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Author(s): Helga Tawil-Souri

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## DIGITAL OCCUPATION: GAZA'S HIGH-TECH ENCLOSURE

HELGA TAWIL-SOURI

*In disengaging from the Gaza Strip in 2005, Israel did not end the occupation but technologized it through purportedly “frictionless” high-technology mechanisms. The telecommunications sector was turned over to the Palestinian Authority under Oslo II and subcontracted to Palestine Telecommunications Company (PALTEL), furthering a neoliberal economic agenda that privately “enclosed” digital space. Coming on top of Israel’s ongoing limitations on Palestinian land-lines, cellular, and Internet infrastructures, the result is a “digital occupation” of Gaza characterized by increasing privatization, surveillance, and control. While deepening Palestinian economic reliance on Israel and making Palestinian high-tech firms into dependent agents, digital occupation also enhances Israel’s territorial containment of the Strip.*

AS ISRAEL WAS preparing to disengage from the Gaza Strip in summer 2005, the Israeli Ministry of Foreign Affairs claimed that “the relocation from the Gaza Strip . . . will reduce friction with the Palestinian population,” further contending that the unilateral move would “serve to dispel claims regarding Israel’s responsibility for the Palestinians in the Gaza Strip.”<sup>1</sup> Yet the shift to less military manpower, less direct contact with civilians, and subsequently less negative publicity has gone hand in hand with a tighter seal around Gaza. Gaza has since become an “airborne-occupied enclave,”<sup>2</sup> an open-air prison, and a testing-ground for the latest military technologies.<sup>3</sup> Disengagement has not meant the end of Israeli occupation. Rather, Israel’s balancing act “of maximum control and minimum responsibility”<sup>4</sup> has meant that the occupation of Gaza has become increasingly technologized.<sup>5</sup> Unmanned aerial reconnaissance and attack drones, remote-controlled machine guns, closed-circuit television, sonic imagery, gamma-radiation detectors, remote-controlled bulldozers and boats, electrified fences, among many other examples, are increasingly used for control and surveillance.<sup>6</sup> One way to conceptualize disengagement, then, is to recognize it as a moment marking Israel’s move from a traditional military occupation toward a high-tech one.

Rooted in Israel’s increasingly globalized security-military-high-tech industry, the technological sealing of Gaza is part of the transformation

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**HELGA TAWIL-SOURI** is an assistant professor in the Department of Media, Culture, and Communication at New York University. Her scholarship is on the intersections of globalization, spatiality, and media technologies in the Arab world and the Palestinian Territories.

of the mechanics of Israeli occupation toward “frictionless” control that began with the first intifada and the ensuing “peace process,” which marked the shift toward the segregation of Gaza.<sup>7</sup> “Frictionless” is, of course, metaphoric and purposefully ambiguous, evoking a sense of abstraction and lack of responsibility. It also highlights the increased role of high technology (as opposed to manpower) in surveillance and control.

While high technology has become one of the means through which Israeli occupation continues, the high-tech infrastructure *in* the Gaza Strip—that which is used *by Palestinians* as opposed to the Israeli regime—is also a space of control. Technology infrastructures form part of the apparatus of Israeli control over Gazans. A telephone call made on a land-line, even between Gaza City and Khan Yunis, is physically routed through Israel. Internet traffic is routed through switches located outside the Gaza Strip. Even on the ubiquitous cellular phones, calls must touch the Israeli backbone at some point. Like much else about the Gaza Strip, telecommunication infrastructures are limited by Israeli policies. Geographic mobility, economic growth, political mobilization, and territory are contained, but so are digital flows: Gazans live under a regime of digital occupation.

The phrase *digital occupation* highlights a dynamic process. First, it suggests that Israeli territorial control over Gaza continues, but increasingly also includes the high-tech realm. Second, digital occupation articulates the ways in which Palestinian and multinational corporations, the Palestinian Authority (PA), international nongovernmental organizations, and international capital networks combine to lead the development of telecommunications to follow a neoliberal economic agenda. A core contradiction arises against which to understand technology infrastructures: the confinement of Gazans in a narrowing and disconnected space occurs at the same time that high-tech globalization is posited as *the* route to openness and to overcoming confinement. Third, Gazans themselves “occupy” digital spaces, even if with constraints and sometimes illegally: they reach out to friends and family, report abuses, and escape physical confinement in virtual ways. It is an ongoing dialectic.

