new subjectivity, but only a number through which he can, eventually, be controlled. The spectator who spends his evenings in front of the television set only gets, in exchange for his desubjectification, the frustrated mask of the couch potato, or his inclusion in the calculation of viewership ratings.

Here lies the vanity of the well-meaning discourse on technology, which asserts that the problem with apparatuses can be reduced to the question of their correct use. Those who make such claims seem to ignore a simple fact: If a certain process of subjectification (or, in this case, desubjectification) corresponds to every apparatus, then it is impossible for the subject of an apparatus to use it "in the right way." Those who continue to promote similar arguments are, for their part, the product of the media apparatus in which they are captured.

10.

Contemporary societies therefore present themselves as inert bodies going through massive processes of desubjectification without acknowledging any real subjectification. Hence the eclipse of politics, which used to presuppose the existence of subjects and real identities (the workers' movement, the bourgeoisie, etc.), and the triumph of the *oikonomia*, that is to say, of a pure activity of government that aims at nothing other than its own replication. The Right and the Left, which today alternate in the management of power, have for this reason very little to do with the political sphere in which they originated. They are simply the names of two poles—the first pointing without scruple to desubjectification, the second wanting instead to hide behind the hypocritical mask of the good democratic citizen—of the same governmental machine.

This, above all, is the source of the peculiar uneasiness of power precisely during an era in which it confronts the most docile and cowardly social body that has ever existed in human history. It is only an apparent paradox that the harmless citizen of postindustrial democracies (the *Bloom*, as it has been effectively suggested he be called),6 who readily does everything that he is asked to do, inasmuch as he leaves his everyday

gestures and his health, his amusements and his occupations, his diet and his desires, to be commanded and controlled in the smallest detail by apparatuses, is also considered by power—perhaps precisely because of this—as a potential terrorist. While a new European norm imposes biometric apparatuses on all its citizens by developing and perfecting anthropometric technologies invented in the nineteenth century in order to identify recidivist criminals (from mug shots to fingerprinting), surveillance by means of video cameras transforms the public space of the city into the interior of an immense prison. In the eyes of authority—and maybe rightly so—nothing looks more like a terrorist than the ordinary man.

The more apparatuses pervade and disseminate their power in every field of life, the more government will find itself faced with an elusive element, which seems to escape its grasp the more it docilely submits to it. This is neither to say that this element constitutes a revolutionary subject in its own right, nor that it can halt or even threaten the governmental machine. Rather than the proclaimed end of history, we are, in fact, witnessing the incessant though aimless motion of this machine, which, in a sort of colossal parody of theological *oikonomia*, has assumed the legacy of the providential governance of the world; yet instead of redeeming our world, this machine (true to the original

eschatological vocation of Providence) is leading us to catastrophe. The problem of the profanation of apparatuses—that is to say, the restitution to common use of what has been captured and separated in them—is, for this reason, all the more urgent. But this problem cannot be properly raised as long as those who are concerned with it are unable to intervene in their own processes of subjectification, any more than in their own apparatuses, in order to then bring to light the Ungovernable, which is the beginning and, at the same time, the vanishing point of every politics.

FUCK OFF, GOOGLE
Invisible Committee

1. There are no "Facebook revolutions", but there is a new science of government, cybernetics. 2. War against all things smart*! 3. The Poverty of Cybernetics. 4. Techniques against Technology.*

1.   The genealogy is not well known, and it deserves to be. Twitter descends from a program named TXTMob, invented by American activists as a way to coordinate via cellphones during protests against the Republican National Convention in 2004. The application was used by some 5000 people to share real-time information about the different actions and movements of the police. Twitter, launched two years later, was used for similar purposes, in Moldova for example, and the Iranian demonstrations of 2009 popularized the idea that it was the tool for coordinating insurgents, particularly against the dictatorships. In 2011, when rioting reached an England thought to be definitively impassive, some journalists were sure that tweeting had helped spread the disturbances from their epicenter, Tottenham. Logical, but it turned out that for their communication needs the rioters had gone with BlackBerry, whose secure telephones had been designed for the upper management of banks and multinationals, and the British secret service didn't even have the decryption keys for them. Moreover, a group of hackers hacked into BlackBerry's site to dissuade the company from co-operating with the police in the aftermath. If Twitter enabled a self-organization on this occasion it was more that of the citizen sweepers who volunteered to sweep up and repair the damage caused by the confrontations and looting. That effort was relayed and coordinated by CrisisCommons, a "global network of volunteers working together to build and use tecnology tools to help respond to disasters and improve resiliency and response before a crisis." At the time, a French left-wing rag compared this undertaking to the organization of the Puerta del Sol during the Indignants Movement, as it's called. The comparison between an initiative aimed at a quick return to order and the fact of several thousand people organizing to live on an occupied plaza, in the face of repeated assaults by the police, may look absurd. Unless we see in them just two *spontaneous, connected, civic gestures.* From 15-M on, the Spanish "indignados," a good number of them at least, called attention to their faith in a citizens' utopia. For them the digital social networks had not only accelerated the spread of the 2011 movement, but also and more importantly had set the terms of a new type of political organization, for the struggle and for society: a connected, participatory, transparent democracy. It's bound to be upsetting for "revolutionaries" to share such an idea with Jared Cohen, the American government's anti-terrorism adviser who contacted Twitter during the "Iranian revolution" of 2009 and urged them to maintain it's functioning despite censorship. Jared Cohen has recently cowritten with Google's former CEO, Eric Schmidt, a creepy political book, *The New Digital Age*. On its first page one reads this misleading sentence: "The Internet is the largest experiment involving anarchy in history."

"In Tripoli, Tottenham or Wall Street people have been protesting failed policies and the meager possibilities afforded by the electoral system… They have lost faith in government and other centralized institutions of power… There is no viable justification for a democratic system in which public participation is limited to voting. We live in a world in which ordinary people write Wikipedia; spend their evenings moving a telescope via the Internet and making discoveries half a world away; get online to help organize a protest in cyberspace and in the physical world, such as the revolutions in Egypt or Tunisia or the demonstrations of the the 'indignados' throughout Spain; or pore over the cables revealed by WikiLeaks. The same technologies enabling us to work together at a distance are creating the expectation to do better at governing ourselves." This is not an "*indignada*"speaking, or if so, she's one who camped for a long time in an office of the White House: Beth Noveck directed the "Open Government Initiative" of the Obama administration. That program starts from the premise that the governmental function should consist in linking up citizens and making available information that's now held inside the bureaucratic machine. Thus, according to New York's city hall, "the hierarchical structure based on the notion that the government knows what's good for you is outdated. The new model for this century depends on co-creation and collaboration."

Unsurprisingly, the concept of Open Government Data was formulated not by politicians but by computer programmers – fervent defenders of open source software development, moreover – who invoked the U.S. founding fathers' conviction that "every citizen should take part in government." Here the government is reduced to the role of team leader or facilitator, ultimately to that of a "platform for coordinating citizen action." The parallel

with social networks is fully embraced. "How can the city think of itself in the same way Facebook has an API eco-system or Twitter does?" is the question on their minds at the New York mayor's office. "This can enable us to produce a more user-centric experience of government. It's not just the consumption but the co-production of government services and democracy." Even if these declarations are seen as fanciful cogitations, as products of the somewhat overheated brains of Silicon Valley, they still confirm that the practice of government is less and less identified with state sovereignty. In the era of networks, governing means ensuring the interconnection of people, objects, and machines as well as the free – i.e., transparent and controllable—circulation of information that is generated in this manner. This is an activity already conducted largely outside the state apparatuses, even if the latter try by every means to maintain control of it. It's becoming clear that Facebook is not so much the model of a new form of government as its reality already in operation. The fact that revolutionaries employed it and still employ it to link up in the street en masse only proves that it's possible, in some places, to use Facebook against itself, against its essential function, which is policing.

When computer scientists gain entry, as they're doing, into the presidential palaces and mayors' offices of the world's largest cities, it's not so much to set up shop as it is to explain the new rules of the game: government administrations are now competing with alternative providers of the same services who, unfortunately for them, are several steps ahead. Suggesting their cloud as a way to shelter government services from revolutions –services like the land registry, soon to be available as a smartphone application– the authors of *The New Digital Age* inform us and them: "In the future, people won't just back up their data; they'll back up their government." And in case it's not quite clear who the boss is now, it concludes: "Governments may collapse and wars can destroy physical infrastructure but virtual institutions will survive." With Google, what is concealed beneath the exterior of an innocent interface and a very effective search engine, is an explicitly political project. An enterprise that maps the planet Earth, sending its teams into every street of every one of its towns, cannot have purely commercial aims. One never maps a territory that one doesn't contemplate appropriating. "Don't be evil!": let yourself go.

It's a little troubling to note that under the tents that covered Zucotti Park and in the offices of planning –a little higher in the New York sky—the response to disaster is conceived in the same terms: connection, networking, self-organization. This is a sign that at the same time that the new communication technologies were put into place that would not only weave their web over the Earth but form the very texture of the world in which we live, a certain way of thinking and of governing was in the process of winning. Now, the basic principles of this new science of government were framed by the same ones, engineers and scientists, who invented the technical

means of its application. The history is as follows. In the 1940's, while he was finishing his work for the American army, the mathematician Norbert Wiener undertook to establish both a new science and a new definition of man, of his relationship with the world and with himself. Claude Shannon, an engineer at Bell and M.I.T., whose work on sampling theory contributed to the development of telecommunications, took part in this project. As did the amazing Gregory Bateson, a Harvard anthropologist, employed by the American secret service in Southeast Asia during the Second World War, a sophisticated fan of LSD and founder of the Palo Alto School. And there was the truculent John von Neumann, writer of the *First Draft of a Report on the EDVAC*, regarded as the founding text of computer science – the inventor of game theory, a decisive contribution to neoliberal economics – a proponent of a preventive nuclear strike against the U.S.S.R., and who, after having determined the optimal points for releasing the Bomb on Japan, never tired of rendering various services to the American army and the budding C.I.A. Hence the very persons who made substantial contributions to the new means of communication and to data processing after the Second World War also laid the basis of that "science" that Wiener called "cybernetics." A term that Ampère, a century before, had had the good idea of defining as the "science of government." So we're talking about an art of governing whose formative moments are almost forgotten but whose concepts branched their way underground, feeding into information technology as much as biology, artificial intelligence, management, or the cognitive sciences, at the same time as the cables were strung one after the other over the whole surface of the globe.

We're not undergoing, since 2008, an abrupt and unexpected "economic crisis," we're only witnessing the slow collapse of political economy *as an art of governing*. Economics has never been a reality or a science; from its inception in the 17th century, it's never been anything but an art of governing populations. Scarcity had to be avoided if riots were to be avoided – hence the importance of "grains" – and wealth was to be produced to increase the power of the sovereign. "The surest way for all government is to rely on the interests of men," said Hamilton. Once the "natural" laws of economy were elucidated, governing meant letting its harmonious mechanism operate freely and moving men by manipulating their interests. Harmony, the predictability of behaviors, a radiant future, an assumed rationality of the actors: all this implied a certain trust, the ability to "give credit." Now, it's precisely these tenets of the old governmental practice which management through permanent crisis is pulverizing. We're not experiencing a "crisis of trust" but the *end* of trust, which has become superfluous to government. Where control and transparency reign, where the subjects' behavior is anticipated in real time through the algorithmic processing of a mass of available data about them, there's no more need to trust them or for them to trust. It's sufficient that they be sufficiently monitored. As Lenin said, "Trust is good, control is better."

The West's crisis of trust in itself, in its knowledge, in its language, in its reason, in its liberalism, in its subject and the world, actually dates back to the end of the 19th century; it breaks forth in every domain with and around the First World War. Cybernetics developed on that open wound of modernity. It asserted itself as a remedy for the existential and thus governmental crisis of the West. As Norbert Wiener saw it, "We are shipwrecked passengers on a doomed planet. Yet even in a shipwreck, human decencies and human values do not necessarily vanish, and we must make the most of them. We shall go down, but let it be in a manner to which we may look forward as worthy of our dignity". Cybernetic government is inherently apocalyptic. Its purpose is to locally impede the spontaneously entropic, chaotic movement of the world and to ensure "enclaves of order," of stability, and – who knows? – the perpetual self-regulation of systems, through the unrestrained, transparent, and controllable circulation of information. "Communication is the cement of society and those whose work consists in keeping the channels of communication open are the ones on whom the continuance or downfall of our civilization largely depends," declared Wiener, believing he knew. As in every period of transition, the changeover from the old economic governmentality to cybernetics includes a phase of instability, a historical opening where governmentality *as such* can be put in check.
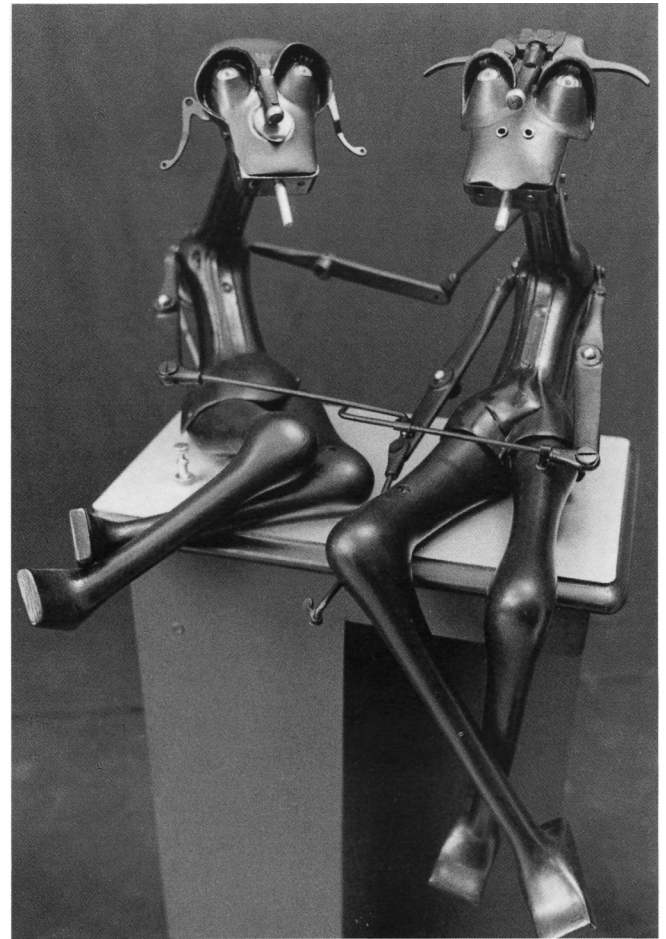
2.   In the 1980's, Terry Winograd, the mentor of Larry Page, one of the founders of Google, and Fernando Flores, the former finance minister of Salvador Allende, wrote concerning design in information technology that "the most important designing is ontological. It constitutes an intervention in the background of our heritage, growing out of our already existent ways of being in the world, and deeply affecting the kinds of beings that we are…It is necessarily reflective and political." The same can be said of cybernetics. Officially, we continue to be governed by the old dualistic Western paradigm where there is the subject and the world, the individual and society, men and machines, the mind and the body, the living and the nonliving. These are distinctions that are still generally taken to be valid. In reality, cybernetized capitalism does practice an ontology, and hence an anthropology, whose key elements are reserved for its initiates. The rational Western subject, aspiring to master the world and governable thereby, gives way to the cybernetic conception of a being without an interiority, of a selfless self, an emergent, climatic being, constituted by its exteriority, by its relations. A being which, armed with its Apple Watch, comes to understand itself entirely on the basis of external data, the statistics that each of its behaviors generates. A Quantified Self that is willing to monitor, measure, and desperately optimize every one of its gestures and each

of its affects. For the most advanced cybernetics, there's already no longer man and his environment, but a system-being which is itself part of an ensemble of complex information systems, hubs of autonomic processes – a being that can be better explained by starting from the middle way of Indian Buddhism than from Descartes. "For man, being alive means the same thing as participating in a broad global system of communication", asserted Wiener in 1948.

Just as political economy produced a *homo economicus* manageable in the framework of industrial States, cybernetics is producing its own humanity. A transparent humanity, emptied out by the very flows that traverse it, electrified by information, attached to the world by an ever-growing quantity of apparatuses. A humanity that's inseparable from its technological environment because it is constituted, and thus driven, by that. Such is the object of government now: no longer man or his interests, but his "social environment". An environment whose model is the smart city. Smart because by means of its sensors it produces information whose processing in real time makes self-management possible. And smart because it produces and is produced by smart inhabitants. Political economy reigned over beings by leaving them free to pursue their interest; cybernetics controls them by leaving them free

to communicate. "We need to reinvent the social systems in a controlled framework," according to M.I.T. professor Alex Pentland, in an article from 2011. The most petrifying and most realistic vision of the metropolis to come is not found in the brochures that IBM distributes to municipalities to sell them software for managing the flows of water, electricity, or road traffic. It's rather the one developed in principle "against" that Orwellian vision of the city: "smarter cities" coproduced by their residents themselves (in any case by the best connected among them). Another M.I.T. professor traveling in Catalonia is pleased to see its capital becoming little by little a "fab city": "Sitting here right in the heart of Barcelona I see a new city being invented where everyone will have access to the tools to make it completely autonomous" The citizens are thus no longer subalterns but *smart people*, "receivers and generators of ideas, services, and solutions," as one of them says. In this vision, the metropolis doesn't become smart through the decision-making and action of a central government, but appears, as a "spontaneous order", when its inhabitants "find new ways of producing, connecting, and giving meaning to their own data." The *resilient* metropolis thus emerges, one that can resist every disaster.

Behind the futuristic promise of a world of fully linked people and objects, when cars, fridges, watches, vacuums, and dildos are directly connected to each other and to the Internet, there is what is already here: the fact that the most polyvalent of sensors is already in operation: myself. "I" share my geolocation, my mood, my opinions, my account of what I saw today that was awesome or awesomely banal. I ran, so I immediately shared my route, my time, my performance numbers and their self-evaluation. I always post photos of my vacations, my evenings, my riots, my colleagues, of what I'm going to eat and who I'm going to fuck. I appear not to do much and yet I produce a steady stream of data. Whether I work or not, my everyday life, as a stock of information, remains fully valuable.

"Thanks to the widespread networks of sensors, we will have a God's eye view of ourselves. For the first time, we can precisely map the behavior of masses of people at the level of their daily lives," enthuses one of the professors. The great refrigerated storehouses of data are the pantry of current government. In its rummaging through the databases produced and continuously updated by the everyday life of connected humans, it looks for the correlations it can use to establish not universal laws nor even "whys," but rather "whens" and "whats," one-time, situated predictions, not to say oracles. The stated ambition of cybernetics is to manage the unforeseeable, and to govern the ungovernable instead of trying to destroy it. The question of cybernetic government is not only, as in the era of political economy, to anticipate in order to plan the action to take, but also to act directly upon the virtual, to structure the possibilities. A few years ago, the LAPD bought itself a new software program called PredPol. Based on a heap of crime statistics, it calculates the probabilities that a particular crime will be committed,

neighborhood by neighborhood, street by street. Given these probabilities updated in real time, the program itself organizes the police patrols in the city. A founder cybernetician wrote in *Le Monde* in 1948: "We can dream of a time when the *machine à gouverner* will – for good or evil, who knows? – compensate for the shortcomings, obvious today, of the leaders and customary apparatuses of politics." Every epoch dreams the next one, even if the dream of the one may become the daily nightmare of the other.

The object of the great harvest of personal information is not an individualized tracking of the whole population. If the surveillants insinuate themselves into the intimate lives of each and every person, it's not so much to construct individual files as to assemble massive databases that make numerical sense. It is more efficient to correlate the shared characteristics of individuals in a multitude of "profiles," with the probable developments they suggest. One is not interested in the individual, present and entire, but only in what makes it possible to determine their potential lines of flight. The advantage of applying the surveillance to profiles, "events," and virtualities is that statistical entities don't take offense, and individuals can still claim they're not being monitored, at least not personally. While cybernetic governmentality already operates in terms of a completely new logic, its subjects continue to think of themselves according to the old paradigm. We believe that our "personal" data belong to us, like our car or our shoes, and that we're only exercising our "individual freedom" by deciding to let Google, Facebook, Apple, Amazon or the police have access to them, without realizing that this has immediate effects on those who refuse to, and who will be treated from then on as suspects, as potential deviants. "To be sure," predicts *The New Digital Age*, "there will be people who resist adopting and using technology, people who want nothing to do with virtual profiles, online data systems or smart phones. Yet a government might suspect that people who opt out completely have something to hide and thus are more likely to break laws, and as a counterterrorism measure, that government will build the kind of 'hidden people' registry we described earlier. If you don't have any registered social-networking profiles or mobile subscriptions, and on-line references to you are unusually hard to find, you might be considered a candidate for such a registry. You might also be subjected to a strict set of new regulations that includes rigorous airport screening or even travel restrictions."
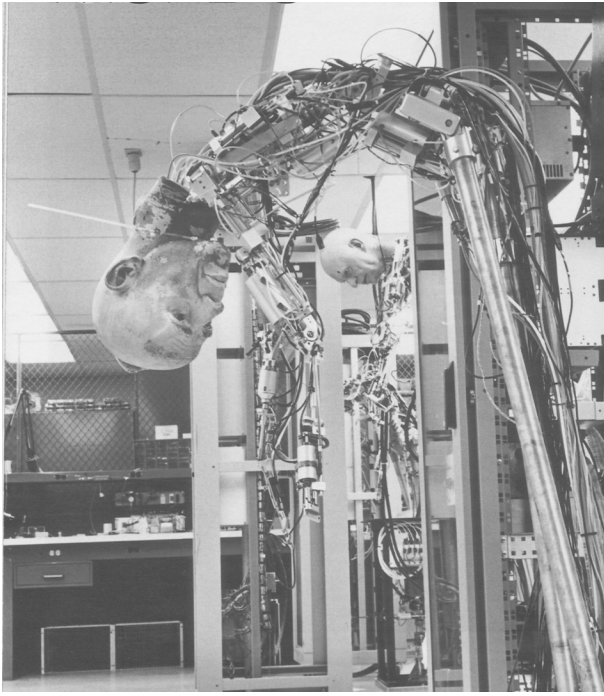
3. So the security services are coming to consider a Facebook profile more *credible* than the individual supposedly hiding behind it. This is some indication of the porousness between what was still called the virtual and the real. The accelerating datafication of the world does make it less and less pertinent to think of the online world and the real world, cyberspace and reality, as being separate. "Look at Android, Gmail, Google Maps, Google Search. That's what we do. We make products that people can't live without," is how they put it in Mountain View. In the past few years, however, the ubiquity of connected devices in the everyday lives of human beings has triggered some survival reflexes. Certain barkeepers decided to ban Google Glasses from their establishments – which became truly hip as a result, it should be said. Initiatives are blossoming that encourage people to disconnect occasionally (one day per week, for a weekend, a month) in order to take note of their dependence on technological objects and re-experience an "authentic" contact with reality. The attempt proves to be futile of course. The pleasant weekend at the seashore with one's family and without the smartphones is lived primarily *as an experience of disconnection*; that is, as something immediately thrown forward to the moment of reconnection, when it will be shared on the Internet.

Eventually, however, with Western man's abstract relation to the world becoming objectified in a whole complex of apparatuses, a whole universe of virtual reproductions, the path towards presence paradoxically reopens. By detaching ourselves from everything, we'll end up detaching ourselves even from our detachment. The technological beatdown will ultimately restore our capacity to be moved by the bare, pixelless existence of a honeysuckle vine. Every sort of screen coming between us and reality will have been required before we could reclaim the singular shimmer of the sensible world, and our amazement at what is there. It will have taken hundreds of "friends" who have nothing to do with us, "liking" us on Facebook the better to ridicule us afterwards, for us to rediscover the ancient taste for friendship.

Having failed to create computers capable of equaling human beings, they've set out to impoverish human experience to the point where life can be confused with its digital modeling. Can one picture the human desert that had to be created to make existence on the social media seem desirable? Just as the traveler had to be replaced by the tourist for it to be imagined that the latter might pay to go all over the world via hologram while remaining in their living room. But the slightest real experience will shatter the wretchedness of this kind of illusionism. *The poverty of cybernetics is what will bring it down in the end.* For a hyper-individualized generation whose primary sociality had been that of the *social media*, the Quebec student strike of 2012 was first of all a stunning revelation of the insurrectionary power of simply being together and starting to move. Evidently, this was a meet-up like no other before, such that the insurgent friendships were able to rush the police lines. The control traps were useless against that; in fact, they had become another way for people to test themselves, together. "The end of the Self will be the genesis of presence," envisioned Giorgio Cesarano in his *Survival Manual*.