In what follows, I focus on the telecommunications infrastructure—telephone land-lines, cellular telephony, and Internet access—as a space of control. What I argue is, first, that high-technology infrastructure is the Palestinian-Israeli conflict in built form, and, second, that in the global network age, there are new forms of borders and enclosure mechanisms. I analyze how high-tech spaces are subject to control—a control necessary to Israel’s strategy to contain Gaza and accompanied by the capital controls of neoliberal globalization that the PA has embraced. My interest here is not the ways Gazans negotiate living under such a regime (what Gazans do on the Internet and the uses to which they put their mobile phones, while important, are beyond the scope of this article) but the *structure* of digital occupation. Digital occupation here highlights the relationship between territorial and technological enclosure.

## ENCLOSURES

Spatial control in the Palestinian-Israeli conflict writ large and in the sealing of Gaza specifically seems to involve an important paradox. On the one hand, land is a finite resource, and the power, sovereignty, and jurisdiction attached to territorial space are perceived as finite. Control over territorial space is assumed to be a zero-sum game in which one side is excluded or separated from the means of control. On the other hand, in our imagination, high technology is presumed to be territory-less, boundless, and inclusionary. Without the problem of land scarcity, and thus of access to and control over land, high technology is often imagined to be a win-win playing field. These are tensions that I challenge: it is impossible to speak of a Gaza that is territorially sealed and digitally boundless; there are material limitations to high-tech spaces.<sup>8</sup>

Many scholars and politicians suggest that while Gazans may be territorially locked up, if they have mobile phones and the Internet they are not just plugged into the world but can—at least virtually—overcome their territorial confinement.<sup>9</sup> The liberatory aspects ascribed to information technologies acquired increased salience with the Arab uprisings: if Tunisians and Egyptians managed to shake off their overlords in part thanks to Facebook, Twitter, and mobile phones, it is argued, perhaps Palestinians can too.<sup>10</sup> But against the fantasy of “new media revolutions,” we tend to forget that events on the ground still determine the “virtual,” and that digital networks, too, are spaces of control. Particularly in the Palestinian case, one must consider Israel’s continued demand that any future Palestinian state—to say nothing of the current configurations of enclaves such as Gaza—not only be demilitarized and without control over borders, but also, in the words of Israeli Prime Minister Benjamin Netanyahu, be “without control over its . . . electro-magnetic field.”<sup>11</sup> This is significant, not only in assessing whether a new media revolution is possible for/in Gaza, but in understanding the relationship between technology, political freedoms, and occupation.

Digital networks have their own forms of controls, their own “check-points” and nodes that serve to limit and contain flows.<sup>12</sup> Gaza is enclosed both by concrete and high-tech “walls” through a complex set of inclusions and exclusions operating through a variety of practices that render Gaza both a physical and a digital enclave. A useful way to look at Gaza and to assess the implications of digital occupation is through the concept of *enclosure*, drawn from the disciplines of economics, history, geography, and digital media studies.

Enclosure is a historically, geographically, and economically specific process that evolved as part of the industrial revolution in eighteenth-century Great Britain, which actively transformed a territorial space’s social economy, demography, and culture. Hegemonic groups asserted control over territory both through law and through architecture. The legal element

redefined property rights and, by reorganizing systems of ownership, use, and circulation, imposed different structures of sovereignty and access. The architectural element, meanwhile, recast the land's contours through the building of hedges, walls, fences, and gates. This combination of legal and architectural articulations resulted in new enclosed spaces that enforced a different system of circulation, flow, and trespass. Parts of social and economic life that were formerly common, noncommodified, and largely outside the realm of control and surveillance were turned into private and surveillable possessions under a new property regime limiting free (meaning both sovereign and not paid for) mobility. This pattern can be seen in Gaza, where the Oslo accords would be the legal element, and the spatial mechanisms that enclose it (walls, checkpoints, control towers, permits and identification cards, aerial drones, etc.)—poignant examples of land enclosure<sup>13</sup>—would be the architectural element.

Additionally, Marxist analyses by geographers such as Henri Lefebvre and David Harvey, and cultural theorists ranging from members of the Frankfurt School to Raymond Williams, have shown how the spread of neoliberal capitalism and dispossession has been a dynamic that exists throughout the circuits of capital, resulting in uneven spatial and economic development. The enclosure of Gaza is also to be understood as the production of a particular kind of economic space. Gaza's economic landscape is not simply unevenly developed but entirely de-developed: drowning in poverty, besieged by Israel, and almost entirely dependent on external aid (except for the tunnel economy).<sup>14</sup> Gaza is certainly not enjoying the economic peace that (parts of) the West Bank enjoys today. As for Hamas, since its takeover of the Strip in 2007, it has neither tried nor been given room to counter the neoliberal approach initially subscribed to by the PA.<sup>15</sup>

The process of enclosure is omnivorous in its drive for total assimilation: all kinds of spaces become inscribed and appropriated within its logic. Various scholars have expanded enclosure to geopolitical and economic analyses beyond industrial-age Great Britain, including to analyses of information networks. For example, Dan Schiller argues that what began as telecommunications networks capable of becoming common and public instead became leading edges in transnational capitalism.<sup>16</sup> That telephone and Internet access in most parts of the world are now privately held and have become largely commercial "spaces" is due to the legal, political, economic, and social decisions that rendered them such. This process of "digital enclosure" traces the relationship between a material, spatial process—the construction of networked, interactive environments—and the private expropriation of previously nonproprietary information.<sup>17</sup> It results in the construction of an increasingly restrictive legal regime that extends and enforces property rights over a growing range of information and practices. Thus, digital enclosure is twofold: the network and/or access to the network is privatized, and the data produced on high-tech networks become the property of the networks' owner-operators.

I propose the term *digital occupation* to describe the multifaceted process that combines the territorial and economic dynamics of land and digital enclosures (alongside other limitations). In Gaza, we witness the privatization of networks and information flows: a large corporation, the Palestine Telecommunications Company (PALTEL), manages the telecommunications infrastructure and structures, with the terms of access driven by legal and economic modalities instituted by the PA and continued by Hamas.<sup>18</sup> But the allocation of bandwidth; the placement, number, and strength of Internet routers or telephone exchanges; the range of cellular signals; and the equipment used are all limited by Israeli restrictions. Israel actively structures both the spaces of (high-tech) flows and the spaces of control in order to enclose, border, and surveil Gazans in “frictionless” ways.

Digital occupation is necessarily an expansive notion that uncovers how spatialities of inclusion and exclusion operate across logics and processes of neoliberal restructuring, legal frameworks, military violence, and modes of manipulation and exploitation at different scales. This combination is what makes the Gaza case unique.<sup>19</sup>

### SEGREGATED BUT DEPENDENT

Digital occupation manifests itself on multiple levels. In what follows I analyze first the PA's economic and legal decisions, and second, Israel's “legal” and “architectural” decisions.<sup>20</sup>

The Israeli-Palestinian technological relationship, like their political and economic relationship, has been one of Israeli control and restrictions and Palestinian dependence. From the outset, Israel controlled and maintained telecommunications systems in the occupied territories and imposed legal and military restrictions on them. What little was done with regard to telecommunications in Palestinian areas rendered the network subservient to Israeli infrastructure. For example, all telephone switching nodes were built *outside* areas that might eventually have to be handed over to Palestinian control; thus, calls from Gaza City to Khan Yunis, or even within Gaza City, were routed through Ashqelon. The Israeli government (and after industry liberalization in 1985, the state telecommunications provider Bezeq) was in charge of telecommunications throughout Palestine-Israel. Despite the fact that Palestinians paid income, value-added, and other taxes to the Israeli government, Bezeq was neither quick nor efficient in servicing Palestinian users. Before Oslo, just over 2 percent of all Palestinian households had fixed telephone lines, compared with almost 30 percent of Israeli households.<sup>21</sup> Telephonically, Palestinians were enclavized and largely disconnected from the network, living under a regime that restricted both their mobility and their access to the outside world.