The virtue of the hackers has been to base themselves on the materiality of the supposedly virtual world. In the words of a member of Telecomix, a group of hackers famous for helping the Syrians get around the state control of Internet communications, if the hacker is ahead of his time it's because he "didn't think of this tool [the Internet] as a separate virtual world but as an extension of physical reality." This is all the more obvious now that the hacker movement is extending itself outside the screens by opening hackerspaces where people can analyze, tinker with, and piece together digital software and tech objects. The expansion and networking of Do It Yourself has produced a gamut of purposes: it's a matter of fooling with things, with the street, the city, the society, life itself. Some pathological progressives have been quick to see the beginnings of a new economy in it, even a new civilization, based this time on "sharing." Never mind that the present capitalist economy already values "creation," beyond the old industrial constraints. Managers are urged to facilitate free initiative, to encourage innovative projects, creativity, genius, even deviance – "the company of the future must protect the deviant, for it's the deviant who will innovate and who is capable of creating rationality in the unknown," they say. Today value is not sought in the new features of a product, nor even in its desirability or its meaning, but in the experience it offers to the consumer. So why not offer that consumer the ultimate experience of going over to the other side of the creation process? From this perspective, the hackerspaces or "fablabs" become spaces where the "projects" of "consumer-innovators" can be undertaken and "new marketplaces" can emerge. In San Francisco, the TechShop firm is developing a new type of fitness club

where, for a yearly membership fee, "one goes every week to make things, to create and develop one's projects."

The fact that the American army finances similar places under the Cyber Fast Track program of DARPA (Defense Advanced Research Project Agency) doesn't discredit the hackerspaces as such. Any more than they're condemned to participate in yet another restructuring of the capitalist production process when they're captured in the "Maker" movement with its spaces where people working together can build and repair industrial objects or divert them from their original uses. Village construction sets, like that of Open Source Ecology with its fifty modular machines – tractor, milling machine, cement mixer, etc.

– and DIY dwelling modules could also have a different destiny than serving to found a "small civilization with all the modern comforts," or creating "entire new economies" or a "financial system" or a "new governance," as its current guru fantasizes. Urban farming which is being established on building roofs or vacant industrial lots, like the 1300 community gardens of Detroit, could have other ambitions than participating in economic recovery or bolstering the "resilience of disaster zones." Attacks like those conducted by Anonymous/LulzSec against banking firms, security multinationals, or telecommunications could very well go beyond cyberspace. As a Ukrainian hacker says, "When you have to attend to your life, you stop printing stuff in 3D rather quickly. You find a different plan."

4. The famous "question concerning technology," still a blind spot for revolutionary movements, comes in here. A wit whose name can be forgotten described the French tragedy thus: "a generally technophobic country dominated by a generally technophilic elite." While the observation may not apply to the country, it does apply in any case to the radical milieus. The majority of Marxists and post-Marxists supplement their atavistic inclination to hegemony with a definite attachment to technology-that-emancipates-man, whereas a large percentage of anarchists and post-anarchists are down with being a minority, even an oppressed minority, and adopt positions generally hostile to "technology." Each tendency even has its caricature: corresponding to the Negriist devotees of the cyborg, the electronic revolution by connected multitudes, there are the anti-industrials who've turned the critique of progress and the "disaster of technological civilization" into a profitable literary genre on the whole, and a niche ideology where one can stay warm at least, having envisaged no revolutionary possibility whatsoever. Technophilia and technophobia form a diabolical pair joined together by a central untruth: that such a thing as the technical exists. It would be possible, apparently, to divide between what is technical and what is not, in human existence. Well, no, in fact. One only has to look at the state of incompletion in

which the human offspring is born, and the time it takes for it to move about in the world and to talk, to realize that its relation to the world is not given in the least, but rather the result of a whole elaboration. Since it's not due to a natural compatibility, man's relation to the world is essentially artificial, *technical*, to speak Greek. Each human world is a certain configuration of techniques, of culinary, architectural, musical, spiritual, informational, agricultural, erotic, martial, etc., techniques. And it's for this reason that there's no generic human essence: because there are only particular techniques, and because every technique configures a world, materializing in this way a certain relationship with the latter, a certain *form of life*. So one doesn't "construct" a form of life; one only incorporates techniques, through example, exercise, or apprenticeship. This is also why our familiar world rarely appears to us as "technical": because the set of artifices that structure it are already part of us. It's rather those we're not familiar with that seem to have a strange artificiality. Hence the technical character of our world only stands out in two circumstances: invention and "breakdown." It's only when we're present at a discovery or when a familiar element is lacking, or breaks, or stops functioning, that the illusion of living in a natural world gives way in the face of contrary evidence.

Techniques can't be reduced to a collection of equivalent instruments any one of which Man, that generic being, could take up and use without his essence being affected. Every tool configures and embodies a particular relation with the world, and the worlds formed in this way are not equivalent, any more than the humans who inhabit them are. And by the same token these worlds are not hierarchizable either. There is nothing that would establish some as more "advanced" than others. They are merely distinct, each one having its own potential and its own history. In order to hierarchize worlds a criterion has to be introduced, an implicit criterion making it possible to classify the different techniques. In the case of progress, this criterion is simply the quantifiable productivity of the techniques, considered apart from what each technique might involve ethically, without regard to the sensible world it engenders. This is why there's no progress but capitalist progress, and why capitalism is the uninterrupted destruction of worlds. Moreover, the fact that techniques produce worlds and forms of life doesn't mean that man's essence is production, as Marx believed. So this is what technophiles and technophobes alike fail to grasp: the *ethical* nature of every technique.

It should be added that the nightmare of this epoch is not in its being the "age of technics" but in its being the age of technology. Technology is not the consummation of technical development, but on the contrary the expropriation of humans' different constitutive techniques. Technology is the *systematizing* of the most *effective* techniques, and consequently the leveling of the worlds and the relations with the world that everyone deploys. Techno-logy is *a discourse about techniques that is constantly being projected into material reality*. Just as the ideology of the festival is the death of the real festival, and the ideology of the encounter is the actual impossibility of coming together, technology is the neutralization of all the particular techniques. In this sense capitalism is essentially technological; it is the profitable organization of the most productive techniques into a system. Its cardinal figure is not the economist but the engineer. The engineer is the specialist in techniques and thus the chief expropriator of them, one who doesn't let himself be affected by any of them, and spreads his own absence from the world everywhere he can. He's a sad and servile figure. The solidarity between capitalism and socialism is confirmed there: in the cult of the engineer. It was engineers who drew up most of the models of the neoclassical economy like pieces of contemporary trading software. Recall in this regard that Brezhnev's claim to fame was to have been an engineer in the metallurgical industry in Ukraine.

The figure of the hacker contrasts point by point with the figure of the engineer, whatever the artistic, police-directed, or entrepreneurial efforts to neutralize him may be. Whereas the engineer would capture everything that functions, in such a way that everything functions better in service to the system, the hacker asks himself "How does that work?" in order to find its flaws, but also

to invent other uses, to experiment. Experimenting then means exploring what such and such a technique implies *ethically*. The hacker pulls techniques out of the technological system in order to free them. If we are slaves of technology, this is precisely because there is a whole ensemble of artifacts of our everyday existence that we take to be specifically "technical" and that we will always regard simply as black boxes of which we are the innocent users. The use of computers to attack the CIA attests rather clearly that cybernetics is no more the science of computers than astronomy is the science of telescopes. Understanding how the devices around us work brings an immediate increase in power, giving us a purchase on what will then no longer appear as an environment, but as a world arranged in a certain way and one that we can shape. This is the hacker's perspective on the world.

These past few years, the hacker milieu has gained some sophistication politically, managing to identify friends and enemies more clearly. Several substantial obstacles stand in the way of its becoming-revolutionary, however. In 1986, "Doctor Crash" wrote: "Whether you know it or not, if you are a hacker you are a revolutionary. Don't worry, you're on the right side." It's not certain that this sort of innocence is still possible. In the hacker milieu there's an originary illusion according to which "freedom of information," "freedom of the Internet," or "freedom of the individual" can be set against those who are bent on controlling them. This is a serious misunderstanding. *Freedom and surveillance, freedom and the panopticon belong to the same paradigm of government.* Historically, the endless expansion of control procedures is the corollary of a form of power that is realized *through* the freedom of individuals. Liberal government is not one that is exercised directly on the bodies of its subjects or that expects a filial obedience from them. It's a background power, which prefers to manage space and rule over interests rather than bodies. A power that oversees, monitors, and acts minimally, intervening only where the framework is threatened, against that which *goes too far*. Only free subjects, taken en masse, are governed. Individual freedom is not something that can be brandished against the government, for it is the very mechanism on which government depends, the one it regulates as closely as possible in order to obtain, from the amalgamation of all these freedoms, the anticipated mass effect. *Ordo ab chao.* Government is that order which one obeys "like one eats when hungry and covers oneself when cold," that servitude which I co-produce at the same time that I pursue my happiness, that I exercise my "freedom of expression." "Market freedom requires an active and extremely vigilant politics," explained one of the founders of neoliberalism. *For the individual, monitored freedom is the only kind there is.* This is what libertarians, in their infantilism, will never understand, and it's this incomprehension that makes the libertarian idiocy attractive to some hackers. A genuinely free being is not even said to be free. It simply *is*, it exists, deploys its powers according to its being. We say of an animal that it is *en liberté,* "roaming free," only when it lives in an environment that's already

completely controlled, fenced, civilized: in the park with human rules, where one indulges in a safari. "Friend" and "free" in English, and "Freund" and "frei" in German come from the same Indo-European root, which conveys the idea of a shared power that grows. Being free and having ties was one and the same thing. I am free *because I have ties*, because I am linked to a reality greater than me. In ancient Rome, the children of citizens were *liberi* : through them, it was Rome that was growing. Which goes to show how ridiculous and what a scam the individual freedom of "I do what I feel like doing" is. If they truly want to fight the government, the hackers have to give up this fetish. The cause of individual freedom is what prevents them from forming strong groups capable of laying down a real strategy, beyond a series of attacks; it's also what explains their inability to form ties beyond themselves, their incapacity for becoming a historical force. A member of Telecomix alerts his colleagues in these terms: "What is certain is that the territory you're living in is defended by persons you would do well to meet. Because they're changing the world and they won't wait for you."

Another obstacle for the hacker movement, as every new meeting of the Chaos Computer Club demonstrates, is in managing to draw a front line in its own ranks between those working for a better government, or even *the* government, and those working for its destitution. The time has come for *taking sides*. It's this basic question that eludes Julian Assange when he says: "We high-tech work-

ers are a class and it's time we recognize ourselves as such." France has recently exploited the defect to the point of opening a university for molding "ethical hackers". Under DCRI supervision, it will train people to fight against the real hackers, those who haven't abandoned the *hacker ethic.*

These two problems merged in a case affecting us. After so many attacks that so many of us applauded, Anonymous/LulzSec hackers found themselves, like Jeremy Hammond, nearly alone facing repression upon getting arrested. On Christmas day, 2011, LulzSec defaced the site of Strafor, a "private intelligence" multinational. By way of a homepage, there was now the scrolling text of *The Coming Insurrection* in English, and $700,000 was transferred from the accounts of Strafor customers to a set of charitable associations – a Christmas present. And we weren't able to do anything, either before or after their arrest. Of course, it's safer to operate alone or in a small group – which obviously won't protect you from infiltrators – when one goes after such targets, but it's disastrous for attacks that are so political, and so clearly within the purview of global action by our party, to be reduced by the police to some private crime, punishable by decades of prison or used as a lever for pressuring this or that "Internet pirate" to turn into a government snitch.

Invisible Committee,
October 2014

Excerpt from «*To Our Friends*», translations coming soon.
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LIBERAL INFERNOS

IAN ALAN PAUL

April 27th, 2024

The liberal order overseeing and administering the genocide in Palestine is built upon the marriage of egalitarian values and exterminating violence, upon the intimate coupling of supposedly hallowed rights and the hell it unleashes upon the world. Arms must continue to be delivered, just as their use must be denounced and condemned. Demonstrations must be celebrated, just as orders must be given to smother them with tear gas. Everything thus burns twice, as the fuel of liberal politics and the fuel of liberal carnage, feeding an inferno whose fires rage *ever more democratically*. If there is no need to resolve the formal tension between its abstract ideals and its violent realities, this is because liberalism is the indefinite elaboration of this contradiction. For every sanctified constitution, there is a detention camp that will never close; for every promised equality, there is an economy imposing its cruel hierarchies upon every area of life; for each civic norm, a mob of police marching through the streets drunk on power.

The liberal order takes the moral high ground in a world where rubble accumulates and graves are dug everywhere below. It offers breathing room for regret and remorse in a world where machines of mass death asphyxiate ever more numerous lives. The scorching desolation of the liberal order burns brightly in organizations such as the International Criminal Court, who document each and every detail of the ongoing genocide only to file them away for later review. It is kept alight by heads of state who speak of the sacred right of national self-defense while commanding those who live beneath the genocidal waves of violence to strictly adhere to the rules of war. University presidents also do their part to tend to the inferno, invoking the need to preserve a safe learning environment while positioning snipers on campus roofs and calling in militarized riot police to drag their students away. Just as Aquinas imagined that the saved would experience nothing but joy as they looked down upon the damned burning for eternity below, liberals nurture their immaculately beautiful souls as they serenely watch their social order transform ever more of the world to ash. Heaven is little more than the means of managing and maintaining the hell it everywhere sets aflame.

It is a bleak irony that the liberal regimes that defined themselves through their opposition to the genocides of the 20th century now resolutely cooperate with one another to facilitate genocide in the 21st. Indeed, any remaining defenders of liberalism must ask themselves not why the liberal order has failed to put an end to the genocide in Palestine, but why the liberal order so eagerly supports and sustains it. Alliances remain firm, logistical supports stay online,

trade routes flow, the international system survives, while an entire people is buried beneath burning debris. What is liberalism other than the demand that its processes be respected, that its rules be followed, and that its elected leaders be knelt to, even as its forms of devastation burn without restraint? To remain a free and open society, the population must be brutalized and the prisons must be filled. To defend universal human rights, the killing must continue at a steady pace. To save the soul of liberalism, no one who steps out of line can be spared. This is the reality of today's liberal order: a sweeping and unrelenting violence executed by those who say *"never again."*
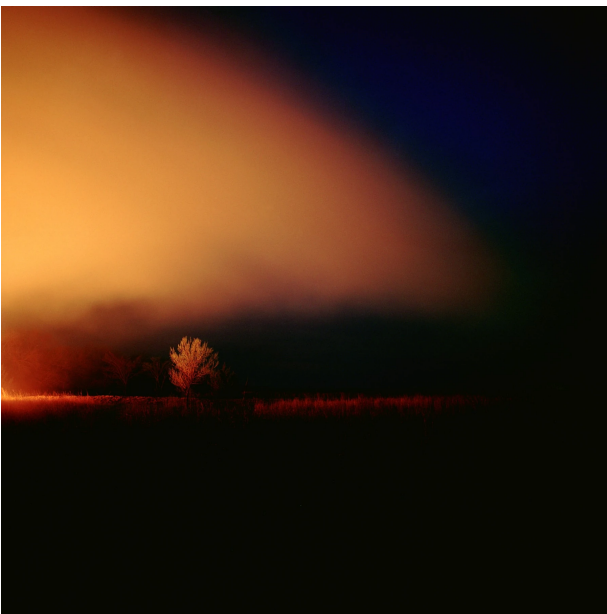
Liberalism sees revolt as something that was necessary and needed in the past, but which is always too extreme and explosive for the present. Rebellion has its value, but only as a memory. When it comes to life as an encampment on a campus or a march pouring through the streets, it must be quickly repressed. There is a spectacular form of capture at work in liberalism, which aspires to neutralize all revolt by transforming it ever more into *an image*, into a tame history which can be displayed in the halls of power, into a resistance that has been successfully pummeled into the past tense. The liberal imagination celebrates revolt as something *represented* while working assiduously to pacify its *present* reality, seeks to burn away its volatile potential in order to then archive and exhibit the remaining cinders. As they're being pepper sprayed and ziptied, protestors are instructed to submit and surrender to their defeat today so they can be recognized as

righteous tomorrow, to repent now so that when the fight is over and they've lost they can be redeemed again.

The recent wave of unrest against the genocide in Palestine has not been immune to this confusion, which functions as a form of internal pacification. Liberalism triumphs wherever those who step onto the streets are convinced to subordinate the act of resistance to its appearance as representation, believing that revolting against power is ultimately only ever a means of being recognized by the powerful. Arendt's aphorism that "the most radical revolutionary will become a conservative on the day after the revolution" only reveals the degree to which liberalism has colonized the understanding of revolt, the degree to which every form of resistance can only be contemplated as another dialogue with power aspiring only to be represented more fully within it, another image to be incorporated into the panorama of liberal governance. The chant, "The Whole World is Watching," which regularly breaks out at demonstrations as people are being dragged away into the backs of police vans, shows just how many have already learned to embrace themselves as images. The problem, of course, is precisely that people are *only watching*, that even would-be insurgents understand being seen as an end in itself, that the desire to be recognized usurps the desire to revolt.

Liberalism's recuperation of revolt is what allows it to seek forgiveness for all of its sins, to be perpetually cleansed and reborn. The penance it pays for all of its historical wrongs becomes a source not merely of consecration, but of self-renewal. Past domination is repackaged into marketing material, monuments, and museums, evidence of the liberal order's progress toward perfection. The heads cracked open by police in Selma are held up as the testament of a post-racial America, rather than as one entry in an archive of racialized brutality that continues to expand. Just as liberal societies always memorialize their own past violence in order to claim that they have freed the world of it, they insist that their violence in the present is an integral part of the liberal order which must be preserved in order to be able to absolve the violence once again. Each liberal order aspires to dominate you without appearing to, to repress you while presenting themselves as the last defense

against your repression.

On the stained glass windows of liberalism's cathedrals there are depictions of all female fighting units shelling refugee camps in the distance, of weapons manufacturers with demographically diverse corporate boards, and prison guards undergoing training to address inmates with their preferred pronouns as they lock them in their cells each night. By folding the world into its flames ever more inclusively, the inferno grows larger by the day. By diversifying what does the burning, the racialized, sexualized, and classed lives that are the focal points of the fires can continue to be burnt. Although liberalism cannot promise to temper its violence, it is committed to more equitably representing and recognizing everyone within its deployment. Everything can be conscripted and made scripture. Let the unruly energy of revolt burn away so a docile saint can emerge from the smoke in its place.

The ideology of liberalism also functions in a third way, as a weapon of counterinsurgency, when it is deployed to help incorporate and *reabsorb* the energy of the revolt. Its operation aims to fragment the revolt apart, cleaving open and then sharpening divisions between the saved and the damned, the voices of reason and the cries of madness, the blessed protestor and the cursed rioter. When liberal authorities enter into dialogue with the so-called representatives of a revolt, their goal is to turn parts of the revolt against itself. Before sending in their own police, it is often helpful to introduce new lines of division by recruiting new officers from within the movement, in

the form of protestors who have chosen to negotiate, agree to concessions, and ultimately cooperate with their own repression. We are instructed that if we don't find our proper place in the furnaces, if we don't help keep the fires going uninterrupted, that we may find ourselves consumed within them. All can become martyrs. There's enough room in hell for everyone.

For revolt to remain a weapon, for it to pose any threat at all, the spell of liberalism must be broken. There is no time to waste seeking the comforts of being recognized as virtuous in defeat, of appearing on the right side of history even as history blazes and burns indifferently ahead. Success will not be measured by the degree to which we are represented by power, by the degree revolt accumulates as images, but only by whether we *abolish any power* that could possibly hope to ever recognize us.

Confronting the liberal order first requires that we recognize that liberalism is not opposed to authoritarianism but only to anarchy, to that which remains incommensurate with and thus dissolves power as such. While authoritarianism is in many ways distinct from liberalism, both share the same love of power, both keep the inferno burning using different means. Whereas authoritarianism can respond to revolt only by directly confronting it, liberalism's ability to incorporate and recuperate revolt represents a more developed form of power. In the final analysis, however, although the liberal order occasionally finds it necessary to condemn the excesses of authoritarian regimes, it remains eager to cooperate and form alliances with them. Anarchy, on the other hand, the movement to destitute each and every form of constituted power, is something which liberalism is unable to capture nor consume as fuel. Anarchy is precisely what refuses to be represented and recognized, what cannot be definitively depicted or digested or defanged as an image. Anarchy can only ever be glimpsed when it jumps into the flames of the inferno to confront them.

Because it cannot be recuperated, because it is far too profane, liberalism subjects anarchy to the most extreme forms of violence and repression, those which aim to simply erase it from the Earth and deny it any possible afterlife. This is why when liberalism represses anarchy—suspending all rights, abandoning any veneer of norms, freely unleashing its violence—

it can so easily be mistaken for authoritarianism. Posting flyers brings charges of terrorism, raising bail money causes police to raid your home, and camping in a forest to halt its destruction is answered with an execution. Even posing the question, "What are you doing?", to the thugs of liberal law and order as they brutalize someone on the street will have you thrown on the concrete and cuffed. Liberalism cannot tolerate what refuses to play along, what chooses to respond and relate directly to the world rather always defer, capitulate, and submit to what so densely represents and represses it.

It is exactly because it eludes being integrated as another pillar of the liberal order, that it resists being contained and controlled, that anarchy continues to pose such a threat. When a ship attempts to depart with munitions, anarchy emerges as the shutting down of the port. When one university encampment is violently dispersed, anarchy emerges as the multiplication of many new encampments. When a city bus is filled with arrestees, anarchy emerges as blockades that prevent the bus from carrying everyone off to jail. When someone is grabbed on the street by a cop, anarchy emerges as the surrounding crowd that pulls them free. When officials try to differentiate between legitimate and illegitimate protestors, anarchy blurs the boundaries of conflict, scrambles the coordinates of what's at stake, and invites more and more into the struggle. When authorities demand that everyone identify themselves, anarchy emerges as the masks that are pulled up over everyone's faces. And when those in power demand to negotiate with representatives of the revolt, anarchy emerges as the reply that "no one could ever represent us." For anarchy, there is no need to be redeemed or made righteous, no desire to be anointed or to ascend to a higher place, but only a struggle against power wherever our world and its inhabitants continue to burn.

Once a genocide has begun it will never exhaust itself, it is always able to find something further to consume. The inferno spreads, igniting ever more as the liberal order works to ensure that the flames burn equally and do not discriminate. Genocides only end when they are defeated, when *they are forced to stop*. Within the revolt against the liberal order, there is an insurgent and impious choreography that works to dismantle the hell that power has everywhere built, that aspires to destitute everything that dominates and thus dismantle and destroy whatever keeps the inferno burning. A greater wealth than what could ever be found in heaven awaits those who dare to extinguish what so liberally incinerates us all.

April 2024

Images: Larry Schwarm

⊙elDiario.es

Hazte socio/a

Un juzgado de Barcelona llama a declarar a dos capitanes de barcos implicados en el comercio de armas con Israel

El juzgado abre diligencias previas para investigar el papel de la naviera Maersk en la cadena de envío de armamento a Israel a través de puertos españoles, y ante la llegada este lunes de otro barco

— El Gobierno mantiene acuerdos de compra de armamento a Israel pese al anuncio de rescisión de un contrato

Uno de los buques de la naviera danesa Maersk Maersk

Olga Rodríguez

SEGUIR AL AUTOR/A 📩

11 de mayo de 2025 -23:19 h **Actualizado el 12/05/2025 -17:53 h** 💬 **27**

El barco Nexoe Maersk, señalado como integrante de la cadena de suministro de armamento a Israel, tiene previsto hacer de nuevo escala en el puerto de Barcelona este lunes, antes de continuar trayecto hacia Marruecos. La denuncia, presentada por la campaña **Fin al Comercio de Armas con Israel**, señala que este buque forma parte de la cadena de envío de material militar al Ejército israelí, en la que participa la naviera danesa Maersk con varias embarcaciones.

Ahora el juzgado de instrucción nº6 de Barcelona ha decidido abrir diligencias previas para investigar esta implicación. En su auto, con fecha 7 de mayo de 2025, el juzgado requiere formalmente a la empresa Maersk Logistics & Services Spain, SLU -filial logística de Maersk en España- que identifique a los capitanes de los barcos Nexoe Maersk y Maersk Detroit.

Lo hace con el objetivo de "oírlos en declaración, en calidad de investigados, el 12 de mayo a las 9.30 de la mañana", según señala el mismo auto, al que ha tenido acceso elDiario.es. Precisamente este lunes, 12 de mayo, ha hecho escala en Barcelona el Nexoe Maersk.

El juzgado señala que los hechos "de las anteriores actuaciones" presentan características que hacen presumir "la posible existencia de una infracción penal" y ordena a la filial española de Maersk que facilite la identificación del responsable legal de la mercantil, para poder "tomarle declaración en calidad de investigado, si fuera necesario".

Según informan fuentes del Tribunal Superior de Justicia de Catalunya, la diligencia señalada para hoy queda suspendida, a petición de los abogados de los capitanes, "al coincidir las fechas de las declaraciones con otros procedimientos agendados previamente".

Portavoces de la campaña Fin al Comercio de Armas con Israel indican a este diario que, pese a la suspensión de los interrogatorios hoy, las diligencias acordadas "implican que los dos capitanes tendrán que aclarar, en sede judicial, el contenido y el destino final" de las **mercancías** transportadas desde Estados Unidos hasta Israel en los últimos meses, "a través de una ruta que hace escala en varios puertos españoles".

En abril el juez desestimó la retención del barco en Barcelona y el Nexoe pudo seguir su ruta hasta Haifa, Israel, como se comprobó posteriormente"

"Una cadena habitual de envío"

Este mismo buque, el Nexoe Maersk, **hizo escala** el pasado 15 de abril en Barcelona. Fue entonces cuando la campaña Fin al Comercio de Armas con Israel presentó una denuncia ante el juzgado, para pedir la retención y registro del barco, por su posible implicación en la cadena de envío de armamento a Israel.

"Se trata de una cadena que alimenta el genocidio en Palestina", subrayaron. Sin embargo, el juez desestimó su petición y el Nexoe Maersk pudo seguir su ruta, de la que no constaba el destino final en su web. Posteriormente se pudo comprobar que llegó hasta **el puerto israelí de Haifa**, pasando antes por Valencia, Casablanca, Algeciras y Tánger.

Otro barco, el Maersk Detroit, llegó desde EEUU a Tánger, Marruecos, el pasado abril. Allí coincidió con el Nexoe Maersk, tras el paso de este último por Barcelona, Valencia y Algeciras. El Maersk Detroit es integrante del programa militar estadounidense Maritime Security Program.

La campaña Fin al Comercio de Armas con Israel indica en su denuncia que este navío transporta componentes de aviones de combate F-35 desde EEUU y los descarga en el puerto marroquí de Tánger, donde los recogería el Nexoe Maersk para trasladarlos al puerto israelí de Haifa. Así lo denunciaron durante las escalas de abril en puertos españoles. Posteriormente, los propios portales de navegación mostraron que el Nexoe Maersk **llegó a Haifa** el 30 de abril de 2025, a las 6:11 horas.

Los demandantes subrayan que el Nexoe Maersk puede recibir suministros, insumos básicos y combustible a su paso por Barcelona, Valencia y Algeciras y que, con ello, estos puertos españoles estarían facilitando la llegada del barco a las costas marroquíes para cargar ese material militar y llevarlo a Israel.

Un barco de la naviera Maersk

Otros tránsitos por España

Fuentes del ministerio de Exteriores consultadas por este diario en abril señalaron que, "de acuerdo con la política anunciada por el Gobierno en mayo del año pasado a la vista de la crisis en Gaza, no se ha autorizado ninguna solicitud de tránsito por España de material de defensa con destino a Israel".

Sin embargo, no es la primera vez que la naviera danesa Maersk se ve implicada en acusaciones por el envío de armamento a Israel. Como desveló **una investigación** publicada por elDiario.es en noviembre, entre mayo y septiembre de 2024 **España actuó como puerto** de tránsito de material militar a Israel, a pesar de la suspensión anunciada por el Gobierno en mayo del año pasado.

Las organizaciones **Progressive International** y Palestinian Youth Movement denunciaron que en ese periodo de tiempo hubo al menos 25 trayectos de esas características, desde EEUU, con escala en Algeciras, a través de Maersk. Para acceder a esa información, usaron bases de datos de navegación, como Import Genius.

Product details

Container no.	Description area
	AES X20240419269513 CTR#MRSU0232156 SEAL# 5 50199 SIZE 40 40 FT HIGH CUBE 20 SKID(S) 31000.000LBS 666.6667CF CONTAINER CARGO NOS PROJECTILE BODY HS CODE 9306.90 MLL W AYBILL

Transit details

Transit name	Transit value
Departure Date	2024-04-27T00:00:00.000Z
Shipping Weight (LB / KG)	31000.00 / 14090.91
Quantity	20 SKD
Voyage	undefined
Zip Code	
Shipper Country Code	
Destination Country	ISRAEL
Vessel Name	MAERSK SELETAR
USCS Port	New York/Newark Area, Newark, New Jersey
Foreign Port	Algeciras

Detalles de cargamento a Israel en el barco Maersk Seleter, de 14 toneladas de cuerpos de proyectiles, parte de munición de artillería desde EEUU, el 27 de abril de 2024, con transbordo en Algeciras. Captura de pantalla del documento, informe del Centre Delàs de Estudios por la Paz

En ella indicaban, por ejemplo, que uno de esos barcos, el Maersk Sentosa, llegó a Algeciras el 16 de septiembre de 2024 con 866 toneladas de material militar, incluyendo vehículos militares o sus partes, y con la mayor parte del cargamento con descripción oculta. Todo ello se transbordó a otro barco, precisamente el Nexoe Maersk, que llegó al puerto israelí de Ashdod el 13 de octubre de 2024.

También en noviembre de 2024 este diario anunció que **otros once barcos** de Maersk, con armamento para Israel, tenían previsto hacer escala en España en las siguientes semanas. Ante ello, dos barcos desviaron su ruta y sustituyeron Algeciras por Tánger como puerto de escala, algo que también hicieron los siguientes buques.

El **medio danés Ekstra Bladet** informó de que estas denuncias provocaron reacción de la naviera danesa. Maersk se puso en contacto directamente con el ministerio de Exteriores danés y, tras ello, el Gobierno de Dinamarca "inició una fuerte actividad diplomática", también en España.

Los demandantes indican que datos públicos aduaneros de EEUU muestran cómo varios buques de Maersk han entregado armamento, componentes de aeronaves y municiones a Israel con posterioridad a octubre de 2023. "La propia Maersk ha reconocido su participación en el Maritime Security Programme, a través del cual EEUU facilita suministro de material militar a sus aliados", señalan.

En un comunicado publicado a mediados de marzo, la naviera Maersk afirma que no transporta "carga clasificada o sensible, que incluye armas y municiones, sin un Plan de Transporte presentado por el transportista y aprobado por el Gobierno" de EEUU. Las investigaciones internacionales y la demanda presentada en Barcelona no hacen referencia a carga clasificada, sino a material militar, entre el que ha habido suministros bajo la categoría 93, correspondiente a "armas y municiones", como vehículos militares o sus partes o cuerpos de proyectiles, entre otros.

La denuncia indica que el Nexoe Maersk puede recibir suministros y combustible a su paso por España, 'lo que facilitaría su llegada a Tánger y a Israel' "

El transporte de armamento a territorio israelí es clave para el desarrollo de sus operaciones en Palestina. En los últimos diecinueve meses Estados Unidos ha seguido suministrando importantes paquetes de material militar a Israel, a través de diferentes rutas. España, por su ubicación geográfica, es territorio potencial de paso de algunos barcos.

Otra investigación, a la que tuvo acceso elDiario.es en diciembre, comprobó que EEUU hizo uso de la **base española de Rota** para llevar armas a Israel en noviembre. Así lo denunciaron las organizaciones internacionales Palestinian Youth Movement y Progressive International, que tuvieron acceso a fotos satelitales. Por su parte, el Centre Delàs ha informado de otra ruta, de la naviera ZIM, a través de los puertos de Barcelona y Valencia.

El pasado mes de febrero una investigación internacional, basada en datos de aduanas israelíes y publicada por este diario, señaló **la existencia de una ruta** de transporte aéreo de armamento y material militar a Israel, a través del aeropuerto de Zaragoza, empleada "desde el comienzo del genocidio en Gaza".

Información publicada en un diario danés en marzo: "Maersk pidió ayuda al ministro de Exteriores cuando España rechazó los barcos Maersk con destino a Israel con material militar"

Petición de embargo integral de armas

Entre la documentación probatoria que acompaña a **la denuncia presentada** en el juzgado de Barcelona hay documentos que señalan la implicación de los buques Nexoe Maersk y Maersk Detroit en al menos cuatro operaciones de suministro militar a Israel durante los meses de septiembre y octubre de 2023. "En todas ellas, la carga fue transbordada en puertos españoles, por lo que España goza de jurisdicción y competencia para investigar los hechos denunciados", indican los demandantes.

Las seiscientas organizaciones integrantes de la campaña señalan que el tránsito por nuestros puertos de barcos implicados en el comercio de armamento con Israel es "otra prueba más de que el Gobierno de España no ha decretado un embargo integral de armas a Israel y de que debe hacerlo inmediatamente". También denuncian que Israel "no puede cometer un genocidio solo, lo hace con la complicidad de nuestras instituciones y ante la inacción de las autoridades competentes".

Este sábado tuvo lugar en Madrid una gran manifestación unitaria para exigir al Gobierno español un embargo integral de armas a Israel, con el que poder establecer mecanismos de vigilancia y herramientas que eviten todos los tránsitos de material militar y faciliten la prohibición de **contratos con empresas** armamentísticas israelíes.

Según el último informe del Centre Delàs de Estudios por la Paz, España mantiene relaciones armamentísticas con Israel "más

lucrativas que nunca", con **más de cuarenta contratos** de compra adjudicados o formalizados desde octubre de 2023, por valor de más de 1.041 millones de euros.

Manifestación unitaria este sábado en Madrid, por el fin del comercio de armas con Israel y un embargo integral

En el último trimestre de 2024 también se detectaron nuevas importaciones y **contratos** de adquisición de armamento a empresas israelíes. La Ley **española 53/2007** establece pleno compromiso con el **Tratado Internacional** sobre Comercio de Armas, que prohíbe las transferencias —lo que incluye el tránsito— de material militar a destinatarios que puedan usarlo para cometer crímenes de guerra como ataques a civiles, crímenes de lesa humanidad o genocidio, lo que sitúa a Israel en un destino no compatible con dicho Tratado.

Una **resolución de la Asamblea de la ONU** aprobada en septiembre –con 124 votos a favor, incluido el de España– ordena la suspensión de las inversiones, el comercio y las transferencias -lo que incluye el tránsito- que puedan contribuir a la ocupación ilegal israelí o usarse como material militar en los territorios palestinos.

Más de **52.000 personas** han muerto en Gaza desde el inicio de los ataques israelíes en octubre de 2023, según cifras actualizadas que no incluyen a los desaparecidos. El Gobierno israelí ha anunciado su intención de "conquistar" más territorio de la Franja, para impulsar una ocupación permanente, con nuevos desplazamientos forzados de población hacia el sur, cada vez más arrinconada.

> **Más información**
>
> **El Gobierno mantiene acuerdos de compra de armamento a Israel pese al anuncio de rescisión de un contrato**

Además, el Ejército de Israel sigue realizando operaciones militares en Cisjordania, donde desde enero hasta hoy también ha matado a decenas de palestinos y ha provocado el **desplazamiento forzado** de más de 45.000 personas.

Internacional

HE VISTO UN ERROR (!)

END UN PARTNERSHIP WITH GENOCIDE-ENABLING TECH IN "AI FOR GOOD" CONFERENCE AND REGULATE AI AND CLOUD AS DUAL-USE TECHNOLOGY

Palestinian civil society and solidarity organizations worldwide strongly condemn the United Nations International Telecommunication Union's (ITU) shameful partnership in its so-called "AI for Good" summit with tech companies, particularly Microsoft, Amazon, Google, Cisco, Oracle, and IBM, that, in providing cloud infrastructure and AI technologies to the Israeli Ministry of Defense, are deeply complicit in atrocity crimes (including apartheid and genocide). We call for global pressure on the UN and its member States to:

1. **End the UN's partnership with these and similarly complicit**

tech corporations in this summit and open the summit to critical analyses of AI, particularly by credible representatives of communities that are most affected by its unregulated use in the commission of international crimes; and designate AI and Cloud technologies as dual-use, given their proven use in facilitating Israel's military aggression, ethnic cleansing, and genocidal attacks on Palestinians;

2. **Cancel all UN contracts with Microsoft, Amazon, Google, Cisco, Oracle, Palantir and IBM whenever feasible; end all relations with corporations that are implicated in grave human rights violations, war crimes, crimes against humanity or genocide *anywhere* when viable alternatives exist; and exclude these complicit corporations from all future UN contracts by adopting a robust ethical procurement policy in accordance with international law, to replace the current UN's weak-by design supplier code of conduct;**

3. **Demand that the UN Secretary-General open an investigation into corporate capture of the UN and not work with Microsoft's UN Affairs offices in Geneva and New York given that Microsoft *knowingly* provides Israel with customized technology, including AI, that enables its atrocity crimes.**

UN tech partners Microsoft, Amazon, Google, Cisco, Oracle, Palantir and IBM are knowingly and persistently failing to meet their responsibilities under the UN <u>Guiding Principles on Business and Human Rights</u> and <u>the UNDP Guide on Heightened Human Rights Due Diligence for Business in Conflict-Affected Contexts</u>, while exacerbating violations of International Humanitarian Law, International Human Rights Law, and even the <u>UN supplier code of conduct</u>. Aside from their involvement in human rights violations worldwide, tech sponsors of this UN conference have been <u>exposed</u> for enabling Israel's "plausible" genocide against 2.3 million Palestinians in Gaza, as <u>determined</u> by the International Court of Justice (ICJ) in January 2024, and its illegal occupation and apartheid, as ruled by the ICJ in July 2024 (see <u>background</u> and <u>annex</u>). Despite ample evidence and knowledge of Israel's countless violations of international law and cruel conduct against Palestinians, including through <u>authoritative reports</u> by human rights organisations and

their own employees, the afore-mentioned companies have demonstrably taken no action to prevent their products from being used towards further genocidal acts or international crimes at large. On the contrary, in many cases, they have dramatically _increased_ their sales to Israel throughout its ongoing genocide.

All States and the UN have legal obligations to end this egregious corporate complicity in international crimes. By contracting them, accepting sponsorships from them or offering speaking platforms to them, the UN betrays its very mission–to uphold global peace and justice as well as ensure respect for international law and for UN conventions and institutions. It also whitewashes these corporations' complicity in atrocity crimes thus emboldening their criminal behavior.

These UN corporate partners are the technological backbone of Israel's illegal occupation and apartheid regime. They sell unregulated AI and cloud technologies overtly used by Israel's occupation forces to perpetrate genocide in the illegally occupied and besieged Gaza Strip (see annex). The UN celebrating "AI for Good" with such corporations is the infamous culmination of decades of aggressive corporate capture of UN institutions and _regulatory mechanisms_. Describing AI purposes, as seen by these companies, as "good" whitewashes their involvement in digital colonization, including mass surveillance and unauthorized manipulation of personal data. It also divorces the moral judgment of their impact on humanity from their commitment, or lack thereof, to human rights and international law.

Per the Genocide Convention Article III, complicity in genocide is as punishable as directly committing genocide, making the corporations aiding Israel's genocide, as well as their managers and directors, criminally liable for aiding the state perpetrating it. By failing to regulate AI and cloud technologies, the UN and its member States empower tech companies to develop illegal applications of these technologies for use in committing grave human rights violations worldwide, posing a serious threat particularly to the most affected communities in the Global South.

As critical cyber security expert Dr. Anwar Mhajne writes, "Israel's use of AI reveals the consequences of relying on individual states to regulate new technologies and safeguard human rights. A lack of international ethical guidelines and legal frameworks for AI, in other

words, will strengthen authoritarian governments."₁ South Asian law scholar Sadaf Naushad argued that "the Geneva Convention … must extend its coverage on the limits of AI weaponry, particularly limitations on development, production, and use." These warnings and calls for regulating AI are echoed by many experts. Japanese engineering and robotics specialist Dr. Haruki Ueno recently called for AI to be regulated as dual-use technology, cautioning, "artificial intelligence is too attractive a game-changing technology for powerful countries not to consider its use in military conflict." Kenyan AI expert Dr. Nderu writes, "while fairness in AI models is important, the [African] continent must confront the realities of dual-use technologies that threaten security, human rights, and sovereignty. Policymakers, researchers, and civil society must advocate for regulatory frameworks that govern not just how AI is trained but also how it is used in both civilian and military contexts. The future of AI in Africa must be one of empowerment, not subjugation."

The UN and its 193 member States already committed to implementing regulatory legal frameworks for ethical AI in the landmark 2024 *Pact for the Future, Global Digital Compact and Declaration on Future Generations*. The pact states, "we commit to advance equitable and inclusive approaches to harnessing artificial intelligence benefits and mitigating risks **in full respect of international law**, including international human rights law, and taking into account other relevant frameworks such as the Recommendation on the Ethics of Artificial Intelligence of the United Nations Educational, Scientific and Cultural Organization." [Emphasis added] We demand that the UN follow through on this commitment.₂

AI's impact on human rights is not limited to Palestinians. But as the "test subjects" for militarized technologies exported globally and as survivors of Israel's ongoing, AI-assisted genocide, Palestinians are a canary in the coal mine warning the world of the catastrophic future of weaponized AI.

With both civilian and military applications, AI (particularly agent-based AI) is at the forefront of a significant shift in weapons development and poses risks to international peace, security and human rights. Addressing and challenging the egregious abuses of unregulated militarized AI and cloud technologies and the possible corporate capture of the UN by tech oligarchs are urgent for human

rights and the pursuit of justice and peace globally. Now is the time for member States and the international community to heed this critical call from the most affected nations and communities.

Signatories:

- Palestinian Human Rights Organizations Council (PHROC)[3]
- General Union of Palestinian Workers (GUPW)
- Palestinian NGO Network (PNGO)[4]
- Palestinian Union of Postal, IT & Telecommunications Workers
- Federation of Independent Trade Unions
- Palestinian Federation of New Unions
- Medical Association - Jerusalem Center
- Palestinian Bar Association
- General Union of Palestinian Teachers (GUPT)
- Agricultural Engineers Association - Jerusalem Center
- Veterinarians Syndicate - Jerusalem Center
- General Union of Palestinian Women
- General Union of Palestinian Peasants
- General Union of Palestinian Writers
- Union of Palestinian Farmers
- Palestinian National Institute for NGOs
- Women Campaign to Boycott Israeli Products
- Global Palestine Right of Return Coalition
- Occupied Palestine and Syrian Golan Heights Initiative (OPGAI)
- Grassroots Palestinian Anti-Apartheid Wall Campaign (STW)
- Palestinian Campaign for the Academic & Cultural Boycott of Israel (PACBI)
- Civic Coalition for the Defense of Palestinian Rights in Jerusalem
- Coalition for Jerusalem
- National Committee to Commemorate the Nakba
- Union of Palestinian Charitable Organizations
- Fight for the Future
- Adalah Justice Project

- Tech Divestment Network

- No Tech for Apartheid Google and Amazon Workers

- No Azure for Apartheid Microsoft Workers

- Majal (social justice through tech in the Southwest Asia and North Africa)

- Tech for Palestine

- Bridge to Humanity: Cisco Workers of Conscience

- Oracle Employees for Palestine

- Numun Fund (supporting feminist technology ecosystem towards a more just world)

- Apples Against Apartheid (Apple workers for of conscience)

- Intel Workers for Palestine (UNCAGE)

- Tech Workers Coalition

- Jewish Voice for Peace

1- Anwar Mhajne, "*Israel's AI Revolution: From Innovation to Occupation*," Carnegie Endowment for International Peace, November 2, 2023. https://carnegieendowment.org/sada/2023/11/israels-ai-revolution-from-innovation-to-occupation?lang=en

2 - See also clause 20(b) of A/RES/78/213 of the UNGA as another example of UN resolutions in the works to protect against the worst iterations of AI "To prevent harm to individuals caused by artificial intelligence systems and to refrain from or cease the use of artificial intelligence applications that are impossible to operate in compliance with international human rights law or that pose undue risks to the enjoyment of human rights, unless and until the adequate safeguards to protect human rights and fundamental freedoms are in place".

3- PHROC members are :Addameer Prisoners' Support and Human Rights Association, Al Dameer Association for Human, Al-Haq, Al Mezan Center for Human, The Palestinian Centre for Human Rights, Defence for Children International – Palestine, Ramallah Center for Human Rights Studies, Hurryyat Centre for Defense of Liberties and Civil Rights, Jerusalem Center for Legal Aid and Human Rights.

4 - Civil Society coalition of 135 Palestinian NGOs.

1. WHAT MATERIALS ARE CRITICAL TO THE DEFENCE INDUSTRY?

The military industry requires large quantities of a wide range of materials to produce its assets, including aircraft, ships, tanks, radar systems, detection equipment, missiles and much more. Some of these materials are readily available, while others may pose significant challenges in the future.

A recent study[1] by *the Hague Centre for Strategic Studies* assesses the criticality of some forty raw materials used by the EU defence industry. The assessment is based on two key parameters. The first is impact, which measures how frequently a material is used within the defence industry—in other words, how many defence applications rely on it. A material that is used in many defence applications is considered to have a very high impact, as opposed to one that is used in only a few.

The second parameter is the likelihood of supply chain disruption. In the short term, the security of supply of a given material depends on whether its supply chain is diversified and whether its production centres are located in reliable countries with which good relations exist. If this is not the case, the risk of disruption is considered to be very high.

Overall criticality is assessed by combining these two parameters, allowing materials to be classified into four categories: (1) very high criticality materials; (2) high criticality materials; (3) medium criticality materials; and (4) low criticality materials. Table 1 lists the materials analysed, classified according to their criticality.

This study does not cover materials related to cybersecurity or space technologies. The analysis focuses on the EU defence industry, but the findings are likely to be broadly applicable to the US and UK industries, given the similarities in both the products involved and the potential strategic rivals and alliances.

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1. Girardi, B.; Patrahau, I.; Cisco, G.; Rademaker, M. (2023) *Strategic raw materials for defence. Mapping European industry needs*. The Hague Centre for Strategic Studies. Available at: https://hcss.nl/wp-content/uploads/2023/01/Strategic-Raw-Materials-for-Defence-HCSS-2023-V2.pdf

Table 1. Materials classified according to their criticality

criticality	material
very high	aluminium, graphite
high	cobalt, germanium, neodymium, samarium, tantalum, tungsten, vanadium, yttrium, dysprosium, lanthanum, platinum, praseodymium, silicon metal, terbium, beryllium, chromium, copper, iron/steel, nickel, titanium
medium	barium, borates, cadmium, gallium, indium, lead, manganese, molybdenum, silver, niobium, thorium, tin, zinc, zirconium, lithium
low	gold, hafnium, selenium

Source: Authors' own work with data from *The Hage*, 2023

1.1 VERY HIGH CRITICALITY MATERIALS

The materials in question are aluminium and graphite. These are the most widely used materials in the defence industry and have a high probability of supply disruption.

They are found in aircraft (fighter jets, transport aircraft, maritime patrol aircraft and unmanned aerial vehicles), helicopters (both combat and multi-role), aircraft carriers, amphibious assault ships, corvettes, patrol vessels, frigates, submarines, tanks, infantry fighting vehicles, artillery systems and missiles. These materials are used in various components such as the airframes and propulsion systems of helicopters and aircraft, as well as the on-board electronics of aircraft carriers, corvettes, submarines, tanks and infantry fighting vehicles. As such, any disruption to their supply would have a very significant impact, given the wide range of defence applications involved.