Oslo II, signed in September 1995,<sup>22</sup> reversed many of these restrictions. Palestinians were promised direct domestic and international telephone and Internet access. Oslo II stated: “Israel recognizes that the Palestinian

side has the right to build and operate separate and independent communication systems and infrastructures including telecommunication networks.”<sup>23</sup> It then went on to stipulate the conditions within which an “independent” Palestinian telecommunications system would be constrained and bordered, as follows:

[T]he Palestinian side shall be permitted to import and use any and all kinds of telephones, fax machines, answering machines, modems and data terminals. . . . Israel recognizes and understands that for the purpose of building a separate network, the Palestinian side has the right to adopt its own standards and to import equipment which meets these standards. . . . The equipment will be used only when the *independent* Palestinian network is operational.<sup>24</sup>

The point that the network would become independent only when the system became operational is crucial, because the Palestinian network to this day is not independently operational and continues to rely on Israel’s. This was not the fault of the Palestinians, however. As with other infrastructures (broadcasting, sewage, population registries, water, transportation, etc.), Palestinians were subjected to Israeli constraints that countered their right to build separate and independent systems. With regard to telecommunications, Israel continues to determine the allocation of frequencies, where to build infrastructure and install equipment, and much else that shapes the field. This was, after all, the bind of Oslo: the promise of future sovereignty was there, even if the fine print specified its impossibility.

The PA proceeded as if the limitations set forth in Oslo would eventually be lifted, and after Israel handed over responsibility for the infrastructure in 1995, it established a simulacrum of an “independent” telecommunications system. Reflective of the neoliberal agenda of the PA and its foreign donors, the only options posited for a successful “state” were private-sector

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growth, liberalization, and privatization,<sup>25</sup> and the PA passed responsibility for telecommunications to the private sector. PALTEL was awarded an exclusive ten-year license to operate fixed-line telephone systems and a twenty-year contract to run mobile-phone services. In return for its monopoly, PALTEL was to pay the PA 7 percent of its gross revenues for an undefined period. The license permitted PALTEL to build, operate, and own land-lines, a GSM (global system mobile communications) cellular network, data communications, paging services, and public phones. PALTEL’s largest investors were the economic powerhouses of Palestine. In Palestine, as in

much of the rest of the world, investment in and profit from large-scale infrastructure projects benefited those who already wielded substantial economic power.<sup>26</sup> By 2010, PALTEL’s market capitalization represented

more than half the value traded on the Palestinian Stock Exchange, the corporation contributed over one-third of the PA's tax income, and its revenues accounted for approximately 10 percent of the Palestinian GDP.

The PA's privatization of telecommunications bespeaks the supremacy of market logic.<sup>27</sup> The Palestinian telecommunications infrastructure was enclosed from the outset in that the network was privately owned and users had to accept whatever forms of access and fees PALTTEL instituted. The PA, in keeping with its approach to state-building more generally, neither treated telecommunication infrastructure as a public good nor considered the benefits of universal access. PALTTEL was celebrated as one of the first functional national institutions, but in fact it was only symbolically "national," its services available only to those who could afford them. Thus the process of enclosure was not sanctioned simply by Israel but doubly state-sanctioned insofar as the proto-state PA apparatus instituted neoliberal infrastructure-development policies.