Europe is dependent on China for the supply of both materials. China is the world's leading producer of graphite,[2] accounting for 77% of world production, followed by Madagascar and Mozambique with 6% each. For aluminium, China remains the world's largest producer,[3] but with a smaller share (60%), followed by India (6%) and Russia (5%).

China and the EU are already engaged in a series of tit-for-tat trade sanctions. If the situation deteriorates further and imports of graphite and aluminium from China are disrupted, the EU would struggle to find alternative suppliers to make up the shortfall, given China's dominant position in the global market for both materials. If tensions between Europe and China escalate, the likelihood of supply chain disruptions is high.

That is why aluminium and graphite are classified as very high criticality materials, given both the high impact of these materials (due to their widespread use) and the likelihood of supply disruption.

1.2 HIGH CRITICALITY MATERIALS

Cobalt, germanium, neodymium, samarium, tantalum, tellurium, tungsten, vanadium and yttrium are materials subject to considerable geopolitical risk, although their use in the defence industry is moderate.

Yttrium, germanium, neodymium, tellurium and tantalum are mainly used in the electronics of infantry fighting vehicles, armoured personnel carriers and both self-propelled and towed artillery. Vanadium's primary application is in the on-board electronics of submarines, while tungsten is mainly found in the propulsion systems of aircraft, helicopter carriers, amphibious assault ships, corvettes, offshore patrol vessels and frigates. Cobalt and samarium are mainly used in cobalt-samarium alloys for aircraft, helicopters and missile propulsion systems.

The supply risks associated with these materials again stem from China's dominant position in their global production, in some cases more than 80%. For example, China produces 93% of the world's germanium,[4] 80% of its tungsten[5] and 68% of its rare earths,[6,7] all of which present the same risks discussed above.

The case of cobalt is different, with 73% of the world's production coming from the Democratic Republic of the Congo (DRC),[8] followed by Indonesia (5%) and Australia (3%). However, 15 of the 19 cobalt mines in the DRC are either owned by Chinese companies or have significant Chinese financial involvement. This, combined with the country's internal instability, heightens the risk of a cobalt supply disruption.

2. Government of Canada (2025), «Graphite facts», *Natural Resources Canada*. Available at: https://natural-resources.canada.ca/minerals-mining/mining-data-statistics-analysis/minerals-metals-facts/graphite-facts Accessed on 19/02/25
3. Harbor Aluminum. (2025). «Aluminum Production by Country». Available at: https://www.harboraluminum.com/en/top-aluminum-producing-countries Accessed on 19/02/25
4. Statista. (2025). «Germanium global production share by country». Available at: https://www.statista.com/statistics/1445497/germanium-share-of-production-worldwide-by-country/ Accessed on 19/02/25
5. Arora, A. (2024). «Top-10 Tungsten Producing Countries in the World». *Current Affairs Adda 247*. Available at: https://currentaffairs.adda247.com/top-10-tungsten-producing-countries-in-the-world/ Accessed on 19/02/25
6. Rare earths are a group of 17 chemical elements in Group 3 of the Periodic Table, comprising the lanthanides (lanthanum, cerium, praseodymium, neodymium, promethium, samarium, europium, gadolinium, terbium, dysprosium, holmium, erbium, thulium, ytterbium and lutetium), scandium and yttrium.
7. Zhu, Kayla. (2024). «Visualizing Global Rare Earth Metals Production (1995-2023)», *Visual Capitalist*. Available at: https://www.visualcapitalist.com/visualizing-global-rare-earth-metals-production-1995-2023/ Accessed on 19/02/25
8. MINING.COM. (2023). «Ranked: The world's top cobalt producing countries», *Visual Capitalist – Elements*. Available at: https://www.mining.com/web/ranked-the-worlds-top-cobalt-producing-countries/ Accessed on 19/02/25

The DRC is also the leading producer of tantalum,[9] accounting for 41% of global production, followed by Rwanda (22%) and Brazil (15%). The internal instability of these countries makes the supply chain for this material highly vulnerable, with few viable alternatives in the event of a disruption among the main producers.

The use of dysprosium, lanthanum, platinum, praseodymium, silicon metal and terbium in military applications is extremely limited. Dysprosium is mainly used in propulsion systems and airframes for aircraft and missiles. Praseodymium is used exclusively in aircraft propulsion and electronic systems, platinum in submarine and aircraft propulsion systems, and silicon metal *in missile radomes* (the protective housing for antennas).

However, the supply chains for these materials are highly exposed to geopolitical risks. Dysprosium, terbium, lanthanum and praseodymium are all rare earth elements, most of which are mined in China, which accounts for 68% of global production. Silicon metal is also largely mined in China (77%).[10] In contrast, platinum is mainly mined in South Africa (71%), followed by Russia (12%) and Zimbabwe (7%). South Africa is seen as an unreliable supplier and with Russia as the second largest producer, the risk of platinum supply disruption is high.

The reliability of producers of these materials is generally low, raising the likelihood of geopolitical risks and security of supply issues to a high level.

Beryllium, chromium, copper, iron/steel, nickel and titanium are all used significantly in the defence industry—albeit to a lesser extent than graphite and aluminium—and are found in numerous applications in all three military domains: air, sea and land. Their wide range of applications makes them critical materials. However, as the primary producers of these resources are countries with good relations with the EU, the risk of supply disruption is considered low. They are therefore classified as high-risk materials.

For example, the US produces 64% of the world's beryllium,[11] although China follows with 26%. Copper

production is well diversified,[12] with Chile accounting for 24%, DRC 11% and Peru 11%. The leading producers of iron/steel are Australia (38%) and Brazil (16%),[13] while China is the largest producer of refined materials, including both copper (43%) and iron/steel (61%).

1.3 MEDIUM CRITICALITY MATERIALS

Barium, borates, cadmium, gallium, indium, lead, manganese, molybdenum and silver are considered less problematic as they have fewer military applications than the materials discussed above. The risk of supply chain disruption for these materials is only moderate, as their production is diversified and the supplying countries have good relations with the EU.

Niobium, thorium, tin, zinc and zirconium have relatively limited military applications. Although there may be some risk of supply disruption, they are also included in this medium-risk group.

Lithium is mainly used in lithium-ion batteries for electric motors. While global demand for lithium is largely driven by civil commercial applications, the diversity of supply sources means that security of supply is considered to be of medium impact.

1.4 LOW CRITICALITY MATERIALS

Of the materials analysed, only three used in the defence industry are considered to have a low risk in their supply chains: gold, hafnium and selenium.

The supply of gold is well diversified and many of its producers are reliable partners of the EU. As a result, the likelihood of supply chain disruption is minimal.

Naturally, the criticality vary between the different military domains—land, air and sea—as each relies on different materials in different proportions. Table 2 shows the level of criticality associated with each material in different military applications, providing a useful point of reference.

9. Pistilli, M. (2024). «Top 5 Tantalum-mining Countries (Updated 2024)». *Nasdaq.* Available at: https://www.nasdaq.com/articles/top-5-tantalum-mining-countries-updated-2024 Accessed on 19/02/25
10. CRM Alliance. (n.d.). «Silicon Metal». Available at: https://www.crmalliance.eu/silicon-metal Accessed on 19/02/25.
11. European Commission (2025). «Beryllium». *RMIS – Raw Materials Information System.* Available at: https://rmis.jrc.ec.europa.eu/rmp/Beryllium Accessed on 19/02/25.
12. European Commission (n.d.). «Copper». *RMIS – Raw Materials Information System.* Available at: https://rmis.jrc.ec.europa.eu/rmp/Copper Accessed on 19/02/25.
13. European Commission (n.d.). «Iron & Steel». *RMIS – Raw Materials Information System.* Available at: https://rmis.jrc.ec.europa.eu/rmp/Iron%20&%20Steel Accessed on 19/02/25.

Table 2. Criticality of raw materials in military applications

	Fighter jets	Tanks	Missiles	Submarines	Corvettes	Artillery	Ammunition	Torpedoes	Assault rifles
Very high criticality	aluminium, graphite	aluminium, graphite	aluminium	aluminium, graphite	aluminium, graphite	aluminium, graphite	aluminium, graphite	aluminium	
High criticality	beryllium, chromium, cobalt, copper, dysprosium, germanium, iron/steel, lanthanum, nickel, neodymium, platinum, praseodymium, samarium, tantalum, titanium, tellurium, terbium, tungsten, vanadium, yttrium	beryllium, chromium, copper, germanium, iron/steel, neodymium, nickel, tantalum, tellurium, titanium, tungsten, vanadium, yttrium	chromium, cobalt, copper, dysprosium, iron/steel, neodymium, nickel, praseodymium, samarium, silicon metal, tantalum, titanium, tungsten	chromium, cobalt, iron/steel, platinum, samarium, titanium, tungsten, vanadium	cobalt, chromium, copper, iron/steel, nickel, samarium, titanium, tungsten	beryllium, chromium, copper, germanium, iron/steel, neodymium, nickel, tantalum, tellurium, vanadium, yttrium	beryllium, copper, germanium, neodymium, tantalum, tellurium, titanium, yttrium	chrome	iron/steel, vanadium
Medium criticality	barium, borates, cadmium, gallium, indium, lead, lithium, manganese, molybdenum, niobium, silver, tin, thorium, zinc, zirconium	borates, cadmium, gallium, indium, manganese, molybdenum, selenium, thorium, zinc	borates, lead, lithium, niobium, molybdenum, zirconium	barium, lead, lithium, manganese, niobium, silver	barium, lead, lithium, molybdenum, manganese	cadmium, molybdenum, manganese, indium	cadmium, indium	lead, lithium, manganese, zirconium, silver	
Low criticality	gold, hafnium, selenium	hafnium		hafnium	gold				

Source: Authors' own work with data from *The Hage*, 2023

2. PERCEPTIONS OF THE ISSUE AND PROPOSED RESPONSES

2.1 PERCEPTION AND PROPOSED RESPONSES: THE UNITED STATES

The United States Energy Act of 2020 . defines a "critical mineral" as a non-fuel mineral or mineral material that is essential to the economic or national security of the country and whose supply chain is vulnerable to potential disruption. The White House and the Department of Defense (DoD) consider critical materials to be vital to national security.[14]

In the defence context, critical materials refer to elements, metals and other substances that are not sufficiently available from domestic sources, but are essential to weapons systems. The DoD maintains a strategic stockpile of such materials. Despite their importance, many of these materials are outsourced

from countries that are US competitors—a situation that is considered a risk to national security.

Rare earths and other critical materials such as tantalum and tungsten have no equivalent substitutes that can perform at the same level.

Most of these materials are mined and processed in China, leaving DoD weapon system programmes vulnerable to supply chain disruptions imposed by a rival state.

For instance, China dominates the mining and processing of rare earths. These are critical materials with unique magnetic and heat-resistant properties that are highly valuable to DoD weapons systems. One example is neodymium, a rare earth element used to make magnets that are exceptionally strong, retain their magnetic force at high temperatures and perform reliably under extreme conditions, such as those encountered in combat.

Rare earth mining capacity in the US has declined over the past 40 years, owing to the emergence of low-

14. U.S. Government Accountability Office. (2024). *Critical materials: Action needed to implement requirements that reduce supply chain risks*, Q&A Report to Congressional Committees, *No. GAO-24-107176*. Available at: https://www.gao.gov/products/gao-24-107176 Accessed on 19/02/25

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er-cost suppliers in other countries, such as China, and the significant environmental impact of mining operations. According to DoD officials, the US enforces stricter environmental regulations than China, allowing the latter to mine and process rare earths and certain other critical materials at a lower cost.

Between 2019 and 2022, the US imported more than 95% of the rare earths that it consumed, with nearly three-quarters of those imports coming from China. If China were to stop selling to the US. the latter would lose access to these materials and be forced to find alternative options.

So what is the DoD doing to reduce its reliance on China and secure critical material supplies? First, it is undertaking several initiatives to reduce its dependence on rival nations for critical materials. It is also taking steps to encourage the expansion of domestic mining, processing and production of these materials. Since 2020, the DoD has committed over $439 million to build domestic supply chains for rare earth elements.[15]

The DoD also maintains a strategic stockpile of materials deemed essential to national defence and civilian life. A 2019 act prohibits sales from this stockpile to certain adversaries, unless such sales are deemed to be in the national interest. However, the DoD has not fully implemented this legislation.

Adam Burstein, a senior official in the Office of the Assistant Secretary of Defense for Industrial Base Policy, said in January 2025 that the focus must be on increasing domestic mining and processing[16]. The US currently has only one active rare earth mine. Last year, the US awarded several grants to projects in Canada, which have also received funding from the Canadian government. These initiatives, said Burstein, are aimed at bolstering the security of supply of key materials such as cobalt, graphite and tungsten.

In a 2024 report,[17] the Carnegie Endowment for International Peace assessed the situation and offered several considerations and potential actions to help mitigate the problem.

Both the United States and Europe are heavily dependent on mineral imports, including from rival powers such as China, which supplies graphite, rare earths and other minerals, and Russia, which supplies aluminium, nickel and titanium.

The US and its allies are struggling to secure supplies of critical minerals in a global context where China dominates mineral production and NATO countries are at a relative disadvantage. There are three main risks that could lead to mineral shortages: export controls; growing military demand as global power competition intensifies (including the potential for conflict between the US and China); and disruptions to maritime trade routes.

First, export controls are a pressing challenge. In 2021, China effectively banned graphite exports to Sweden, and by the end of 2023 it introduced export restrictions on gallium, germanium and graphite to all countries. Most US imports of these minerals come from China, and indeed Chinese exports of gallium and germanium have fallen sharply. In December 2023, Beijing also banned the export of technology used to make rare earth magnets. China could potentially extend export controls to other minerals such as bismuth, tantalum and rare earth elements.

The second risk stems from the surge in production of both defence platforms and munitions—an increase primarily aimed at replenishing stockpiles depleted by support for Ukraine.

The third risk emanates from rising tensions and the potential for conflict in the Taiwan Strait, which would disrupt maritime trade routes carrying minerals from East Asia, a key supply region for the US and other NATO members. Japan and South Korea are major mineral producers with substantial reserves, and the US and NATO would struggle to gain access to these resources if conflict broke out in East Asia. The same is true for Australia. In 2023, the US Department of Defense estimated that there would be shortages of 69 materials in the event of a large-scale conventional conflict between the US and China.

The DoD is working to expand domestic mineral production in the United States by providing funding to local producers. This entails building new refineries, expanding existing facilities and reactivating dormant sites. Mining projects require significant upfront capital to get off the ground and take years to generate a return on investment, discouraging companies from committing millions to such ventures. Governments in the US and allied countries should therefore step in to fill this private-sector gap by providing capital to support these projects

15. Todd Lopez, C. (2024). «DOD Looks to Establish 'Mine-to-Magnet' Supply Chain for Rare Earth Materials», *U.S. Department of Defense*. Available at:https://www.defense.gov/News/News-Stories/Article/Article/3700059/dod-looks-to-establish-mine-to-magnet-supply-chain-for-rare-earth-materials/ Accessed on 19/02/25
16. Vergun, D. (2025). «Securing Critical Minerals Vital to National Security, Official Says». *U.S. Department of Defense*. Available at: https://www.defense.gov/News/News-Stories/Article/Article/4026144/securing-critical-minerals-vital-to-national-security-official-says/ Accessed on 19/02/25
17. Wischer, G. (2024). «The U.S. Military and NATO Face Serious Risks of Mineral Shortages». *Carnegie Endowment for International Peace*. Available at: https://carnegieendowment.org/research/2024/02/the-us-military-and-nato-face-serious-risks-of-mineral-shortages Accessed on 19/02/25

The US Congress is authorising and appropriating funds for new purchases of materials for the National Defense Stockpile. Both the US and NATO need to step up these efforts.

Materials produced in the US and allied countries should be stockpiled. Governments could even consider pre-paying for these materials to help finance exploration projects. Such stockpiles could be financed by higher tariffs on minerals imported from China and Russia.

2.2 PERCEPTION AND PROPOSED RESPONSES: NATO

NATO Ministers of Defence approved a supply chain security roadmap at their June 2024 meeting.[18] The roadmap outlines specific opportunities for collective and/or multinational cooperation to protect allied supply chains from potential disruptions that could undermine NATO's deterrence and defence capabilities.

For NATO, the responsiveness, strength, resilience and security of supply chains are essential to protecting allied industry and ensuring that the Alliance can develop military capabilities free from the hostile influence of potential adversaries.

NATO has identified 12 critical raw materials that are essential to the production of advanced defence systems and equipment.[19] They are: aluminium, beryllium, cobalt, gallium, germanium, graphite, lithium, manganese, platinum, rare earths, titanium and tungsten. In reality, the number is higher because the rare earths category includes several elements. NATO regards the secure availability and supply of these materials as vital to maintaining its technological edge. Disruptions in their supply could hinder the production of essential defence equipment. The roadmap identifies a number of key actions: identifying critical materials as a first step in building stronger, better protected supply chains; making recommendations for strategic stockpiling; identifying opportunities for recycling and substituting key strategic materials; and establishing a NATO community of interest focused on the defence supply chain.

18. NATO. (2024). «Defence-Critical Supply Chain Security Roadmap». *Factsheet July 2024*. Available at: https://www.nato.int/nato_static_fl2014/assets/pdf/2024/7/pdf/240712-Factsheet-Defence-Supply-Chain-Ro.pdf Accessed on 19/02/25
19. NATO. (2024). «NATO releases list of 12 defence-critical raw materials». *Newsroom*. Available at: https://www.nato.int/cps/en/natohq/news_231765.htm Accessed on 19/02/25

2.3 PERCEPTION AND PROPOSED RESPONSES: THE EU

The EU 2020 report on critical raw materials [20] identifies seven emerging technologies as important for European defence: advanced batteries, fuel cells, photovoltaics, robotics, unmanned vehicles, 3D printing, and information and communication technologies.

A total of 39 raw materials are identified as the most necessary for the production of alloys and composites, and thus for the production of defence subsystems and components. Of these 39 raw materials, 22 are considered critical to the EU economy. The EU is the world's leading supplier of only one of them: hafnium. These materials are listed in Table 3.

Table 3. Essential and critical raw materials for the EU, according to the 2020 report.

Essential raw materials	Aluminium, cadmium, chromium, copper, iron, lead, manganese, molybdenum, nickel, rhenium, thorium, tin, zinc, zirconium, silver, gold, selenium
Critical raw materials	Indium, tantalum, gallium, lithium, titanium, barium, germanium, magnesium, tungsten, cobalt, beryllium, hafnium, niobium, vanadium, platinum, boron, dysprosium, samarium, neodymium, yttrium, praseodymium, other rare earth elements

Source: Authors' own work

A particular challenge for the European defence industry is the supply of processed materials, including the associated knowledge and processing capabilities. The EU has limited capacity to produce special composite materials. In some cases, the defence sector requires special steels or alloys, often with a higher degree of purity than those used in civil applications. The EU is totally dependent on imports for 13 of the 39 identified raw materials (boron/borates, dysprosium, gold, magnesium, molybdenum, neodymium, niobium, praseodymium, samarium, tantalum, titanium, yttrium and other rare earth elements). Overall, more than two-thirds of these materials have an import rate above 50%.

According to the criticality ratings assigned to these 22 critical raw materials and their use in specific sub-sectors, the aerospace and electronics industries

20. European Commission (2020). *Critical Raw Materials for Strategic Technologies and Sectors in the EU: A Foresight Study.* Luxembourg Publications Office of the European Union. Available at: https://rmis.jrc.ec.europa.eu/uploads/CRMs_for_Strategic_Technologies_and_Sectors_in_the_EU_2020.pdf

are most vulnerable to potential supply constraints. Given the strategic importance of the defence and aerospace sectors to Europe's security, it is essential that the associated manufacturing industries operate without interruption. To this end, the European defence industry needs to ensure the continuous supply of certain raw materials from international sources, maintain its world leadership in the production of high-performance alloys and special steels, and further develop its capabilities in the production of special composite materials.

The aerospace sub-sector in particular requires a large number of highly specialised and complex materials, including certain composites and alloys as well as titanium, graphite and fibreglass. The most important are: aluminium alloys, steel alloys, titanium alloys, superalloys, composites and other materials such as ceramics, GLARE (a laminate of fibreglass and aluminium with epoxy resin), magnesium and special alloys. Traditional materials are constantly being replaced by new lightweight alternatives such as titanium alloys, composites (particularly glass and carbon fibre) and high-temperature plastics. These materials offer increased strength and reduced weight. In the defence industry, this means improved manoeuvrability and extended range (through reduced fuel consumption) for fighter jets. However, the EU lacks major producers of aerospace-grade carbon fibre, which is currently produced mainly in Japan and the US. At present, there is a low-to-medium bottleneck in the supply chain of aerospace materials and other semi-finished products used by the EU defence industry.

2.4 MATERIALS USED IN SPACE APPLICATIONS

A marked increase in the satellite population is expected in the coming decades. This could affect the availability of certain advanced materials—including carbon fibres, resins and special alloys—for European space projects (spacecraft, satellites, launchers, etc.) in the same time frame.

The European Space Agency (ESA) has published information on the raw and advanced materials needed in the space sector:

■ There are concerns about the availability of high-modulus carbon fibre composites for space applications. There is only one producer (based in Japan) and the European industry has access to only a limited part of its production, the majority being reserved for the US market.

■ European resin production capacity is limited (one or two companies).

■ There is some concern about the availability of high-strength aluminium alloys, given the small quantities required by the market.

End-of-life recycling remains a challenge. ESA has investigated the use of recycled germanium in solar arrays. Beyond that, recycled materials are not currently considered for most space applications, which rely exclusively on virgin materials. The recovery of materials at the end of a mission is unrealistic due to the current design of space missions, which results in the systematic dispersal of materials either in space or during atmospheric re-entry.

For the seven emerging technologies mentioned above, supply chain bottlenecks are obstructing raw material sourcing and final assembly. This is particularly true for lithium-ion and fuel cell batteries, but also, to a lesser extent, for drones. The EU's dependence on imported raw materials for these emerging technologies is extremely high. On average, the EU produces only around 3% of the total raw materials needed for these technologies (excluding digital technologies). China dominates global production, supplying more than half of the raw materials, with the rest coming from many small suppliers. In terms of components, solar photovoltaic technologies and robotics are the most vulnerable, although there are also supply risks for lithium-ion batteries and drones. The supply of processed materials has proven to be particularly critical for lithium-ion batteries.

The main suppliers of raw materials used in the defence sector are China (58%), South Africa (8%), Chile (8%) and the US (2%), with the remaining 24% sourced from other countries.

A number of measures need to be taken to improve the security of supply of raw and processed/semi-finished materials for the European defence and aerospace industries, including:

■ Supporting R&D programmes focused on developing advanced, high-tech materials;

■ Strengthening the supply chain for these materials, in particular for processed materials, together with the associated knowledge and processing capabilities; and

■ Improving the knowledge base on the materials used, for example by promoting the exchange of information between all relevant stakeholders.

With regard to the supply risk of materials for emerging defence and aerospace technologies, it is vital that the EU reduces its dependence and increases security

Biometrics-for-food: a dangerous shift from humanitarian relief to coercive surveillance

Published on **15 MAY 2025**

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Skyline International for Human Rights (SIHR) strongly condemns the proposed system for delivering humanitarian aid to Palestinians in Gaza, a scheme that merges biometric surveillance, private military contracting, and Israeli oversight, effectively turning humanitarian relief into a mechanism of coercion and control.

Israel's plan seeks to shift the distribution of humanitarian assistance in Gaza from independent NGOs and humanitarian agencies to private companies, a move that would bypass UN-led coordination and prioritize profit-driven, militarized systems. According to media reports, the proposal is led by the **Gaza Humanitarian Foundation (GHF)**, a newly established private charity registered in Geneva. Headed by Nate Mook, former CEO of the World Central Kitchen charity, GHF has not disclosed its sources of funding.

At the heart of this proposed system is the mandatory collection of biometric data, including facial recognition scans, at predesignated, militarized 'safe zones' across Gaza. **Palestinians would be required to undergo these scans as a condition for receiving essential humanitarian aid, transforming these**

zones into checkpoints where access is determined by compliance with surveillance.

U.S.-based private security contractors, with military and intelligence backgrounds, are expected to monitor these zones. Notably, [Safe Reach Solutions](#), one of the firms involved, is led by former CIA paramilitary chief Philip F. Reilly, [who was previously affiliated with Constellis](#)—the company that acquired Blackwater, infamous for its [role in the 2007 Nisour Square massacre in Iraq](#). Another contractor, **UG Solutions**, is led by a former U.S. Special Forces operative and has [reportedly](#) provided security in the Netzarim corridor during the ceasefire in late January.

In October 2024, [reports surfaced](#) about a joint Israeli-American initiative to entrust control of Gaza's humanitarian aid to the U.S.-based **Global Development Company (GDC)**, a private security firm founded by Israeli settler-American businessman Mordechai Kahana. The proposal includes establishing checkpoints that would restrict Palestinians' movement [unless they provide biometric data, such as fingerprints, facial scans, and voice samples](#). Those who refuse would be cut off from life-saving supplies.

This privatized aid system marks a dangerous shift from traditional humanitarian organizations to for-profit companies controlling aid distribution. **It is not merely a change in how aid is delivered, but rather an oppressive transaction, forcing Palestinians to surrender their biometric data—such as facial and iris scans—in exchange for essential aid like food, water, and medical care.** What's being presented as humanitarian relief is, in reality, a system of mass surveillance. Gaza's civilian population—[already subjected to years of surveillance](#)—now faces a new phase of techno-dystopian experimentation, one that seeks to divide the territory into digitally enforced zones of control and entrench surveillance deeper into the ongoing blockade.

In March of last year, as [reported by the New York Times](#), Israel deployed facial recognition technologies at Gaza's checkpoints to track and monitor Palestinians, a practice that has already sparked grave criticism over misidentification, profiling, categorization, and violations of consent. While distinct from the proposed aid model, these systems are part of a broader infrastructure supporting Israel's ongoing occupation and genocide. **Mandating such technologies in the aid system risks replicating these abuses—turning aid from a lifeline into a tool for control and oppression.**

The use of biometric surveillance as a condition for receiving humanitarian aid is a blatant violation of Palestinians' right to privacy, a fundamental human right guaranteed under international law. Article 17 of the International Covenant on Civil and Political Rights (ICCPR) protects individuals from arbitrary interference with their privacy. This proposal violates these privacy protections and autonomy by compelling civilians to provide sensitive personal data to access critical resources.

Furthermore, it **constitutes a grave breach of international humanitarian law, which mandates that aid be delivered impartially, without coercion, and without compromising the dignity and rights of recipients.**

UN agencies have strongly condemned the proposed plan, stating they will not cooperate with a system that effectively ["weaponizes" aid](#). UNICEF has explicitly [rejected](#) the biometric approach, describing it as "a breach of humanitarian

ethics" and highlighting the dangers posed by forcing civilians to enter militarized areas for aid. Similarly, the UN's humanitarian office (OCHA) has raised serious concerns about the feasibility of the proposal, particularly for the elderly, disabled, and sick, who may be entirely excluded from receiving aid due to their inability to reach the distribution zones.

Rather than alleviating the humanitarian catastrophe in Gaza, this plan institutionalizes surveillance and control over aid access, using rations as a means of enforcing compliance. With aid reportedly limited to just 60 trucks per day—a fraction of what was delivered during the previous ceasefire—the initiative seems more focused on imposing order through scarcity than on offering genuine relief.

As Gaza nears the brink of famine due to Israel's ongoing blockade, this proposal's introduction of biometric systems, contractor-run checkpoints, and digitally monitored "aid corridors" represents a dystopian turn. Aid is offered with one hand and withheld with the other, unless recipients surrender their privacy, mobility, and freedom.

As Israel and the U.S. tighten their grip on Gaza, they seek to shift the burden of oppression from military force to private mercenary companies. While Israel maintains its deadly blockade, **this new strategy uses technology to further strip Palestinians of their basic rights. What is marketed as aid only deepens the humanitarian disaster, cementing a system of digital control that dehumanizes an entire population.**

SIHR stands with UNICEF, OCHA, and the broader humanitarian community in rejecting this aid model. Surveillance must never be a condition for survival, and militarization must never replace humanitarianism. Aid must remain impartial, independent, and grounded in human dignity—not turned into a system of coercion and control.

Read in Arabic / للقراءة بالعربية

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Post tags: **palestine**, **surveillance**, **Humanitarian aid**, **Biometrics**,

E arly in the 1990s, pundits claimed that proliferation would prove to be little more than a passing fancy of security specialists and the Clinton administration. It didn't work out that way. Today, the problem is broadly seen as one of enduring importance for US national security and global stability in the post-Cold War era. Accordingly, we have worked for roughly a decade now to come to terms with the proliferation problem without the Cold War as context. As a community of policymakers and analysts, we have had a rough time doing so. We began with what we thought we knew, which turned out to be not enough. We reinvigorated traditional policy approaches, only to have to improvise and innovate as the world changed. Moreover, our community has steadily expanded, as the proliferation issue has begun to cut across an ever broader array of foreign and defense policy interests and as more and more people—many with very different backgrounds—have had to learn about the proliferation of nuclear, biological, and chemical (NBC) weapons and their missile delivery systems.

The time is now ripe to stand back and attempt to draw some lessons. What have we learned about the problem? What have we learned about the necessary policy responses? How reliable are the political foundations of the effort to combat proliferation? Where are we headed over the next decade or so? The purpose of this viewpoint is to sketch out some preliminary arguments on these questions, in the hope that the exercise will stimulate broader debate.

WHAT HAVE WE LEARNED ABOUT THE PROBLEM?

A lot of the thinking about proliferation began with a bad premise: that today's proliferation problem is yesterday's proliferation problem. What's changed? And what hasn't?

VIEWPOINT: PROLIFERATION AND NONPROLIFERATION IN THE 1990S: LOOKING FOR THE RIGHT LESSONS

by Brad Roberts

The term "proliferation" first entered the public policy lexicon in the 1950s. The proliferation problem was the "N+1" problem, in Albert Wohlstetter's famous characterization, meaning the next incremental addition to the number of nuclear weapon states.[1] As the concern about nuclear weapons programs in Iraq, Iran, North Korea, and elsewhere suggests, the N+1 problem remains central to the proliferation problem. But the matter is no longer nearly so straightforward.

The nuclear focus has long since given way to a much broader set of concerns. In the 1980s, chemical weapons emerged as weapons of proliferation concern within a number of regions and at the global level. Biological weapons emerged as an additional concern in the 1990s. Medium- and long-range missile delivery systems are also spreading, both ballistic and cruise. Advanced conventional warfare systems or subsystems are widely traded on an international arms market that has been revolutionized over the last decade. These weapons and associated capabilities are of course distributed unevenly within and among regions.

Moreover, the nuclear subject is itself changing. The list of countries of proliferation concern no longer includes just those seeking strategic deterrents but also includes some countries with avowed hegemonic aspi-

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rations and run by authoritarian if not megalomaniacal leaders. The problem of "loose nukes" and "instant proliferation" has also gained dramatic new prominence. There is also an increased concern with the diffusion of nuclear technologies, materials, and expertise, whether because of the collapse of the Soviet Union or the interest in nuclear energy in Europe, Asia, and the developing world (65 states now operate nuclear reactors). The latent nuclear weapons capabilities found in an increasing number of countries have also begun to attract attention.

A careful tally of the number of weapons of mass destruction (WMD)-armed states reveals that there is no historical inevitability to growth in their numbers. The number of chemically-armed states was high in World War I, ebbed in the inter-war period, inched up during the Cold War, grew quickly in the 1980s, and has begun again to ebb. The number of states actively pursuing biological weapons was high in World War II, low in the Cold War, also grew in the 1980s, and appears to have held steady since then. Over the last decade, the number of states actively seeking a nuclear weapons capability has been smaller than the number that have abandoned nuclear weapons and/or the associated development programs.[2]

But there *is* an historical inevitability to the latency phenomenon. Beneath the patterns of conventional and unconventional weapons proliferation is a much more substantial pattern of technology diffusion. Reflecting the globalization of the industrial revolution, this diffusion has been greatly accelerated by the emergence over the last couple of decades of a transnational economy in which technologies, materials, capital, and expertise flow rapidly across international borders, typically from firm to firm rather than from state to state. Many of these technologies and materials are dual-use in nature, meaning they have both civil and military applications. In fact, the number of civil technologies with military applications appears to be growing ever larger and includes today, for example, biotechnology, commercial observation satellites, and the Internet. Also increasingly available internationally are so-called enabling technologies that facilitate the production, integration, and use of weaponry.[3]

In short, more and more countries are acquiring the ability to produce strategic military capabilities. This potential to create long-reach weapons with the ability to inflict mass casualties could supply these countries with great political leverage in time of war and crisis. These latent capabilities are strategic hedges. One of the least measurable indices of proliferation, but also one of the most important, is the degree to which states consciously develop those hedges so that they are in a position to compete successfully if they enter a disintegrating international environment that calls for rapid break-out.

Along with the proliferation of weapons and weapons capabilities to states has come a growing concern about their availability to sub-state and non-state actors—terrorists. The nuclear era has seen many purported extortionists, but no known instance of the use of an explosive device to generate fear in order to extract a political concession of some kind. Chemical and biological warfare agents also have been exploited by extortionists over the years, but only in the nefarious attacks of the Japanese sect Aum Shinrikyo have they been used to wound and kill in large numbers. Yet this seems likely to change. Technological advance, combined with technology diffusion, has put mass casualty attacks within reach of small groups and even individuals, including those without state sponsorship. The disincentives to such sponsorship have been high, but may be eroding as proliferation erodes the norms against such weapons.

Thus the full compass of the proliferation problem runs from N+1 to strategic latency and terrorism. The issue is what people in positions of authority choose to do with the war-making potential inherent in modern economies (or potentially available from certain states or profit-minded firms on the international market). How much latency will state leaders believe to be necessary? How close to the threshold of weaponization? How overt the posture? Although war-making potential is latent in any economy, the latency discussed here is unlike anything known before because of the relative ease and speed with which weaponry with strategic impact can be assembled and used.

WHAT HAVE WE LEARNED ABOUT POLICY RESPONSES?

As a community of policy experts, we long for the days when everything we needed to know about policy was encompassed in the term nonproliferation—and when the only nonproliferation measure that seemed to matter was the Treaty on the Non-Proliferation of

Nuclear Weapons (NPT). We have learned that the policy agenda is a good deal more comprehensive. We are beginning to learn that winning the proliferation battle means getting it more or less right in lots of different policy areas. We've learned also that there will be no quick fix and no quick victory. But we hope that there will be enough small ones to balance the losses. We have also begun to learn something about the specific functions of the major policy tools—treaties, export controls, and counterproliferation—in the current, post-Cold War era.

The NPT remains the cornerstone of the nonproliferation effort, along with associated restraints on the supply of nuclear materials and technologies. At the 1995 review conference of states parties, the NPT was given an indefinite extension, although not without a good deal of debate about whether a conditional extension might have been more helpful to accomplishing the treaty's various aspirations. The function of the NPT is to bind virtually every member of the international system into a legal obligation reflecting an anti-nuclear norm. Only a tiny handful of states remain outside the NPT. But there is also fundamental uncertainty about the durability of the political bargain it codifies between the have-nots and the haves, in which the former have forsworn nuclear weapons in the expectation that the latter will fulfill a promise to eliminate them in due course.

Nonproliferation has evolved as the problem has changed. The growing number of proliferation problems has resulted in an expanding set of export control regimes, such as the Australia Group to monitor the trade in materials and technologies sensitive from the point of view of chemical and biological weapons, the Missile Technology Control Regime, and the Wassenaar Arrangement, which is the successor to COCOM for managing international trade in sensitive materials more generally. In the rapidly globalizing trading system, such arrangements cannot function as simple supplier cartels. Even as they struggle to bring in new members, they have a hard time keeping pace with the steadily growing number of suppliers. Instead, they operate as clubs of like-minded states interested in seeing that the trading system's rules for the exchange of security-related items are honored, and in taking responsibility for monitoring compliance. Their participants are held together by perceptions of common interests.

Export controls are an essential feature of the non-proliferation system. Such controls are imperfect instruments and have many critics who see them as contrary to the goals of free trade and economic competitiveness. They cannot be relied upon to prevent especially willful and wealthy malefactors from gaining access, sooner or later, to banned items. But particularly on dual-use NBC materials and technologies, they have a number of positive functions vis-à-vis the proliferation problem. These are enumerated in Box 1.[4]

Box 1. The Functions of Export Licensing Systems on Dual-Use Materials

(1) Export control regimes help to channel trade to legitimate, peaceful activities and away from illegitimate ones.

(2) They impose delays and additional costs on detected weapon programs.

(3) They create a level playing field for industry, by establishing an agreed set of rules applied under transparent national decisions.

(4) They render patterns of trade transparent, thereby making it easier to monitor trade and identify malefactors.

(5) They insulate industry from the political and economic risks of trade in highly sensitive areas.

(6) They give industry the incentives and tools to police itself.

(7) They symbolize and give meaning to the anti-NBC norm

(8) They are a necessary part of implementing treaty commitments not to trade in sensitive materials and technologies with non-parties.

Arms control beyond the NPT also plays a role in meeting the proliferation challenge. Arms control is not a panacea. Not everyone signs up. Not everyone who signs up complies. Not all cheating is detected. Sometimes these shortcomings are indeed damning: the Biological Weapons Convention (BWC) has been sorely tainted by revelations about continued noncompliance by Iraq and Russia, among others. But the nuclear, chemical, and biological disarmament regimes have obvious, useful nonproliferation functions, as do regional measures. These functions are enumerated in Box 2.

Counterproliferation is also an essential new tool of policy, one made necessary by the fact that nonproliferation and arms control have not fully prevented proliferation. Many international observers have leapt to

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Box 2. The Functions of NBC Arms Control

(1) Arms control agreements codify patterns of restraint among states currently committed to the non-possession of certain weapons; such codes play a domestic role as well, making treaty breakout by these states politically costly and thus unlikely.

(2) They reduce the number of weapon states: the CWC and the NPT, for example, have provided a rationale for some states weakly committed to weapons programs to abandon them.

(3) They restrain the military threat of residual arsenals, by limiting their size, sophistication, and integration with other military assets; these limitations may prove critical to the ability of aggressor states to utilize their illicit weapons capabilities to good military effect.

(4) They help to depoliticize the debate about the hold-out states; when Libya or North Korea fails to sign a treaty, they self-select themselves as a target of efforts by signatory states to induce future compliance.

(5) They help to focus compliance tools, such as inspections, on potential drop-outs from the regime; this helps to deter noncompliance.

(6) They institutionalize preexisting norms against the use of these weapons and thus increase the capacity of the international community to extend those norms through concerted action; the CTBT is conspicuous as an example of a treaty that embodies a strong international prohibition against nuclear testing and that may have prolonged effect even if it never formally enters into force.

(7) The multilateral arms control regimes are tools for building political and economic coalitions against hold-outs and drop-outs; the CWC for example obligates states parties to deny certain kinds of sensitive trade to non-parties. They are tools for building military coalitions against states whose noncompliance comes to be seen as particularly egregious; the UN Security Council's military actions against Iraq since 1991 have been justified in large measure by Iraq's failure to conform to self-accepted treaty obligations. They are helpful for legitimizing the punitive military action that may be deemed necessary in extremis; without such agreements, preemptive strikes by the United States and/or others against the weapons facilities of other states look to many like a form of vigilantism.

(8) The multilateral treaty regimes are useful for tying together diverse international constituencies for common purposes; the erstwhile North, South, East, and West need opportunities to turn their sense of community into common action, or their differences seem likely to overwhelm their common interests.

(9) Particularly for the United States, multilateral arms control mechanisms are useful for providing a mode of international engagement well suited to American temper and preferences; arms control is essentially a rule-based system that seeks to promote order through the preservation of shared values and to anchor US power in defense of common interests.

(10) Arms control has proven useful for helping to manage major international transitions: the existence of the NP had much to do with achievement of the denuclearization of a number of former Soviet republics, and the treat on Conventional Forces in Europe (CFE) aided the achievement of a stable conventional balance in Europe as the Warsaw Pact collapsed.

(11) These treaty regimes help to legitimize technology export controls and to extend them to all states parties; by creating a legal obligation to prevent banned trade in sensitive materials, they save the ad hoc coordinating groups from being nothing more than supplier cartels.

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the conclusion that counterproliferation (CP) is aimed at developing counterforce attack capabilities, presumably to be employed by the United States in unilateral and punitive fashion—as its tool for policing those whom it deems rogues. This is a serious misunderstanding of counterproliferation, which is aimed at developing all of those special capabilities that will enable the US military to fight, survive, and win regional wars in which aggressors employ chemical, biological, and/or nuclear weapons. These include specific capabilities, such as active and passive defenses tailored to specific chemical, biological, or nuclear threats, as well as more general ones, such as operational adjustments, regional security strategies, and, yes, counterforce. The functions of counterproliferation are enumerated in Box 3.

Implementing the counterproliferation agenda has required a sea-change in the thinking of the US military, which has not typically seen proliferation as a problem requiring an immediate and substantial reply. This has to do with the military's faith in its ability to improvise its way around tough but unanticipated problems—and

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Box 3. The Functions of Counterproliferation

(1) CP aims to deter the use of NBC weapons by helping to neutralize their utility in attacks on US forces, or those of its friends and allies.

(2) To the extent it deters the use of NBC weapons, CP also helps to deter their acquisition—if the aren't going to be helpful in war, why acquire them in the first place, especially if acquisition makes you a target of international sanctions a possibly preemptive attack

(3) CP also helps to reassure US allies and other beneficiaries of US security guarantees, thereby providing another disincentive to proliferation.

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in its ability to dominate any process of escalation. It also reflects a certain slowness—surprising in light of the wake-up call in the Persian Gulf War—in appreciating how aggressors might utilize NBC threats to weaken the domestic political will to prosecute a conflict or to coerce US coalition partners, or how they might utilize NBC attacks to put US forces in the terrible predicament of using nuclear weapons or losing. But the sea-change is underway.

This listing of the positive functions of these various tools of policy is aimed in part at stimulating debate. We've had to learn to think more broadly and strategically about the tools of policy—is this broad enough or even, perhaps, too broad? This listing might create the impression that these tools are cure-alls. This impression would be false. None of these tools is a panacea. There are no silver bullets in the fight against proliferation. One of the purposes of enumerating the positive functions of the policy tools is in fact to illuminate the rather substantial degree to which they depend upon one another. Indeed, *a major lesson that has emerged over the last decade is that these tools of policy not only complement one another but that their integrated pursuit is essential to their combined success*. How should we think about this integration?

Counterproliferation is essential to nonproliferation. Without it, aggressive states might well be emboldened to action, testing the proposition that killing thousands or millions will be useful to their aims, including deterrence of the United States. Without CP, the United States may be left with nothing better than a nuclear reply to an act of mass-casualty aggression—or the option of

"wimping out." Either choice would be bad for future proliferation trends. CP is about finding other options. It is about making sure that regional aggressors cannot use NBC threats or attacks to break US security guarantees. It is also about having the means to ensure that the first real test of the utility of NBC weapons teaches the lessons we would desire—that such weapons cannot be used for purposes of aggression and that the use of nuclear weapons is tolerable, if ever, only in extremis for defense.

Nonproliferation and arms control are essential to counterproliferation. They are basically tools for cooperative threat management. They keep the number of states equipped with NBC weapons few, and their arsenals relatively small and poorly developed (as a result of the need to keep them underground, both figuratively and literally). CP capabilities that neutralize these threats are within reach of the United States. But if there were a collapse of these regimes and a broad diffusion of advanced NBC weaponry, the United States would have to retreat from CP to resume heavily reliance on deterrence by nuclear means. There would of course be repercussions. This is just the kind of world we want to avoid.

Arms control is essential to CP in another way. The treaty regimes reflect an agreed allocation of rights and responsibilities in association with a commonly elaborated norm. They tie American power to the defense of that norm. They help to legitimize the use of force by the United States (and others) to deal with aggressive states, by turning police actions into leadership obligations based on shared understandings. The alternative to leadership is vigilante justice, which is to say putting America outside of the norms, laws, and institutions created by the international community to deal with aggression. This is antithetical to Americans' common understanding of their nation's mission. It is also simply unworkable, in a system where other states can readily cast off US leadership by delinking their interests from Washington-based guarantees and institutions.

Arms control is also essential to nonproliferation. It helps to legitimize the export licensing systems of supplier nations, by establishing them as a normal part of treaty implementation. It codifies the common interests upon which coalitions are built to deal with particular compliance problems.

Given the rising interest in possible terrorist use of NBC weapons, there has also been a burgeoning discussion of the utility of responses to the state problem for the non-state problem. Here too some key parameters have emerged. These are enumerated in Box 4. None of this is to argue that the political, military, and economic tools developed for the proliferation problem are the first line of defense against mass-casualty terrorism. Indeed, they cannot be relied upon to deter or defeat such terrorist attacks, or to cope with the consequences. But they are complementary and that is the point here.

These then are the basic policy tools—nonproliferation, arms control, and counterproliferation, and to a growing extent counterterrorism. But there are many others that the United States can utilize on its own or with like-minded partners. These include security guarantees to allies in Europe, Asia, and the Middle East; a willingness and ability to lead international coalitions to deal with particularly egregious instabilities; foreign aid and some arms sales to insecure states; and positive and negative assurances with regard to nuclear weapons. Taken collectively, this is the kit into which the United States and its friends and allies reach when trying to cope with the proliferation challenges of both the moment and the long term.

We have also learned something about how these tools are supposed to be brought together in some coherent fashion. We used to ask: "what is the optimal balance among these tools?" We've learned the answer: "it depends." The proliferation problem has become so complex that there is no one best mix of those tools. It is useful to conceive of three categories of states to which these tools are directed in different ways.

Box 4. The Contributions of Counterproliferation, Nonproliferation, and Arms Control to the Fight Against NBC Terrorism

(1) The passive defenses, medical counters, and other protection capabilities against chemical and biological attack developed in the counterproliferation domain offer technologies, techniques, and expertise of use to those concerned with countering CBW terrorism.

(2) Improvements to the capabilities associated with discovery, targeting, and attacking production and storage facilities being developed in the counterproliferation domain ought also to have a deterrent effect on those decisionmakers considering the possible transfer of weapons of mass destruction, or other forms of assistance, to terrorists.

(3) Arms control treaties, nonproliferation agreements, and other such measures codify international norms against the use of certain special categories of weapons deemed particularly morally repugnant by peoples around the world. (They codify the norm—they do not create it.) Such norms constrain certain categories of terrorist groups from pursuing NBC capabilities.

(4) Some arms control treaties, such as the CWC, require implementing legislation by states parties, part of which criminalizes individual engagement in activities that the state has forsworn. These provide a legal basis for prosecuting individuals or groups acquiring chemical and biological weapons.

(5) Such measures oblige states parties not to assist others to acquire banned capabilities.

(6) Arms control treaties require that states parties formalize control over sensitive materials and technologies and build the mechanism to monitor and control trade in them. This helps to ensure that these materials and technologies are not readily acquired by terrorist entities.

(7) Ad hoc coordinating mechanisms such as the Australia Group and the Nuclear Suppliers Group, which help countries to fulfill their treaty obligations, are a venue for exchanging sensitive information about the mis-uses of sensitive materials and technologies.

(8) Each state's control over its NBC assets is reinforced by the necessity of being prepared to submit to international inspections.

(9) Those inspections also add a measure of transparency to national programs that is helpful in detecting or tracking down diversion to terrorist entities.

(10) The arms control regime also reinforces a web of multilateral anti-terrorism conventions that are essential to the tracking down and punishment of terrorist organizations and their members.

(11) In the biological domain, the BWC also helps provide the legal and normative basis for enhanced international efforts to monitor outbreaks of infectious disease, which will help the international community identify acts of biological terrorism and do the forensic work essential to finding the perpetrator.

One category consists of states with the ability but not the will to acquire weapons of mass destruction or to engage in arms races with neighbors. The latent capabilities of these states should be very much in the mind of the policymaker. All have unexploited NBC weapons capabilities. Among these are many "repentant proliferants" (in Sandy Spector's term) that have abandoned strategic weapons or their development programs (e.g., South Africa, Argentina, Brazil, Ukraine, Belarus, and Kazakhstan). These countries are rightly a focus of proliferation concern for a number of reasons. Only one is the ease with which disinterest might again become interest. Many receive transfers of militarily sensitive technology, and some are conduits for further trade. These states are also essential to the promulgation of international norms about weapons and war and the functioning of multilateral regimes reflecting those norms. Without their participation in the effort to combat proliferation, the response to proliferation will be limited to a few countries, mostly those of the developed world, with deleterious consequences.