These policies did not challenge Israel's ultimate control over telecommunications. Reliance on Bezeq for most domestic connections and all international connections, for example, continued under PALTTEL. As Bezeq spokesman Roni Mandelbaum remarked in 1996, Palestinians "are not entitled to any signs of sovereignty. . . . They have to rely on the infrastructure we supply them."<sup>28</sup> This has yet fundamentally to change. The only sovereignty gained since Oslo resulted from the liberalization of the *Israeli* market, which allowed PALTTEL to choose between different *Israeli* providers. In late 2009, after much political difficulty, a second cellular provider, Wataniya, began operating, but to date it has not been given Israeli permission to provide service in the Gaza Strip

In Palestine, as in the rest of the developing world, cellular telephony is more widespread than land-line service, since it is cheaper and relatively easier to install. In summer 1999, the first call on PALTTEL's cellular subsidiary, Jawwal, was made in Gaza.<sup>29</sup> The four Israeli cellular providers at the time continued to sell services to Palestinians (illegally according to the Oslo accords and PA regulations), without any economic, social, or political accountability to the PA. Since 1999, Jawwal has garnered a larger market share, but an estimated 20 to 40 percent of Palestinian cellular users today still use Israeli cellular service, which is cheaper. It is also generally available throughout the occupied territories because Israeli providers build and install infrastructure not only throughout Israel but also in the West Bank, usually on and along bypass roads, on hilltops, in settlements, in outposts, and in military installations. While there is no Israeli-owned infrastructure inside post-2005 disengagement Gaza, cellular signals from Israeli towers along the perimeter reach well within the narrow sliver of the Strip. Moreover, since the cellular spectrum all over Palestine-Israel is under the management of the Israeli Communications Ministry, the four Israeli cellular providers collectively boast signals more than two thousand times stronger than Jawwal's.



Israeli providers' and Palestinian subscribers' illegal actions continue. Israeli providers claim they cannot control pay-per-use users in the Palestinian territories, while the PA has outlawed and penalized Palestinian use of Israeli phone cards and cellular phones.<sup>30</sup> And, as with land-line telephones, much cellular traffic on Jawwal (and Wataniya in the West Bank) depends on the Israeli backbone.

Both land-line and cellular telephony are mostly creations of the Oslo era; what little land-line infrastructure existed before 1995 was handed over to the PA. The politics of the two technologies ought not to be understood as different, even though land-lines are integrated into the Israeli system and cellular telephones are not. Both are forced to be segregated from yet dependent on Israeli networks. While land-line and cellular technologies require different mechanisms to operate, the entire underlying structure of Palestinian telecommunications is occupied.

The infrastructure needed to connect to the Internet is much the same as that for telephony, and as such the possibility and limitations of an independent Internet connection parallel those of land-lines. Until 2005, Internet service in the occupied Palestinian territories was competitive in that there existed about a dozen Internet Service Providers (ISPs) in the West Bank and a handful in the Gaza Strip. All were resellers of Israeli bandwidth because no international gateway switches were allowed within the Palestinian territories. In January 2005, PALTEL began purchasing all existing Palestinian ISPs through its Internet subsidiary, Hadara, and by that summer had a monopoly on the market. While this monopoly ended in the West Bank with the establishment of Wataniya in 2009, it continues in the Gaza Strip, further demonstrating the privatization of access and the enclosure of high technology.<sup>31</sup>

Although the Oslo accords stated that Israel would release more bandwidth "as soon as any need arises," Jawwal continues operating on the same narrow frequency allocation it was first awarded.<sup>32</sup> In the West Bank, Wataniya also has also been operating with less bandwidth than needed to adequately serve its subscribers. It is within this context that a group challenged Hadara/PALTEL's limitation of bandwidth, using the slogan "Enough Walls. Say No to Internet Quotas." The maximum transfer rate Hadara provides any one subscriber is 2 Mbps (megabytes per second), and that bandwidth often has to be shared among numerous subscribers, effectively slowing down Internet traffic. But it is not Hadara/PALTEL that is to blame for limited bandwidth. As with cellular telephony, it is Israel's Communication Ministry that determines how much bandwidth Hadara is permitted in the first place. The campaign to end Internet quotas should then be understood as a poignant double-play on the kinds of "walls" erected in the high-tech realm, by both corporate and occupation forces. Above and beyond the privatization of high-tech space by Palestinian actors (PALTEL/Hadara and PA decisions), there remain controls determined by Israeli legal and architectural limitations.