A second category consists of the states committed to weapons programs. As noted earlier, this category of states is not actually growing in number. The number of nuclear weapon states has actually declined in recent years, while the number of possessors of biological weapons appears to have stabilized. The number of chemical possessors especially has begun to decline, as states such as India, South Korea, and others have declared programs under the Chemical Weapons Convention (CWC) and made plans for their destruction. Of course, the weapons capabilities of many existing proliferators are growing both quantitatively and qualitatively.

A third category consists of those states with weapons or weapon development programs but not driven by aggressive ambitions or fears of being victimized by those who are aggressive. This category includes some states with ambitious development programs as well as those that have paused at certain thresholds related to weaponization, serial production, or declaratory policy and that now face basic policy decisions about the continued evolution of national military capabilities. Think of this group as the dabblers.

For the first category of states, the weapons-disinterested ones, nonproliferation and arms control measures have primary utility, especially in blocking retrograde developments in the repentant states. For the second category, the weapons-committed ones, counterproliferation has a primary utility in deterring the use of NBC weapons where possible and punishing it where necessary. Nonproliferation and arms control may be helpful for uncovering illicit programs or isolating recalcitrant states. For the third category, the contingent proliferator, the fullest set of tools seems necessary to both dissuade and reassure.

And what about the goals of policy? What have we learned? Political measures such as arms control and disarmament aren't going to rid the world of nuclear, biological, or chemical weapons. But they can help to get some countries out of the business while also inhibiting the emergence of new possessors—and forcing most of the rest to keep their bombs in the basement, which has a desirable effect in terms of inhibiting the residual threat, both quantitatively and qualitatively. Military planners are learning to appreciate the value of these restraints. We have also learned that counterproliferation can help to reduce reliance on nuclear threats to deter attack with chemical and biological weapons, can dissuade some folks from thinking that NBC weapons are cheap and reliable counters to US military power, and can reassure US allies about the viability of US security guarantees. But counterproliferation cannot eliminate all of the vulnerabilities to US forces, allies, and interests posed by NBC proliferation. My own best guess is that a reasonable goal for the next decade or two is a pattern of proliferation not substantially different from the pattern of the last decade or two—some ebb, some flow, but no wholesale change and no deep unsettling of a world in which regional conflicts appear for the moment ascendant over major power conflicts.

In short, our understanding of the means and ends of policy has shifted a great deal over the last decade. But we still call it nonproliferation, or if you are in the US defense community, threat reduction. Because names matter in American politics, a new and better name for overall strategy is needed. I have elsewhere proposed antiproliferation, as a notion that captures the spirit of opposition while encompassing a growing array of policy tools.[5]

THE DOMESTIC POLITICS OF STRATEGY

The last decade has also raised a question about whether the political basis exists in Washington to pur-

The article builds on academic literature, open-source research, media reports and social media posts. While inherently biased, Ukrainian and Russian social media posts have provided a wealth of primary and secondary sources for this research. These range from first-hand accounts from soldiers on the frontline to analyses and commentaries from observers on both sides of the conflict. While most of these posts are Ukrainian in origin, Russian sources have been incorporated for balance. Where necessary, these have been cross-referenced with other sources to ensure reliability. The study has involved a systemic and critical evaluation of several thousand social media posts and videos.

Consequently, by having a holistic approach to the phenomenon's three core variables, this article provides a detailed description of its dynamics by describing each variable's progression and causal interrelation, before providing an overall analysis of its combined effects and implications.

Weaponisation of Social Media

Information warfare is the use of information or disinformation to manipulate perceptions and influence opinions, and it is not new. However, what is new is the gravitational shift towards social media platforms as preferred battlegrounds for such campaigns, to the point where commentators describe the war as 'the first social media war'.[21] This description reflects the extent to which both sides of the war have systematically employed social media platforms as important instruments in their persistent information warfare campaigns. Ukrainian and Russian authorities have considerable official and unofficial presence across various mainstream social media platforms, such as X (formerly known as Twitter), Facebook, Instagram, Telegram and TikTok. However, these platforms are also the domain of an extensive ecosystem of non-government individuals reporting on military affairs, known as 'mil-bloggers', and, notably, frontline combat units. Although not necessarily integral to

government information operations, their messaging feeds into the same information streams. Although biased, these government, non-government and military entities on social media produce continuous and virtually endless streams of information, disinformation and diametrically opposed national narratives about the war.[22]

> What is new is the gravitational shift towards social media platforms as preferred battlegrounds for such campaigns

Regardless of the narratives, mil-bloggers have emerged in the social media landscape early in the war for different reasons. On the Ukrainian side, the emergence of many mil-bloggers was perhaps more out of necessity than by design in the early days of the invasion. These individuals took on the role of informal war reporters, providing near real-time information in an information space otherwise characterised by confused and conflicting reporting on the progress of the Russian invasion. On the Russian side, mil-bloggers emerged later in what appear to be measured efforts to offer alternatives to Russia's tightly controlled media, infamous for their overly optimistic reporting and disregard for failures and setbacks.[23] These Ukrainian and Russian mil-bloggers have since evolved into sophisticated content creators, exerting considerable influence on both sides of the conflict by shaping the perceptions of millions of viewers.

Examples of prominent YouTube mil-blogger channels by non-government Ukrainian civilians are 'Update from Ukraine' and 'Reporting from Ukraine'. Drawing from various government and non-government sources on both sides of the conflict, these bloggers provide daily updates on the military situation for English-speaking audiences. The first example has about 805,000 subscribers and 483 million views in total, with 881 videos to

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21. Dan Ciuriak, 'Social Media Warfare is Being Invented in Ukraine', Centre for International Governance Innovation, 15 June 2022, <https://www.cigionline.org/articles/social-media-warfare-is-being-invented-in-ukraine/>, accessed 30 August 2023; Christian Perez and Anjana Nair, 'Information Warfare in Russia's War in Ukraine', *Foreign Policy*, 22 August 2022, <https://foreignpolicy.com/2022/08/22/information-warfare-in-russias-war-in-ukraine/>, accessed 28 August 2023.

22. OECD, 'Disinformation and Russia's War of Aggression Against Ukraine', 3 November 2022, <https://www.oecd.org/ukraine-hub/policy-responses/disinformation-and-russia-s-war-of-aggression-against-ukraine-37186bde/>, accessed 30 August 2023.

23. Sam Farbman, 'Telegram, "Milbloggers" and the Russian State', *Survival* (Vol. 65, Issue 3, June 2023), pp. 107–28.

date.[24] The latter has about 477,000 subscribers and 232 million views in total, with 694 videos to date.[25] Furthermore, this channel has sub-channels in 26 different languages providing translated versions, drawing an additional 470,000 subscribers with an additional 200 million views.[26] In addition, other Ukrainian social media contributors, such as 'Insights from Ukraine and Russia', publish translated phone intercepts supposedly released by the Ukrainian intelligence service, the SBU.[27] In the alleged intercepts, Russian soldiers share anything from their grievances with the Russian military to plans for escaping military service, or even admitting to war crimes.[28] The channel has accumulated more than 200,000 subscribers and 56 million views, regardless of the integrity and authenticity of the audio recordings being hard to ascertain. These three examples of social media channels demonstrate the immense reach that a few non-government civilians can achieve, by accumulating, in total, nearly two million subscribers and one billion views from subscribers and non-subscribers. Yet, it remains an open question if these and other pro-Ukrainian mil-bloggers and social media content creators operate under centralised guidance from Ukrainian authorities or if they function as fully autonomous and decentralised entities.

Due to the heavy censorship imposed on an already tightly controlled Russian media space, Russian mil-bloggers (the 'Z-channels') have experienced notably greater constraints than their Ukrainian and international counterparts.[29] Another factor constraining their influence is that Russians predominantly turn to television for information; however, with 40% of Russians also sourcing their news and information from social media, there is potential for significant reach.[30] The two most prominent Russian mil-bloggers, 'Rybar' and 'WarGonzo', each have about one million subscribers on Telegram.[31] Russian mil-bloggers initially served in the precarious role of whistleblowers, shedding light on Russian military underperformance, before being outflanked by Vladimir Putin, who co-opted several notable mil-bloggers to join an 'information operations task force', apparently to 'force the system to self-correct' by exposing military underperformance and to thereby 'insulate Putin from blame'.[32] Another remarkable trend within the Russian information space involves Russian soldiers and units using social media platforms not to promote the war but to share videos or open letters detailing their collective complaints. This behaviour, often attributed to perceived neglect by their superiors, bypasses the traditional military chain of command by directly addressing the Kremlin or their regional governors, generating negative publicity that compels political attention.[33]

In the case of combat units active on social media, the quality of videos uploaded ranges from dynamic, near real-time, unedited videos hastily recorded and uploaded by individual soldiers, to sophisticated, well-edited productions combining ground and aerial perspectives of combat operations. The latter is attributed to military units that are likely to operate under centralised guidance with dedicated media support, attracting a broad viewership base and crowdfunding sponsors (discussed in the next section). A prime example of a military unit engaged in both combat and information warfare is the Ukrainian K2 battalion of the 54th Separate Mechanized Brigade (54 OMBr), which maintains an active presence across several social media platforms: Telegram (144,000 subscribers); YouTube (626,000 subscribers and 254 million views); and

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24. Denys Davydov, 'Videos', YouTube channel, <https://www.youtube.com/@DenysDavydov/videos>, accessed 16 March 2024.

25. Reporting from Ukraine, 'Videos', YouTube channel, <https://www.youtube.com/@RFU/videos>, accessed 16 March 2024.

26. *Ibid*.

27. Insights from Ukraine and Russia, 'Videos', YouTube channel, <https://www.youtube.com/@insightsfromukraineandrussia/videos>, accessed 28 January 2024.

28. *Ibid.*

29. Natasha Groom, 'Heroes of the Information Front? Reviewing Russia's Military Bloggers', NATO's Russian Studies Series 01/2023, NATO, 14 March 2023, <https://www.ndc.nato.int/research/research.php?icode=794>, accessed 16 August 2023.

30. Statista, 'Social Media in Russia – Statistics & Facts', <https://www.statista.com/topics/6281/social-media-in-russia/#topicOverview>, accessed 28 August 2023.

31. Mikhail Zvinchuk, 'Rybar', Telegram channel, <https://t.me/rybar>, accessed 28 January 2024; Semyon Pegov, 'WarGonzo', Telegram channel, <https://t.me/wargonzo>, accessed 28 January 2024.

32. Groom, 'Heroes of the Information Front?'.

33. Supernova+, 'Myahon'kiye mal'chiki, vse chto ostalos'... otkazyvayutsya vypolnyat' boyevyye zadachi...' ['Soft boys, all that's left... refuse to carry out combat tasks...'], Telegram post, 29 June 2023, <https://t.me/supernova_plus/21661>, accessed 16 August 2023.

Facebook (49,000 followers).[34] The K2 battalion regularly uploads high-resolution, well-produced drone combat footage, capturing the intensity of ground combat and drone strikes. These videos resemble mini-TV series, chronicling the unit's operations.[35]

Regardless of the motive for doing so, there is an emerging trend where combatants venture into the social media sphere and civilians venture into the realm of information operations. This also blurs the divide between government and non-government, and military and civilian activities. In the case of Ukraine, the combined government and non-government information campaign reflects an understanding that its military depends on Western aid to continue the fight. Although unquantifiable, the Ukrainian information campaign broadcasting how it has turned the war around from preventing state collapse to fighting for peace on favourable terms, is likely to have positively shaped perceptions internationally, reducing political controversy related to continued international support and arms shipments to Ukraine. The essence – and paradox – is captured by Vlad Vexler, a Russian philosopher and anti-war advocate based in the UK:

> Ukraine fights, and we pay with cash, supplies, and support, and very hesitantly, weapons ... But it is more complex than that because we live in democracies, and inevitably, to get Western electorates to keep supporting Ukraine, Western leaders need to keep showing successes on the battlefield. "This is what we paid for, and this is what we got". And that is the bizarre logic we are stuck in; the more Ukraine succeeds, the more we'll be prepared to support her, the more we'll be prepared to pay. Which means that what happens on the battlefield shapes our strategy, instead of our strategy shaping what happens on the battlefield.[36]

Consequently, the war is not confined to the physical domains, as it has long since migrated to become deeply embedded in the cognitive domain, partly through the weaponisation of social media and mobilisation of mil-bloggers in distributed and partially decentralised information warfare campaigns.

Crowdfunding and Weaponisation of Commercially Available Products

NATO and Western governments have donated an estimated €252-billion worth of aid to Ukraine between 24 January 2022 and 15 January 2024, effectively serving as Kyiv's financial and material main artery.[37] However, the vast donations from private sector corporations, organisations and individuals have emerged to function as its innumerable capillaries. Epic Games, Amazon, Microsoft and around 500 other companies and organisations have led the way in this effort, donating or pledging more than $1.8-billion worth of aid, not counting individual donations.[38]

Individuals have also made significant contributions, exemplified by Ukrainian and international supporters accumulating $415 million in donations to Ukraine's central bank in the war's first month alone.[39] Yet, many contributions take a different route, sidestepping centralised systems, such as Ukraine's official fundraising platform, United24 (which had gathered some $600 million by February 2024), by proceeding directly to the intended end-users.[40] This approach complicates efforts to quantify the magnitude of crowd-generated aid entering the Ukrainian war economy, as these contributions remain largely untraceable. However, a recent report indicates that almost 80% of adult Ukrainians have donated to the war effort.[41] While crowdfunding is not a new concept, the scale and scope of this primarily digitally enabled peer-to-peer

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34. K2 Battalion of the 54 OMBr, Telegram channel, <https://t.me/k_2_54>, accessed 28 January 2024; Combat Group K-2 54th Brigade, 'Home', YouTube channel, <https://www.youtube.com/@k2_bat>, accessed 16 March 2024; K2 54 OMBr, 'Posts', Facebook, <https://www.facebook.com/K2.54OMBr/>, accessed 16 March 2024.

35. *Ibid.*

36. Vlad Vexler, 'Survival vs Victory: The West's Real Goals for Ukraine', YouTube video, 8 June 2023, 00:05:20–00:06:20, <https://www.youtube.com/watch?v=JP1Btokmws0>, accessed 13 August 2023.

37. Kiel Institute for the World Economy, 'Ukraine Support Tracker', <https://www.ifw-kiel.de/topics/war-against-ukraine/ukraine-support-tracker/>, accessed 16 March 2024.

38. OCHA and Connecting Business Initiative, 'Ukraine Private Sector Donations Tracker', <https://data.humdata.org/viz-ukraine-ps-tracker/#>, accessed 28 January 2024.

39. Georgi Kantchev, 'Ukraine Crowdfunding Effort for the Army Raises $400 Million', *Wall Street Journal*, 17 March 2022.

40. United24, 'Official Fundraising Platform of Ukraine', <https://u24.gov.ua/>, accessed 18 August 2023.

41. Nadiia Novosolova and Marian Machlouzarides, 'SHARP Wave 2 Big Picture Report', 2023, pp. 26–27, <https://api.scoreforpeace.org/storage/pdfs/REP_PFRUkr21_SHARP-Big-picture-report_v11.pdf>, accessed 16 March 2024.

crowdfunding is likely without previous parallels, supercharging it into a financial weapon of war.[42]

Digital crowdfunding – while user-friendly to the point of 'one-click donations' on many websites – is a multifaceted and complex mechanism closely linked with the influence and connectivity enabled by the previously described social media platforms, but also with advancements in payment technologies.[43] Those in need of financial or material support – be it individuals, organisations, or military units – frequently broadcast their requirements on social media, including directions for supplying materiel or how to contribute financially through online banks (for example Ukraine's Monobank), digital payment platforms (such as Patreon, PayPal, GoFundMe, Donatello, Buy Me A Coffee, YouTube Sponsor), or cryptocurrency options (Bitcoin, Ethereum and USDT).[44]

The crowdfunded equipment is often commercial off-the-shelf products with potential for dual use, which are easily weaponised to meet military requirements. Among the most prolific examples are large-scale acquisitions and weaponisation of commercial drones. These fixed- and rotary-wing drones are adapted for military use in various ways, either serving as almost unmodified real-time observation platforms or being modified to carry ordnance, as described in the next section.[45] These drones are primarily of the quadcopter or octocopter configuration, and among the more expensive and prevalent ones are the Mavic 3 quadcopters or similar, and the large octocopter 'bombers' of various brands. A Mavic 3 quadcopter costs about $2,200, while larger octocopters cost from $20,000–50,000.[46] This trend has also spurred decentralised arms production, where drones are locally assembled from parts or weaponised with 3D-printed essential components such as release mechanisms and fin stabilisers for a wide array of explosive munitions.[47] Another significant development is the transformation of thousands of drones into weapons, as seen with the 'first-person view' (FPV) explosives-carrying racing drones, which constitute the bulk of the drones currently in use. These are weaponised into single-use kamikaze drones, known in Western military circles as 'loitering munitions', and are significantly less expensive, with a unit price of between $350–1,000 for the most prevalent models.[48]

Many of the mil-bloggers described in the previous section sustain their work through donations, but also serve as intermediaries in fundraisers supporting the war effort. There are several examples of individuals organising large fundraisers, and in one instance, Serhii Sternenko, a prominent Ukrainian mil-blogger with 721,000 subscribers on Telegram, claimed to have coordinated the collection of around $28 million from 1 April 2022 to 31 December 2023. This supposedly secured the acquisition of more than 28,363 FPV drones, 1,367 other UAVs, 121 thermal imagers, 115 night vision devices, 265 vehicles, 65 Starlink terminals, 107

42. Méheut and Mitiuk, 'Crowdfunding, Auctions and Raffles: How Ukrainians Are Aiding the Army'.

43. Ye et al., 'Online Networks of Support in Distressed Environments', pp. 4–8.

44. Ukrainian 108th Separate Mountain Assault Battalion, 'Privit Druzi! Hotuyemo novu partiyou droni-kamikadze v nashiy laboratoriyi. Chastyna ptashok prydibanykh za Vashi donaty vzhe na pozitsiyakh. Dyakuyemo kozhnomu z Vas khto doluchyvsya do nashoho zboru. Vid tykh z Vas, khto proplatyv vartist drona, bude peredano personal'nyy podarunok z pidpysom dlya okupantiv. Razom do Peremohy!' ['Hello Friends! We are preparing a new batch of kamikaze drones in our laboratory. Some of the birds purchased with your donations are already in position. Thank you to each of you who has contributed to our collection. For those of you who have paid for the drone, a personalized gift with a signature for the occupiers will be delivered. Together to Victory!'], Telegram post, 28 June 2023, <https://t.me/OGHB_108/177>, accessed 16 March 2024; Ukrainian 108th Separate Mountain Assault Battalion, 'Privit Druzi! Publikuyemo pidbirku roboty, prydbanykh za Vashi koshty, droniv-kamikadze po pozitsiyakh pidoriv ta yikhniy tekhnitsi' ['Hi friends! We publish a selection of work, purchased with your funds, kamikaze drones used against to the positions of the podors and their equipment.'], Telegram post, 8 July 2023, <https://t.me/OGHB_108/179>, accessed 16 March 2024.

45. Ukrainian 108th Separate Mountain Assault Battalion, 'Privit Druzi! Syuzhet ICTV pro nash batalyon' ['Hello Friends! A story by ICTV about our battalion'], Telegram post, video, 00:04:10–00:05:12, 10 April 2023, <https://t.me/OGHB_108/138>, accessed 29 August 2023.

46. DJI Store, 'DJI Mavic 3 Pro', <https://store.dji.com/no/product/dji-mavic-3>, accessed 31 August 2023; Stefan Korshak, 'Ukrainian Drone Swarms Controlled by "Baba Yaga" Robot Aircraft, Russian Sources Claim', 29 February 2024, <https://www.kyivpost.com/post/28771>, accessed 17 March 2024.

47. Ukrainian 108th Separate Mountain Assault Battalion, 'Privit Druzi! Syuzhet ICTV pro nash batalyon' ['Hello Friends! A story by ICTV about our battalion'].

48. One Way Aerospace, 'AQV 100 Scalpel', <https://onewayaerospace.com/vertical-series/aqv-100-scalpel/>, accessed 31 August 2023.

generators, and an uncrewed surface vessel.[49] In an update on 14 March 2024, Sternenko claimed his crowdfunding campaign had resulted in a total delivery of 43,670 FPV drones.[50] In another case, Serhiy Prytula, a Ukrainian celebrity and influencer, organised the crowdfunding of $142 million, of which $9.6 million was used for the acquisition of 142 long- and short-range kamikaze drones, some of which may have been involved in attacking Moscow.[51] This demonstrates that individual intermediaries are organising large fundraising campaigns that are likely to significantly impact the beneficiaries' specific areas of engagement on the frontline.

This crowdfunding and weaponisation process is not limited to civilians, as military units active in social media also routinely launch fundraisers for a wide range of essential equipment. Units like the Ukrainian 108th Separate Mountain Assault Battalion exemplify this by routinely organising social media fundraisers for dual-use equipment like FPV drones. Following their acquisition and weaponisation, they post videos showcasing the drones' deadly efficiency. This likely serves many purposes, such as proving that the funds are being put to 'good' use while also adding to the overall information campaign, but more importantly, attracting more online followers and thereby potentially more donations, creating a continuous cycle of support.[52]

The effectiveness of commercially available drones is also not lost on Ukraine's higher levels, as the process of crowdfunding and weaponising commercially available drones for the donation to Ukraine's forces is also actively encouraged by Ukrainian government officials.[53] Fundraising initiatives like Ukraine's 'Army of Drones', coordinated via United24, has received more than $108 million in donations to procure drones and to train pilots, and in 'dronations' – the donation of drones.[54] The transformative role of drones on the battlefield has also led to several government initiatives to capitalise on their effectiveness by industrialising Ukrainian drone production. Companies such as One Way Aerospace – with their slogan: 'strategic warfare, democratised' – and more than 80 other businesses have developed and fielded drones in the spectrum from quadcopters in the observation and attack role, to long-range fixed-wing drones capable of carrying a 200-kg payload over 1,200 km.[55]

Although drones may have received the most publicity in the media and in this article, these are systems within a larger system reliant on effective communication. Ukrainian forces have proven highly adaptable in introducing and employing a wide range of communications technology to aid the war effort. As one of several means of communication, Ukraine has received about 20,000 Starlink terminals from the Starlink company and government sources, providing persistent internet connection, although fraught with controversy due to its dual usage. Smartphones are being used for encrypted communication or with geo-apps such as Map Measure and others, enabling rapid targeting by 'dropping pins' on Russian positions, increasing the lethality of artillery.[56] Furthermore, Ukraine's proprietary Delta software provides military units with a shared situational awareness via computers and smartphones.[57] This system also allows for

49. Sternenko, '1.1 Milliarda Hryven' ['1.1 Billion Hryvnia'].

50. Serhii Sternenko, '+230 droniv vid vas za s'ohodni. Dyakuyu!' ['+230 drones from you today. Thank you!'], Telegram post, 14 March 2024, <https://t.me/ssternenko/26293>, accessed 16 March 2024.

51. *France 24*, 'From Ukrainians Without Love: Drone Fundraiser Taunts Moscow', 7 August 2023, <https://www.france24.com/en/live-news/20230807-from-ukrainians-without-love-drone-fundraiser-taunts-moscow>, accessed 21 September 2023.

52. Ukrainian 108th Separate Mountain Assault Battalion, 'Publikuyemo pidbirku roboty, prydbanykh za Vashi koshty, droniv-kamikadze po pozitsiyakh pidoriv ta yikhniy tekhniky' ['We are publishing a collection of work, purchased with your funds, kamikaze drones targeting the positions of the bastards and their equipment'], Telegram post, 8 July 2023, <https://t.me/OGHB_108/179>, accessed 17 August 2023.

53. Greg Myre, 'How Ukraine Created an "Army of Drones" to take on Russia', *NPR*, 20 June 2023, <https://www.npr.org/2023/06/20/1183050117/how-ukraine-created-an-army-of-drones-to-take-on-russia>, accessed 21 September 2023.

54. United24, 'These Are the Drones You're Looking For: Join Mark Hamill and the Army of Drones', <https://u24.gov.ua/dronation>, accessed 30 August 2023; Joe Tidy, 'Ukraine Rapidly Expanding its "Army of Drones" for Front Line', *BBC News*, 26 April 2023.

55. Max Hunder, 'Insight: Inside Ukraine's Scramble for "Game-changer" Drone Fleet', *Reuters*, 24 March 2023.

56. Kyle Mizokami, 'Ukraine Volunteer Transcripts', 21 August 2023, <https://ukrainevolunteer297689472.wordpress.com/2023/08/21/in-moments-of-weakness-you-tell-them-stuff-you-would-never-tell-anyone-else/>, accessed 28 August 2023.

57. Militarnyi, 'Ukraine Unveiled Its Own Delta Situational Awareness System', 27 October 2022, <https://mil.in.ua/en/news/ukraine-unveiled-its-own-delta-situational-awareness-system/>, accessed 29 August 2023.

inputs from non-combatants, meaning civilians may report sightings of enemy forces through chatbots in apps like eVorog (which translates as eEnemy), thereby also crowdsourcing intelligence.[58] Other examples of crowdsourcing intelligence include the use of openly available digital maps, such as DeepStateMap, and several user-generated Google Maps layovers showing regularly updated force dispositions.[59] Artificial intelligence has also emerged as a powerful tool in various areas, from identifying enemy fortifications based on digital imagery from drones and satellites to providing warnings of nearby Russian drones based on their signal emittance.[60]

Consequently, it may be posited that Ukraine and its supporters have successfully utilised the global information and communication infrastructure to gather support across the spectrum from moral support to financial and material assistance. Social media and online payment solutions enable substantial fundraising campaigns, which are then converted into the necessary equipment to help drive the war effort.

Proliferation and Use of Weaponised Commercial Drones

At the beginning of the war, Ukraine's handful of fixed-wing medium-altitude long-endurance (MALE) UAVs, such as the Turkish-made Bayraktar TB2, dominated the drone part of its information campaign.[61] However, they gradually disappeared from view (apart from over the Black Sea) after likely being downed by Russia's sophisticated array of advanced surface-to-air missile systems and electronic warfare (EW) systems.[62] Operating in such non-permissive environments, large military drones have a short lifespan – which is

unsustainable when considering their unit cost and extended delivery time – and likely explains the shift towards commercially available quantity over quality. Although both sides have actively employed such expendable dual-use COTS UAVs throughout the 2014–22 war in Donbas, their true breakthrough came after the 2022 invasion.[63] Consequently, these drones have become essential for tactical and unit-level airborne intelligence, surveillance and reconnaissance collection while offering a cost-effective precision-guided munitions capability.

While obtaining reliable data on the current extent of drone usage in the Ukraine war is complicated, insights into the scale of their proliferation can be inferred from reports detailing their losses. According to Jack Watling and Nick Reynolds, the 'Ukrainian loss rate in UAVs [was] approximately 10,000 per month', as early as May 2023.[64] The same report states that 'between 25 and 50 UAVs from both sides are operating over the contested area between the forward line of own troops and the forward line of enemy troops at any given time for each 10 km of frontage'.[65] Given that the frontline is about 1,000-km long, this could translate to anywhere between 2,500–5,000 drones in active use on a daily basis.

Furthermore, the Project Owl OSINT (open-source intelligence) layover in Google Maps details the approximate location of 40 dedicated Ukrainian drone units while showing only four Russian.[66] However, instead of signifying a vast disparity in Ukraine's favour, this is likely a result of a lack of fidelity on Russian force compositions, as Russia is rapidly catching up in the drone war, to the point where drones are reported to collide both intentionally and by accident over the frontlines.[67] An essential difference in the drone war is that while Russia buys FPV drones by the hundreds and trains

58. *Ibid.*

59. DeepStateMap, <https://deepstatemap.live/>, accessed 29 August 2023; Project Owl OSINT, 'Ukraine Control Map', <https://www.google.com/maps/d/viewer?&mid=180u1IkUjtjpdJWnIC0AxTKSiqK4G6Pez&ll>, accessed 29 August 2023.

60. Kyle Mizokami, 'Ukraine Volunteer Transcripts', 2 July 2023, <https://ukrainevolunteer297689472.wordpress.com/2023/07/02/untreated-mortality-is-around-90-somewhat-short-of-c-s-standards/>, accessed 28 August 2023.

61. Stijn Mitzer et al., 'A Monument of Victory: The Bayraktar TB2 Kill List', Oryx, 23 February 2022, <https://www.oryxspioenkop.com/2021/12/a-monument-of-victory-bayraktar-tb2.html>, accessed 16 March 2024.

62. Jakub Janovsky et al., 'List of Aircraft Losses During the Russian Invasion of Ukraine', Oryx, 20 March 2022, <https://www.oryxspioenkop.com/2022/03/list-of-aircraft-losses-during-2022.html>, accessed 1 September 2023.

63. Patrick Tucker, 'Ukraine's Drone Warriors', *Atlantic Council*, 10 March 2015, <https://www.atlanticcouncil.org/blogs/natosource/ukraine-s-drone-warriors/>, accessed 2 September 2023.

64. Watling and Reynolds, 'Meatgrinder', p. 18.

65. *Ibid.*, p. 7.

66. Project Owl OSINT, 'Ukraine Control Map'.

67. David Axe, 'There are so Many Explosives-laden Drones Flying over Southern Ukraine That They're Running into Each Other', *Forbes*, 28 August 2023.

its soldiers to fly them, Ukraine largely relies on donations and volunteers to operate them.[68] This may potentially lead to a future drone disparity in Russia's favour.

Russia may not yet have drone superiority, but it is superior in EW systems.[69] These systems suppress or turn off drones by severing their communications link and jamming their GPS receivers. According to Zabrodskyi et al., 'the average life expectancy of a quadcopter was around three flights, while that of fixed-wing UAVs was around six flights' in heavily EW-influenced areas in Donbas in 2022, and that 'in aggregate, only around a third of UAV missions can be said to have been successful'.[70] Such attrition has led to an evolving action and reaction cycle where every countermeasure is met with another counter to maintain the utility of the drones.[71] Despite operating in challenging and non-permissive airspace, their persistent use indicates that the loss rate is manageable and the benefits significantly outweigh the risks.

The drones serve three distinct yet interconnected mission sets. These are observation, interdiction and precision strike. In the observation role, drones – usually quadcopters – provide enhanced situational awareness for nearby units while functioning as forward observers for ground-based fires platforms such as mortars, tube artillery and rocket artillery. Whether used to control precision-guided ordnance or not, drones increase the accuracy of such fires platforms by providing near real-time target acquisition and fires direction. These drones may also detect mines when equipped with thermal imaging sensors. Notably, drones deployed in this role often require no additional weaponisation other than a software change to stop the drones from broadcasting their position on the internet and make them more resistant to

EW interference, depending on the type of drone.[72] According to Ukrainian drone operators, if the EW conditions are manageable, an observation drone's average sortie is about 5–6 km when operating as a forward observer for mortars and up to 15 km for artillery. When a target is located, it is reported to the nearest fire-control unit for prioritisation and engagement. Of note, drone operators have emphasised how the integration of Starlink significantly expedited the entire fires process.[73]

Several observation drones are also modified to fulfil a secondary role of interdicting their self-acquired targets, doubling as bombers. These drones are converted to carry releasable ordnance typically used by infantry, such as fragmentation and thermobaric grenades, automatic grenade launcher rounds and incendiary devices, on sorties up to 10 km.[74] Other drones are purpose-built to serve as dedicated bombers and are usually octocopters. These carry up to eight independently releasable pieces of the previously described ordnance, or fewer, heavier ordnance, such as anti-tank rocket warheads, mortar rounds or even anti-tank mines.[75]

The precision strike mission set uses FPV drones, built from commercial racing drones and mostly weaponised with the same ordnance as the observation drones. However, these are configured to hold on to their ordnance as the drone dives into the target. These drones will either be launched on independent missions or will wait until dedicated observation drones identify a target. The observation drone operator may then guide the FPV drone operator on to the target while providing post-strike battle-damage assessment to evaluate if the target needs to be re-engaged.[76] The number of FPV drones has grown steadily since September 2022. In May 2023, Russian mil-bloggers claimed that Ukraine had 'bought up almost the entire market'

68. *Ibid.*
69. Watling and Reynolds, 'Meatgrinder', pp. 18–19.
70. Zabrodskyi et al., 'Preliminary Lessons in Conventional Warfighting', pp. 37–38.
71. David Hambling, 'How Have Ukrainian Drones Beaten Russian Jammers – And Will It Last?', *Forbes*, 9 August 2023.
72. Sam Skove, 'How Ukraine Learned to Cloak Its Drones from Russian Surveillance', C4ISRNET, 17 October 2022, <https://www.c4isrnet.com/battlefield-tech/2022/10/17/how-ukraine-learned-to-cloak-its-drones-from-russian-surveillance/>, accessed 6 September 2023.
73. Telebachennia Toronto, 'Poriatunok Pilotiv-Shturmovikiv, Znyshchennia Tekhniky, Polyoty Nad Donets'kom: Shcho Mozhe Aerorozvidnyk' ['Rescue of Attack Pilots, Destruction of Equipment, Flights over Donetsk: What Can an Aerial Scout Do'], YouTube video, 15 May 2023, <https://www.youtube.com/watch?v=T0rl1Lv897g>, accessed 1 September 2023.
74. *Ibid*.
75. Sebastien Roblin, 'Drone War Accelerates over Ukraine', Inside Unmanned Systems, 14 November 2022, <https://insideunmannedsystems.com/drone-war-accelerates-over-ukraine/>, accessed 3 September 2023.
76. Realna Viyna 18+ [Real War 18+], 'Do neproshenykh hostey zalitayut' drony-kamikadze Eskadronu' ['The Squadron's kamikaze drones are deployed against unwanted guests'], Telegram post, 20 May 2023, <https://t.me/voynareal_ua/23585>, accessed 3 September 2023.

of 50,000 to 100,000 FPV drones.[77] By February 2024, it is reported that Ukraine's domestic drone industry alone builds 50,000 FPV drones a month.[78] Furthermore, Volodymyr Zelensky has announced that the Ukrainian government will take on a greater role in financing and producing drones, with ambitions to increase domestic drone production to one million in 2024.[79]

Another trend in drone warfare is to have the drones named after who financed them, with the name or callsign of the donor visible as on-screen text in the drone's live feed as it races towards its target. Alternatively, if not on-screen, the donors' names or their personal messages to the occupants may be written on the drone's onboard ordnance.[80] 'T90 go BOOM', 'Love from Odessa', 'For Katyn [forest massacre] 1940', and 'From Riga with Love' are characteristic of such personal, yet lethal, farewell messages from sponsors. Initiatives like SignMyRocket.com is representative of this development, offering a user-friendly interface through which to 'send your message to the Russian invaders'.[81] The site claims to have received $1.7 million in donations and to have delivered thousands of signed pieces of explosive ordnance to the enemy. Among others, the site offers video evidence that 'your signed VOG [30-mm grenade] will injure a soldier'.[82]

From a financial perspective, the Ukrainian drones are considerably more affordable than their Western military-grade equivalents. The US-supplied Switchblade 300 loitering munition system costs about $50,000–60,000, while its Ukrainian FPV equivalent typically costs about $350–1,000.[83] This means that 50–170 FPV drones can be locally produced or imported to Ukraine for the cost of one Switchblade system. Given their precision guidance, it also means that the FPV drones are 'cheaper than a mortar round and more accurate than artillery fire'.[84]

The human and material cost that Ukrainian drones have inflicted on the enemy is not so easily calculated. However, the renowned Ukrainian news and analysis portal 'Slovo i Dilo' released a comprehensive analysis in November 2023, detailing the impact of drones on warfare from Ukraine's counteroffensive from June to October 2023.[85] This analysis, purportedly based on data from the Army of Drones project, which has been made public by the Armed Forces of Ukraine (Zbroyni Syly Ukrayiny – ZSU), sheds light on significant losses incurred by the Russian forces. According to the report, drones have been responsible for a considerable number of Russian losses across various categories of military equipment and infrastructure. These losses allegedly include 627 tanks, 869 armoured vehicles, 29 rocket artillery systems, 234 self-propelled artillery guns, 694 artillery pieces, 66 mortars and machine guns, 859 trucks and special transport vehicles, 24 anti-aircraft systems, 134 communication and electronic warfare systems, 1,312 supply points, 105 ammunition and fuel depots, and 1,678 personnel.[86] While these figures have not been independently verified as part of the research, they appear consistent with ZSU's regular updates on losses inflicted by Ukraine's Army of Drones. It is also likely that the large volume of drones on the frontlines are forcing

77. Russkiy Inzhener [Russian Engineer], 'Ataka roya dronov. Trevozhnyye novosti postupayut ot moikh istochnikov. Nedavno Arestovich bakhvalilsya, mol pered nastupom VSU, poletit prosto ogromnoye kolichestvo dronov, i russkaya armiya budet razbita' ['Attack of a swarm of drones. Alarming news is coming from my sources. Recently, Arestovich boasted that before the Ukrainian armed forces' offensive, a huge number of drones will fly, and the Russian army will be defeated...'], Telegram post, 22 March 2023, <https://t.me/rusengineer/612>, accessed 2 September 2023.
78. David Axe, 'As the Ukrainians Fling 50,000 Drones a Month, the Russians Can't Get Their Drone-Jammers to Work', *Forbes*, 16 February 2024.
79. *Reuters*, 'Ukraine to Produce One Million Drones Next Year, Zelenskiy Says', 19 December 2023.
80. David Hambling, 'The Key is Pilots, Not Drones: Ukraine's Escadrone on the Skill of Flying FPV Kamikazes', *Forbes*, 5 May 2023.
81. SignMyRocket.com, 'Artillery Mailing', <https://signmyrocket.com/>, accessed 4 February 2024.
82. SignMyRocket.com, 'Dropping a Signed VOG 17', <https://signmyrocket.com/>, accessed 14 March 2024.
83. US Department of Defense, 'Fiscal Year (FY) 2024 Budget Estimates', March 2023, <https://www.asafm.army.mil/Portals/72/Documents/BudgetMaterial/2024/Base%20Budget/Procurement/Missile%20Procurement%20Army.pdf>, accessed 2 September 2023; Hambling, 'The Key Is Pilots, Not Drones'.
84. David Hambling, 'Could Small Drones Really Replace Artillery?', *Forbes*, 16 August 2023.
85. Slovo i Dilo, '"Armiya droniv": skil'ky okupantiv ta tekhniky vdalosya znyshchity z pochatku kontrnastupu' ['"Army of Drones": How Many Occupiers and Equipment Have Been Destroyed Since the Beginning of the Counteroffensive'], 10 November 2023, <https://www.slovoidilo.ua/2023/11/10/infografika/bezpeka/armiya-droniv-skilky-okupantiv-ta-texniky-vdalosya-znyshhyty-pochatku-kontrnastupu>, accessed 16 March 2024.
86. *Ibid*.

changes in battlefield tactics and strategies. Troop concentrations are vulnerable to detection and engagement by drones, as well as artillery, meaning that massing forces for conventional manoeuvre warfare aimed at creating tactical- and operational-level breakthroughs becomes increasingly risky and resource intensive.

The effectiveness of commercial drones in the war is further displayed on social media, as there are thousands of videos of their use readily available on the internet. Ukrainian Telegram channels like 'Realna Viyna 18+' ['Real War 18+'] and 'Supernova+' hold more than 24,000 and 14,000 war-related videos respectively.[87] Although there is a significant overlap in content between these two channels, most of these videos show Ukrainian forces engaging Russian occupiers. Within these combat videos, there is a massive influx of videos of engagements enabled by drones in the observer role, or videos of drones engaging the enemy. Drone combat has become so widespread that it is common to observe video compilations of double- and triple-digit successful drone strikes.[88] The videos resulting from successful drone strikes are then cycled back into the social media sphere by the units themselves. They are also frequently integrated into state-led strategic-level messaging. These videos are likely aimed at contributing to Ukraine's narrative of making progress in the war and inspiring more donations in what is probably intended to be a self-reinforcing positive feedback cycle to enable this part of the war effort to 'drone ahead'.

As a final note on the effectiveness of this emerging phenomenon, Volodymyr Zelensky –

in recognition of what began as a social media movement crowdfunding the militarisation of drones – signed a presidential decree on 6 February 2024, ordering the establishment of the Unmanned Systems Forces as a separate branch in the Armed Forces of Ukraine.[89]

Discussion and Findings

This article has described and explored the converging triad of social media, crowdfunding and the use of weaponised commercial off-the-shelf drones in the war. The article finds that social media has emerged as a primary battleground in information operations. In the case of Ukraine, the social media landscape consists of government and non-government entities, all participating in shaping perceptions, either as part of a centralised plan or indirectly through projecting pro-Ukrainian messaging. In addition to Ukrainian government entities, the global pro-Ukrainian social media landscape consists of influential civilian mil-bloggers, but also a multitude of military units, influencing both the local and international media space with content ranging from commentaries and assessments of Ukraine's performance in the war, to videos of combat operations featuring frontline soldiers and drones involved in engaging the enemy. Of note, there appear to be significant differences to the degree in which Ukraine and Russia have succeeded in their messaging during the war. On the Russian side, vocal mil-bloggers and soldiers have frequently disrupted the Russian state-controlled

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87. Realna Viyna 18+ [Real War 18+], Telegram channel, <https://t.me/voynareal_ua>, accessed 16 March 2024; Supernova+, Telegram channel, <https://t.me/supernova_plus>, accessed 16 March 2024.

88. ButusovPlus, 'Bil'she nizh 100 znyshchenykh vorozhykh tsilei' ['Perun 100 bombings compilation'], Telegram post, 3 July 2023, <https://t.me/ButusovPlus/3480>, accessed 3 September 2023; Realna Viyna 18+ [Real War 18+], 'Spetspryznachentsi pidrozdilu "Bilyi volk" prodovzhuyut' poliuvannia – znyshcheno shche 10 rosiys'kykh tsilei' ['Special forces of the "White Wolf" unit continues the hunt – another 10 Russian targets have been destroyed'], Telegram post, 20 May 2023, <https://t.me/voynareal_ua/23584>, accessed 3 September 2023; Realna Viyna 18+ [Real War 18+], 'Spetspryznachentsi SBU vlashtuvaly "nebesnu karu" okupantam z dopomohoyu FPV-droniv' ['SBU special forces has delivered "heavenly retribution" to the occupiers using FPV drones'], Telegram post, 12 May 2023, <https://t.me/voynareal_ua/23249>, accessed 3 September 2023; Realna Viyna 18+ [Real War 18+], 'Rosiyany skarzhyut'sya, shcho yim ne vystachaie boieprypasiv? Spetspryznachentsi SBU zdiisniuiut' priami adresni dostavky bez zatrimok' ['Russians complain that they lack ammunition? SBU special forces carry out direct targeted deliveries without delays'], Telegram post, 16 May 2023, <https://t.me/voynareal_ua/23417>, accessed 3 September 2023; Realna Viyna 18+ [Real War 18+], 'Spetspryznachentsi TSO "A" SBU znyshchyly novu partiю rosiyan i vorozhoyi tekhniki' ['Special forces from the Special Operations Centre "A" of the SBU destroyed a new batch of Russians and enemy equipment'], Telegram post, 7 July 2023, <https://t.me/voynareal_ua/25741>, accessed 3 September 2023; Terra Ops, 'Zalitay u Tretiu shturmovu!' ['Fly into the Third Assault!'], Telegram post, 17 January 2024, <https://t.me/terraops/796>, accessed 15 March 2024.

89. Zelenskiy / Official, 'I have signed a decree initiating the establishment of a separate branch of our Defense Forces – the Unmanned Systems Forces. This is not a matter of the future, but something that should yield a very concrete result shortly.', Telegram post, 6 February 2024, <https://t.me/V_Zelenskiy_official/9380>, accessed 7 February 2024.

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information space. On the contrary, the Ukrainian information campaign is largely complemented by pro-Ukrainian mil-bloggers and military units projecting a relatively unified narrative to both its domestic and international audiences.

Overall, Ukraine's partially decentralised but centrally encouraged drone war has proven successful

The study finds that social media messaging serves various purposes, from being a means of sustenance for individual content creators to providing a positive image of Ukraine's conduct in the war and motivating individuals to contribute financially or materially to the war. It is likely that Ukraine's unified and comprehensive narrative, often involving the Ukrainian military standing its ground or taking ground, influences and shapes perceptions on all levels, from individuals and groups to influential corporations and foreign governments. In the context of this article, this messaging encourages individual donations via mil-blogger intermediaries or directly to the military end-users. These individuals contribute digitally, financially or materially on a scale never seen before, enabled by online payment systems. Such crowdfunding, although often unquantifiable due to it bypassing centralised mechanisms, results in multimillion-dollar direct transfers to fundraisers for the war effort. Thereby, the crowdfunding entities are turning crowdfunding into financial weapons of war.

The study also finds that there appears to be a tendency for contributors to want to contribute as far forward in the fight as possible, by donating directly to frontline units. Although outsiders' direct financing of military units undermines the traditional chain of command, the practice is encouraged, likely based on necessity rather than desire. These donations enable frontline units to engage the enemy with means they would not otherwise have been resourced with, often involving acquiring and weaponising commercial off-the-shelf drones.

Ukraine's industrial-scale commercial drone war has likely come as a surprise to many. At the same time, it stands out as a natural evolutionary response to a situation where Ukraine was otherwise militarily outnumbered and outgunned. Wars of attrition are essentially about inflicting an unsustainably high cost on an enemy over sufficient time to undermine its ability or will to

resist. Consequentially, employing a high volume of low-cost drones to inflict a comparatively high human and material cost on an enemy, while simultaneously reducing one's own losses, is a militarily sound way of eroding the enemy's ability and will to resist. The drone war has likely paid off from such a cost–benefit perspective, despite heavy losses from enemy countermeasures. The study finds that Ukrainian military units document their achievements in the drone war by – either independently or with centralised support – creating content that is uploaded on to social media as part of information operations and to stimulate continued donations, thereby creating a cycle of financial support that is in part self-reinforcing. This is evident from the fact that the units most active in social media carry out the largest crowdfunding campaigns, thereby receiving more drones, which in turn results in more video material that can be uploaded on social media to attract more online followers and potential donors.

Overall, Ukraine's partially decentralised but centrally encouraged drone war has proven successful. However, there are several critical concerns arising from such participatory sponsor-driven drone warfare. As mentioned, outside resourcing of military units undermines traditional military hierarchies where the parent organisation is supposedly responsible for equipping and resourcing military units. In addition, tactical-level military units now wield strategic-level influence by uploading videos and other content. Although the practice has generally produced positive outcomes, it has the potential to also result in unintended strategic-level consequences as Russia has exploited such media content to level accusations of military misconduct and war crimes, causing a significant compression of the military chain of command.[90] Furthermore, there is a risk that public support may be allocated based on public appeal rather than strategic military significance. Nevertheless, the global horizontal networks that have emerged as a consequence of the war have likely proven highly beneficial for Ukrainian tactical-level units, both in terms of their increased ability to inflict losses on the enemy and in reducing their own losses.

Although primarily conventional, the war in Ukraine signals a paradigm shift in the financing and conduct of war, shaped by the partially decentralised and democratised interplay of digital technologies, global networks and the proliferation of weaponisable commercial technologies. This transition also signals an erosion of state-sponsored military-industrial

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90. Jake Cordell, 'Russia Accuses Ukraine of Executing More Than 10 POWs', *Reuters*, 18 November 2022.

complexes' monopoly on arms production. In addition, the clear demarcations that once separated civilian and military roles in traditional warfare are becoming increasingly blurred. Also, support for warfare is no longer constrained by national borders or reliant on governmental aid; it has transformed into a global, collective effort. In this new paradigm, global connectivity and real-time engagement have become almost as integral to the battlefield as the soldiers themselves.