## BOUNDARIES ON TELECOMMUNICATIONS

Hadara is mandated by Israeli authorities to provide limited bandwidth for Palestinian Internet use, making it invariably slower to surf the Internet in the territories than in Israel. Israeli providers sell bandwidth to Hadara at substantially higher rates than to providers in Israel, making Internet access relatively more expensive for Palestinian users. Moreover, the Israeli government has enforced strict limitations on the kinds of equipment permitted. In the case of the Gaza Strip, all switching routers for Internet traffic are located in Israel. The combination of higher costs, slower speeds, and limited technologies results in a bondage of bandwidth, meaning that Gazan Internet flows are limited, thus also limiting Gazans' integration into the network. As William Mitchell argues,

if you cannot get bits on and off in sufficient quantity, you cannot directly benefit from the Net. . . . Tapping directly into a broadband data highway is like being on Main Street, but a low baud-rate connection puts you in the boonies, where the flow of information reduces to a trickle, where you cannot make so many connections, and where interactions are less intense.<sup>33</sup>

Internet users in the Gaza Strip *can* surf the Internet—assuming the electricity works—but are forced to do so at a high price and slow rate, effectively limiting their virtual connections and flows. Furthermore, as is the case across the telecommunications sector, limitations imposed by the Israeli state force Internet traffic through Israel. The Internet is enclosed because of the privatization of the network, high costs, and the limitations of bandwidth, and also because it is territorially confined.

Boundaries have been erected on several layers of the telecommunications infrastructure. For example, Article 36 of Oslo II stipulated that “Israel recognizes the right of the Palestinian side to establish telecommunications links (microwave and physical) to connect the West Bank and the Gaza Strip through Israel.”<sup>34</sup> A microwave link was installed in 1995 to connect the West Bank and Gaza Strip but was quickly saturated (because of the Israeli Communication Ministry's refusal to provide more bandwidth) so that the majority of traffic had to be rerouted back through Bezeq's network. PALTEL was forbidden to import equipment (telephone exchanges, broadcasting towers, etc.) that could have allowed it to build an actually independent network that could connect across all Palestinian territories.

These kinds of territorial limitations are combined with “legal” and military measures that further contain Gazan telecommunications infrastructure. These include confiscating and forbidding the import of equipment, illegal competition by Israeli providers, limited bandwidth, limitations on what equipment can be installed where, delay of approvals, and purposeful destruction of machinery and infrastructure. There are ample examples: Jawwal's limited spectrum means that its more than 1.5 million subscribers

are paying for poor service because the network was built to support only its initial 120,000 subscribers. Hadara is still waiting for permission for an Internet trunk-switch to allow Internet traffic to circumvent Israel. Gaza's telecommunications networks are continually shut down for various reasons, including PALTEL's failure or delay in paying its Israeli providers and for Israeli-defined "security" issues. Telephone and broadcast signals are jammed and hacked into by the Israel Defense Forces (IDF). During the

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2008–09 war, for example, the Israeli military sent text messages and voice mails to cellular and land-line users in the Gaza Strip. Eyal Weizman argues that these are "technologies of warning" that provide the IDF the ability to warn Gazans of impending bombings and thus "legally" render their recipients into "legitimate targets."<sup>35</sup> From the perspective of the Palestinian user, however, these technologies of warning are also technologies of enclosure and occupation. Moreover, the mechanisms of digital occupation are exercised through the disruption of

everyday life, not simply during exceptional moments of violence. On any "normal" day, a Gazan's phone call is routed through Israel, his signals are jammed whenever a drone passes overhead (sometimes as often as every fifteen minutes), his phone service may be shut down or tapped, and his Internet connection surveilled. And for these interruptions and intrusions the Gazan user must pay nearly twice as much as his Israeli counterpart.