Conclusion

The war in Ukraine – with its profound brutality and human suffering – has put an end to decades of academic predictions and military forecasts about the character of 'the next war', and instead shifted this discipline to the analyses of a real-time event as the answers continue to manifest themselves before us. The article finds that contemporary conventional warfare is rapidly evolving due to the influence of the digital age's social media and online payment systems, which enables an industrial-scale proliferation of disruptive dual-use technologies repurposed for use in war. This evolutionary change challenges the conventional thinking of how wars are fought, suggesting a shift towards a paradigm where civil and military activities become increasingly intermixed, and dual-use consumer technologies play a more significant role in shaping the character of war.

Social media platforms have emerged as important battlegrounds of the cognitive domain. Supported by digital crowdfunding, they enable global support to reach frontline units in Ukraine. These units now serve several purposes, no longer only as combat units but also interacting in information warfare and carrying out their own crowdfunding initiatives. This multifunctionality blurs the traditional boundaries of civil and military actions. Furthermore, the proliferation of drones and the emerging drone warfare also signify an evolutionary transformation in how ground, air and naval warfare is theorised and executed.

The war also has profound implications for defence and security policies. One emerging question is the ability of organisations like NATO to comprehend and adapt in time to the unfolding changes to the character of war. While Ukraine is not a NATO member, its security ties with NATO and the West make its experiences invaluable. As nations prepare for future conflicts, it is imperative to learn from Ukraine's experiences to ensure that preparations align with the contours of forthcoming wars rather than preparing for the paradigm wars of the past. After all, it is unlikely that the war in Ukraine is going to be the last 'people's war in the digital age'. ∎

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The Fabrication of Political Automata

Only the development of robot soldiers, which, as previously mentioned, would eliminate the human factor completely and, conceivably permit one man with a push button to destroy whomever he pleased, could change this fundamental ascendancy of power over violence.

—Hannah Arendt

When Theodor Adorno composed his *Minima Moralia*, in 1944, the V-1 and V-2 rockets dispatched to London by the Nazis constituted one of the subjects of his reflections.[1] In a long section titled "Out of the Firing Line," he wrote:

Had Hegel's philosophy of history embraced this age, Hitler's robot-bombs would have found their place . . . as one of the selected empirical facts by which the state of the world-spirit manifests itself directly in symbols. Like fascism itself, the robots career without a subject. Like it, they combine utmost technical perfection with total blindness. And like it, they arouse mortal terror and are wholly futile. "I have seen the world-spirit," not on horseback, but on wings and without a head, and that refutes, at the same stroke, Hegel's philosophy of history.[2]

It refutes Hegel because history has lost its head and the world its mind. Mechanics have destroyed teleology.
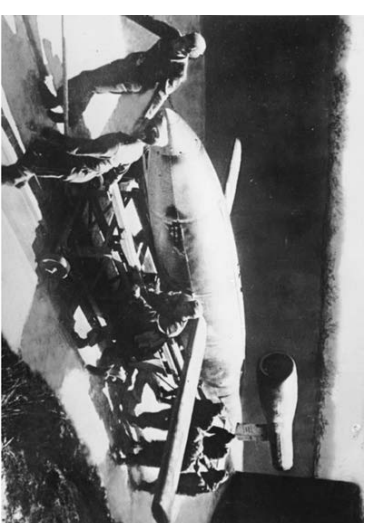
A V-1 before being launched, 1944. Lysiak, "Marschflugkörper V1 vor Start," Bundesarchiv Bild 146-1973-029A-24A.

The subject has faded away. There is no longer a pilot in the plane, and the weapon is no longer the essence of anybody.

However, a few lines further on, Adorno introduces a decisive dialectical nuance into that original statement. Having emphasized that in this armed violence that involves no combat, the enemy is now relegated to the role of a "patient and [a] corpse" to which death is applied in the form of "technical and administrative measures," he goes on to say: "Satanically, indeed, more initiative is in a sense demanded here than in old-style war: it seems to cost the subject his whole energy to achieve subjectlessness."[3]

The nightmare that takes shape on the horizon is one in which weapons themselves become the only detectable agents of the violence of which they are the means. But before again rushing in to proclaim the death of the subject, we should meditate on the reflection that the ghostly planes launched

by the waning Third Reich inspired in Adorno: "it seems to cost the subject his whole energy to achieve subjectlessness."

It would be a mistake to think that automatization is in itself automatic. Organizing the relinquishing of political subjectivity now becomes the main task of that subjectivity itself. In this mode of domination, which proceeds by converting its orders into programs and its agents into automata, the power, already set at a distance, renders itself impossible to seize upon.[4]

Where is the subject that holds power? Against a background of neoliberalism and postmodernity, that question has become obsessive. Adorno's words indicate a good way to resolve it: it is wherever it is working actively in order to make itself forgotten. The intense activity designed to efface it is what unfailingly singles it out: a great deal of subjective activity, involving huge efforts and enormous energy, designed to cover one's tracks, efface evidence, and wipe out any trace of a subject involved in action. The aim is to dress all this up as purely methodical functioning, a kind of natural phenomenon endowed with a similar kind of necessity, headed only by administrative systems that from time to time correct bugs, bring things up to date, and regulate access to information.

In the United States, the Department of Defense today looks forward to "gradually reducing the role of human control and decision" in the functioning of drones.[5] Although it may initially be a matter of moving into a "supervised autonomy," in the long term the aim is to establish total autonomy. At this point, human agents would be neither in the loop nor over it (in the sense of supervision), but completely out of the loop. What is envisaged is a situation in which "robots are capable of exerting lethal force without human control or intervention."[6]

The roboticist Ronald Arkin is today one of the most

active promoters of this "lethal autonomous robotics."[7] His main argument is, once again, of an "ethical" nature: robot warriors will be "potentially capable of performing more ethically on the battlefield than are human soldiers."[8] Better still, they will be able to "behave in a more humane manner than even human beings, in these harsh circumstances."[9]

To justify his work, he writes, "My personal hope would be that they will never be needed in the present or the future. But man's tendency toward war seems overwhelming and inevitable." Alas, if we cannot avoid war, at least let us use our technical abilities to try to make it more ethical, for indeed if we could manage that, it would be "a significant humanitarian achievement."[10] To be sure . . . but in what respect could those prospective robot warriors "be more humane on the battlefield than humans"?[11] For a whole series of reasons, in particular thanks to their "precision," but above all because they can *be programmed to respect the law.*

These robots would be equipped with what Arkin calls an "ethical governor," a kind of artificial conscience or mechanical superego.[12] When lethal action is suggested by some other program, this deliberation software would trawl through the rules of warfare translated into ethical logic "in order to ascertain that it constituted an ethically permissible action."[13]

Because the robots would have no emotions or passions that might upset their judgment, they would apply these rules to the letter, like cold-blooded killers. And it is precisely because they "evince no fear, anger, frustration or vengeance"[14]—in other words, because they do not possess affect, an essential human property—that these machines are considered to be more humane than humans, that is to say more ethical. In order to produce authentic humanity, it is necessary to get rid of human beings, to liquidate them.

Such paradoxical discourse is not as absurd as it appears

to be. To explain it, it must be pointed out that it plays upon different meanings of the term "humanity," a word that classically has at least two meanings: on one hand, what human beings are, their essence; on the other, a norm of conduct, the fact of acting "humanely." One of those meanings is ontological, the other axiological. The very possibility of humanism lies within that semantic gap. And, in a rather bizarre fashion, it calls upon human beings to be humane—to adopt certain forms of moral behavior that conform to its ideal. But whereas the constitutive gesture of philosophical humanism consists in enfolding those two meanings together, roboethical posthumanism takes note of their discordance, even to the point of disengaging them. If humans can sometimes prove inhumane, why should nonhumans not be able to be more humane than humans, that is, better able to conform to normative principles that define humane conduct? Axiological humanity could then become a property of nonhuman agents, just so long as those artificial moral agents are programmed in accordance with the *correct* rules. So far, so good—or almost. However, the problem blows up in your face as soon as the action under consideration is homicide. Roboethicists basically declare that it's not a problem if machines decide to kill human beings. So long as those machines kill them humanely, in conformity with the principles of the humanitarian international law that dictates the use of armed force, there is no problem.

But where might problems arise? From the point of view of legal philosophy, two very important—in truth, insurmountable—problems can soon be detected.

First, to endow mechanical agents with the same right to kill that is enjoyed by combatants in warfare would be tantamount to setting homicide on the same level as the destruction of a purely material object, and that would certainly constitute a radical negation of human dignity. Once

the law noticed this, in order to ban such weapons it could mobilize a third meaning of the notion of humanity, understood this time as *humankind*, which is the supreme object of its protection.

Second, the existing law on armed conflicts, by focusing on the *use* of weapons, postulates that it is possible to draw a real distinction between the weapon, conceived as a thing, and a combatant, conceived as a person who uses that thing and is responsible for how he uses it.[15] But the law's implicit ontology is blown apart by the autonomous lethal robot, for here we unexpectedly find a thing that sets about using itself. The weapon and the combatant, the instrument and the agent, the thing and the person become strangely fused into a single entity without a status.

The problem might first find expression in a crisis concerning legal categories: can certain things be considered persons? But it would also be reflected, in a purely pragmatic way, by a radical crisis affecting the *applicability* of the law. Everything would turn on the question of responsibility and, through this, on the very possibility of retributive justice associated with the laws of war.

A robot commits a war crime. Who is responsible? The general who deployed it? The technicians who programmed it? Within this little world, there would probably be a great deal of buck-passing. The military commander could always plead that he gave no orders to the robot and that, in any case, he was no longer in control of it. The state, the owner of the machine, the legal guardian of the thing, would no doubt acknowledge some responsibility, but by pleading that the damage caused stemmed from faulty fabrication, the state might place the blame on the manufacturer, who in turn might seek to blame the programmers. Then there is the matter of the robot itself. All that would need to be done would be to incarcerate the machine, dress it in male

clothing for its trial, and execute it in a public place, just as in 1386 a criminal sow was executed for infanticide in a village in Calvados."[16] All of which would, of course, be as senseless and useless as beating or reprimanding a piece of furniture that one had bumped into, in order to teach it a lesson.

In short, this would involve a whole group of irresponsible people deemed responsible, and it would be very difficult to decide who had perpetrated the crime. With no person guilty of pressing the button, it would be necessary to seek out the tracks of an elusive subject amid the maze of legal and computer codes—a hunt for a subject in flight.

The paradox is that in the last analysis, when the lethal decision is purely automatic, the only human agent directly identifiable as the efficient cause of death would turn out to be the victim himself, who, as a result of making inappropriate physical movements, was unfortunate enough to set off the automatic mechanism that results in his own elimination.

Not only can there be no simple attribution of responsibility, but the description of that responsibility, diffracted amid this headless network of multiple agents, tends to become diluted. It changes from being intentional to being unintentional, from being a war crime to being a military-industrial accident. Rather, as in the case of the "junk bonds" skillfully elaborated by finance, it becomes very difficult to determine who is who or who has done what. This is a typical way of fabricating irresponsibility.

But what, the roboethics experts chorus in reply, is the point of bothering to discover possible guilty parties, given that crime has been ruled out? Strange though this objection may appear, it is important to assess the full implications of what it expresses, for what is at stake here is how to implement the legal norm. In order to get highway speed limits respected, one can either position radar devices and impose fines, or else one can install automatic speed limiters in

every vehicle. Those are two very different ways of imposing a norm: one is a sanctioning text, the other an integrated means of technical control. Either announce the law and establish sanctions a posteriori or else "incorporate ethical and legal norms into weapons design."[17] However, there the analogy peters out, for since the killer robot incorporates no driver, there will no longer be anyone directly responsible who can be blamed if anything happens.

That is something of which "warbot" proponents are very much aware. But they have already made their choice between international penal justice and ethical killer robots. "Be careful," they add; we must make sure that no excessive "devotion to individual criminal liability as the presumptive mechanism of accountability risks blocking development of machine systems that would, if successful, reduce actual harms to civilians."[18] With the law on course to become mechanical, human justice may well perish.

But to claim, as they do, that the law can be integrated into "weapon design" itself is a gross abuse of language. All that the roboethicists can do is integrate certain rules within the design of certain programs, which clearly can be uninstalled or reprogrammed at any time. If you are capable of doing this on your own computer, you can be sure that every army in the world is likewise capable of doing so. The discursive operation here consists in justifying the development of highly dangerous *hardware* by offering the option of virtuous software. Congratulations: in buying the car (or rather the robot tank), you have also won a magnificent key ring.

This is a typical "Trojan horse" type of procedure: in the name of the eventual prospect of ethical killer robots, you win the acceptance of the development of killer robots pure and simple, even though, as their supporters themselves know full well, public opinion still is massively opposed to them. By presenting the process of automatization as itself

automatic and ineluctable, and by generously proposing in advance to moderate its excesses, Arkin and his associates are masking the fact that they themselves are the extremely active agents of that very process,[19] effectively promoting it by providing the justifications that will be needed for it to prosper. The more widespread the legend of the ethical robot becomes, the faster the moral barriers to the deployment of killer robots give way. One might almost forget that the surest way to make the potential crimes of the cyborgs of the future impossible is still to kill them immediately, while they are as yet unhatched and there is still time to do so.[20]

Los Angeles, 2029. Above the ruins of the town, in the dark blue night, fluorescent lighting zigzags across the sky. On the ground a human combatant collapses, hit by a laser from a robot plane. The caterpillar tracks of a ghostly tank roll over a mountain of human skulls. This is the famous opening scene in "the war of machines to exterminate humanity" in James Cameron's 1984 film *The Terminator*, one of the first, fleeting cinematographic appearances of a drone, in the style of 1980s science fiction.

The utopias and dystopias of the robot are structured by the same fundamental, simplistic schema of two terms, man and machine, in which the machine either appears as the servile extension of some human sovereign or else, increasingly autonomous, begins to slip out of the control of its former masters and to turn against them. That is the scenario of *The Terminator*.

In this kind of story, after a description of the initial position of the pilot or teleoperator, which is that of an all-powerful agent, his imminent fall is announced. The human is soon to lose his central position. The drones will become robots. This switch to integral automatism is, we are told, written into the necessary evolution of the device: "in the

long term, any step toward tele-presence is a step toward robots," as Marvin Minsky prophesied in 1980.[21] This initial centrality of the subject is followed by the announcement of the death of the subject, who at that point loses what he used to be believed to possess fully, namely control. Therein lies the paradox of this model: although initially radically anthropocentric, it is affected by a movement that inevitably ends up by evicting the human subject.

When Walter Benjamin, in his day, analyzed the position of a bomber pilot, he offered a more realistic approach to the initial moment: "In the person of the pilot of a single airplane full of gas bombs, such leadership embodies all the absolute power which, in peacetime, is distributed among thousands of office managers—power to cut off a citizen's light, air, and life. This simple bomber-pilot in his lofty solitude, alone with himself and his God, has power-of-attorney for his seriously stricken superior, the state."[22] In order to grasp what type of agent or subject the pilot is, we need to imagine him in his relationship to another kind of machine—not a plane but the state apparatus, all of whose powers he momentarily concentrates in himself, albeit from a subordinate position. Although he may possess a slim margin for personal maneuver, the pilot only appears to be the all-powerful "master of the machine." In reality he is already little more than the fetishized avatar of the modern state's bureaucratic machine, its provisional concretization reduced to one point, one hand or one thumb. What the dronization of the fighter plane sets out to accomplish technically is the suppression or displacement of this most imperfect link between the state apparatus and its war machines.

In *Wired for War*, Peter W. Singer describes the following scene: A four-star general spends several hours watching from his office the images relayed back by a Predator drone. Eventually he reaches for his telephone to give the

order to fire, and even goes so far as to specify to the pilot what type of bomb to use. This scene provides an example of the total confusion between the various levels of command, in which the general involves himself in the lowest level of tactical choices.[23] Concerned with military efficiency, Singer is alarmed by this kind of confusion of roles. At least his warning is clear: while theorists of "network-centric warfare" thought these new techniques would make a measure of command decentralization possible, "actual experience with unmanned systems is so far proving the opposite."[24]

Instead of "man" in general losing control to the "machine," here it is the lower-ranking operators who lose their relative autonomy to the higher echelons of the hierarchy. Integral robotization would further strengthen this tendency to centralize decision making, although in a manner different and certainly more discreet, but no less overdeveloped.

As roboticist Noel Sharkey (who is fiercely opposed to the development of such programs) explains, the deliberation software for an "ethical robot" must, like any other program, necessarily incorporate not only rules but also *specifications*.[25] In other words, an order to "target only legitimate targets" is an empty operation if there is no specification of what is covered by the variable term "target." Similarly, one can attempt to codify the principle of proportionality (good luck with that),[26] but it will always be necessary to specify, whether directly or indirectly, what constitutes the acceptable proportion of the number of civilians killed to the military advantage expected. In short, the parameters of the decision need to be specified, and that specification is not done by the program itself. A higher-level choice is needed—*a decision about the decision*.

The centralization of command (even if that command is now conveyed by programmatic specifications rather than by verbal orders) now takes on excessive proportions, for one

single *decision about the decision*—the choice of a single value that fixes the parameters of all future automatic decisions in a particular sequence—once and for all has consequences for the unfolding of an indefinite myriad of future actions. Fixing the value of a specification for a program is far more effectively centralized than a set of separate orders—it is the equivalent of signing a single but infinitely repeatable death sentence.

In order to assist the process of decision taking, modern armies are already using software that is claimed to ensure that decisions are as closely in line with the law of war as is possible—and are therefore more "ethical." Here is an insight into how pertinent values are established: "In the opening days of the invasion of Iraq, they ran computer programs, and they called the program the Bugsplat program, estimating how many citizens they would kill with a given bombing raid. On the opening day, the printouts presented to General Tommy Franks indicated that 22 of the projected bombing attacks on Iraq would produce what they defined as heavy bugsplat—that is, more than 30 civilian deaths per raid. Franks said, 'Go ahead, we're doing all 22.'"[27]

Here, the military atrocity was, contrary to Arkin's assumption, not the result of mistakes on the part of lower-rank soldiers confused by the "fog of war" or carried away by the passions of combat. There was nothing spectacular about the point of origin of this atrocity. It was simply a matter of fixing the threshold of a relevant variable. What would be the figure corresponding to the variable "minimum carnage"? We do not know. More than thirty citizens killed? Okay. But this little decision affecting a decision, effected by a single word or one tap on a keyboard, has multiple very concrete—all too concrete—results.

What is most surprising is that this could still come as a surprise. The greatest crime lies not in an open flouting of

the law but in the recesses of its sovereign application. This ordinary military atrocity lies well within the law, and except under the most imperative conditions, it does not have to emerge. Most of the time it does not need to. Contemporary forms of atrocity are hugely legalistic. They are the rule rather than the exception, not so much because the law has been suspended, but rather because it has been spelled out in accordance with the interests involved to the point where it capitulates with scant resistance. This kind of atrocity is formalistic, cold, technically rational, and backed up by particular conditions—the same elements that are supposed to make the killer robots of the future eminently ethical.

When the 1830 uprising in Paris was in full swing and it was becoming increasingly clear that the people would at last succeed in toppling the regime, the Duke of Angoulême is said to have given the following order to his aide-de-camp:

"Have the barricades destroyed."

"My lord, there are insurgents inside who will prevent it."

"Have the National Guard fire at the insurgents."

"My lord, the National Guard refuses to fire."

"It refuses? This is rebellion; have the troops fire at the National Guard."

"But the troops refuse to fire at the National Guard."

"Then order the troops to be fired upon."[28]

But of course there was nobody left to do that.

In 2003, when Northrop Grumman presented the military with the prototype of its X-47A combat drone, one officer exclaimed, "Hey, at least that plane won't talk back to me."[29] But, contrary to what is suggested by science-fiction scenarios, the danger is not that robots begin to disobey. Quite the reverse: it is that they never disobey.

For in the list of human failings that military robots would avoid, there is one that is decisive but that Arkin forgets to mention: a capacity for insubordination.[30] Robots may be faulty or dysfunctional, but they do not rebel. The robotization of soldiers is wrongly represented as an ethical gain (although in redefining "ethical" as conforming mechanically to rules, it is reduced to being synonymous with the most lobotomized discipline or docility). In reality it constitutes the most radical of solutions to the age-old problem of army indiscipline. It rules out the very possibility of disobedience, but at the cost of simultaneously suppressing the principal source of infralegal limitation to armed violence: the critical conscience of its agents.[31]

The problem lies not with knowing whether control lies with "man" or with "machine," for that is an underdetermined formulation of the problem. What is really at stake is the problem of material and political automatization of the bodies of armed men, the essence of the state apparatus.

Theories can sometimes be summed up efficiently by an image or a drawing. The frontispiece of *Leviathan* shows a giant whose torso rises above the land. The figure is recognizable from its classic attributes: sword, crown, and scepter. But it is his clothing that attracts attention: his coat of mail is woven entirely from tiny human bodies. The state is an artifact, a machine—even the "machine of all machines"—but the components that constitute it are simply the living bodies of its subjects.

The enigma of sovereignty and that of its constitution, as well as its possible dissolution, is resolved by the question of its material: what is the state made from?

What Hobbes did, La Boétie had tried to undo, and by the same means. After all, the master who oppresses you and "for whom you go bravely to war, for whose greatness you do not

Non est potestas Super Terram quæ Comparetur ei. Iob. 41. 24.

The frontispiece of Thomas Hobbes's *Leviathan*.

refuse to offer your own bodies unto death . . . where has he acquired enough eyes to spy upon you, if you do not provide them yourselves? How can he have so many arms to beat you with, if he does not borrow them from you?"[32] Therein lay the fundamental material contradiction: if power is embodied solely by our bodies, we can always refuse to offer them.

Arendt explained that, owing to this fundamental corporeal dependence, the power of the state—even in the most authoritarian of regimes—must, despite everything, be power and not pure violence.[33] There is no power without bodies. But, as she in a way acknowledged, the reciprocal statement is true: with no bodies mobilized, there is no longer any power.

A different age produces a different image. In 1924, a popularizing scientific magazine announced a new invention: a radio-commanded policing automaton. The robocop of the twenties was to be equipped with projective eyes, caterpillar tracks, and, to serve as fists, rotating blow-dealing

Radio Police Automaton

Distant Control by Radio Makes Mechanical Cop Possible

By H. GERNSBACK
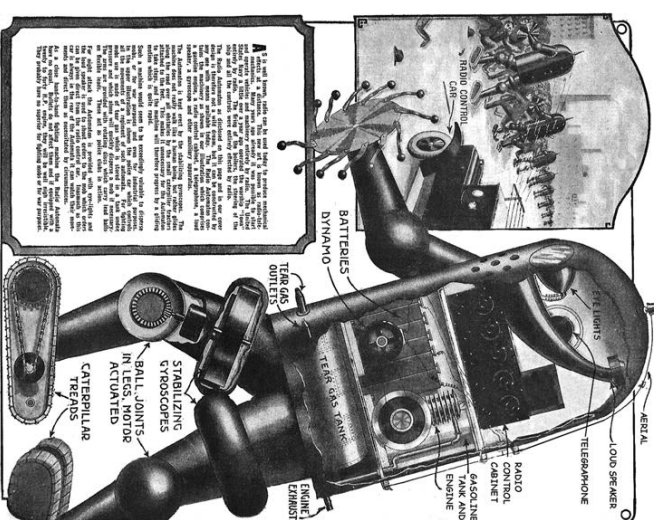
A radio-controlled police automaton. From Hugo Gernsback, "Radio Police Automaton," *Science and Invention* 12, no. 1 (May 1924): 14.

truncheons inspired by the weapons of the Middle Ages. On its lower belly, a small metal penis allowed it to spray tear gas at unruly parades of human protesters. It had an exhaust outlet for an anus. This ridiculous robot that pissed tear gas and farted black smoke provides a perfect illustration of an ideal of a drone state.

The difference between these two vignettes heralds what is at stake politically in the dronization and robotization of the armed branches of the state. The dream is to construct a bodiless force, a political body without human organs, replacing the old regimented bodies of subjects by mechanical instruments that would, if possible, become its sole agents.

Once the state apparatus thus becomes, in effect, simply an *apparatus*, it would finally have acquired a body that corresponded to its very essence: the cold body of a cold monster. It would at last technically fulfill its fundamental tendency. As Engels wrote, "This power, arisen out of society, but placing itself above it and increasingly alienating itself from it, is the state."[34] All the same, once this stage was reached, it is also possible that its increasingly evident destiny would be to be dumped in a junkyard like any other piece of scrap metal.

Further Readings, Materials, Resources

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