It is not just the end-user but also the telecommunications infrastructures themselves that are subject to the occupation's logic. Although former Israeli prime minister Ariel Sharon's Gaza disengagement plan stated that Israel would hand over the land-line infrastructure in Palestinian areas intact, the IDF severed the main north-south connection in the Strip and went so far as to bury parts of that line under the rubble of the Kfar Darom settlement.<sup>36</sup> In some cases, the destruction has been widespread and debilitating, most obviously during the 2008–09 assault on Gaza, when damage to PALTEL's network in Gaza was estimated at more than \$10 million.<sup>37</sup> Both the purposeful destruction of equipment and the prevention of its importation and installation limit the development of high-tech infrastructure. As is with all infrastructural limits imposed on Gaza—from electricity to sewage—impeding a "normal" infrastructure occurs on a daily basis, not only during military operations. As recently as August 2011, for example, international land-line, mobile phone, and Internet connections within Gaza were shut down when an Israeli military bulldozer severed connection lines near the Nahal Oz crossing, and PALTEL had to request Israeli permission to repair the line.<sup>38</sup>

PALTEL and its subsidiaries say they are pushing for complete separation from Israel, including ending their reliance on Israeli providers and equipment. Nevertheless, Israel has made it easier for PALTEL, Jawwal, and Hadara to acquire equipment from Israeli suppliers than from foreign ones.

"They [the Israeli authorities] make us prefer suppliers from Israel. There have always been limitations on our technology," explained a PALTEL executive in 2005.<sup>39</sup> Another PALTEL executive raises an additional concern, widespread among Palestinians: "How do we know that the equipment that comes from Israel is not tampered with? . . . [M]aybe they make it weaker, maybe they put surveillance mechanisms in there."<sup>40</sup> Such claims could seem outrageous, but there have been a number of occasions when Palestinians have been killed while using high-tech products. Most famously, bomb-maker Yahya Ayyash was killed in Gaza when a cellular phone given him by a Shin Bet informer exploded in his ear, while an Israeli airstrike killed Hamas political leader Abdel Aziz Rantissi, believed to have been pinpointed through the GPS locator inside a cell phone.<sup>41</sup> There have also been widespread rumors (which I have been unable to substantiate) of PALTEL public phones blowing up in the Gaza Strip. In any case, very little equipment, Israeli or otherwise, has been permitted into Gaza since the enforcement of the siege, either to fix what has been destroyed or to maintain or upgrade what exists.

The measures of frictionless control outlined above reinforce territorial barriers on high-tech flows, inhibit the development of Palestinian infrastructure, and perpetuate Gazans' economic dependence and de-development (and hence the uneven economic relationship). PALTEL and its subsidiaries have no choice but to purchase telecommunications capacity from the Israeli market.<sup>42</sup> That Gazan infrastructure is made to rely on the Israeli backbone and suppliers means that Israeli firms financially benefit from Palestinian telecommunications uses. Collectively, Israeli companies accumulate Palestinian-generated revenues at a number of junctures. Israeli operators surcharge calls between Jawwal phones and Israeli land and cellular numbers. Since all international calls, all calls to the West Bank, and many intra-Gaza calls are routed through Israel, Israeli operators also collect termination charges. As one PALTEL executive lamented in 2006, "PALTEL is one of Bezeq's biggest customers."<sup>43</sup>

Telecommunications is an example of "self-administration" under occupation. It is self-administration only to an extent, however, given its essential reliance on Israeli infrastructure. Telecommunications also highlights the PA's and PALTEL's roles as dependent agents of Israeli control that have nonetheless been able to profit from the situation economically. When one adds to the mix Israel's securitization of all forms of borders, the high-tech realm becomes a microcosm of the Palestinian/Israeli power imbalances. There is room to maneuver, room to modernize, and of course room for hegemonic interests to accumulate capital, but only if Israeli-imposed limitations allow for such room. Gazans have a telecommunications infrastructure, they can have land-lines installed, send text messages on cell phones, and surf the Internet, but in an extremely limited manner. Inevitably, this not only prevents the full and independent development of telecommunications infrastructure but also serves as a high-tech bordering mechanism to prevent or hinder territorial, communicative, and symbolic connections.

Limitations imposed on high-tech flows have important repercussions because of the growing importance of these flows in our globalized world. As Andrew Barry argues, “a mobile telecommunications or computing network may function as nothing more than an instrument for long-distance communication and control. But when understood as part of a ‘network society’ . . . the same technology is reckoned to be the basis for a whole new social or political order.”<sup>44</sup> It is no exaggeration to posit, as do Varnelis and Friedberg, that in globalization’s new space of flows, “areas and populations outside of this logic are subject to the tunnel effect: they virtually don’t exist as far as the networks, and hence, the dominant world economy is concerned.”<sup>45</sup> Certainly, Gazans’ economic relations—among themselves and to the outside world—are largely determined by Israel, but the tunnel effect also indicates how Gaza is both subsumed into the global network and excluded from it—or at best marginalized within it. Either way, it is an ominous example of capital’s uneven development. Yet without access to the digital network, without a node on the backbone, Gazans are marginalized from the larger networked world—economically, technologically, and otherwise.

### THE BORDERS OF DIGITAL OCCUPATION

Israel’s occupation of Gaza has not so much ended as been modified to include the digital spectrum. Bordering Gazans is achieved through “hard” conventional borders even as it is simultaneously diffused and concentrated in the ethereal and “soft” realm of digital infrastructure. Similar to the process of land enclosure, an active landscaping process produces new forms of property rights and different systems of circulation, trespass, and exclusion. Gaza for all intents and purposes is a “real,” territorial penitentiary,<sup>46</sup> but also a high-tech one.

The Israeli “space of power” has become one of *indistinction*: there is a wall, there are unmanned drones flying around, there is a limited telecommunications infrastructure, and Internet traffic must pass through the Israeli backbone. These are all interconnected so as to create a space of control. Israeli production of and control over Gaza’s borders are conventional and new, real and abstract, physical and cyber—frictionless and abrasive. Control over both land and high technology defines Israel’s spatial containment of Gaza.

Technology infrastructures further demonstrate the ongoing importance of territoriality—for Palestinians, for Israel, and more generally. Territoriality, and concomitant aspects such as bordering mechanisms, flows, and (im)mobilities, are products of social and material practices, themselves marked by uneven (de-)developments. Furthermore, that Palestinian technology infrastructures are constrained by Israeli policies demonstrates the spatial reach of Israel’s power—well beyond any supposed territorial boundaries. The borders of the technological may be

less visible than the walls, gates, fences, and checkpoints of the physical world, but they are no less real and significant politically.

As being plugged into the global network becomes more pervasive and necessary, it is access to the network and the flows this network affords that are important. What matters are the points of contact, the junctures, the on-ramps and off-ramps, the lines and cables underground and the towers and spectrum above ground, and, most of all, the control and ownership of all these. Here, it is the Israeli regime and its apparatus (the government, the police force, the military, the intelligence services, the high-tech industry, all with incestuous ties to each other) that is the site of power; the PA, PALTEL, PALTEL's subsidiaries, and other Palestinian high-tech firms are secondary. It is the Israeli state apparatus that decides whether, when, and where Palestinians may install, manage, and maintain infrastructure, just as it is the Israeli apparatus that limits and destroys that infrastructure.

Digital occupation characterizes the pernicious confluence between neoliberal capitalism and colonialism in actively transforming Gaza's social economy, demography, and culture toward increasing privatization, surveillance, and control. The enclosure of telecommunications embodies the dynamic restrictions over territoriality, politics, economics, communications, and, ultimately, the containment of Gaza.

To speak of the possibility of a placeless, boundless, exclusionary-less high-tech realm is to fail to see that, as in the territorial sphere, the Israeli regime continuously produces, reproduces, shifts, and fine-tunes digital borders to dynamically enclose Gaza, under the borders of which exist the enclosures of neoliberal policies. To suggest that Gazans can overcome territorial containment through "virtual resistance" fails to recognize both the materiality of high technology and the fact that changes on the ground are urgently needed. Save a significant reform of the neoliberal order *and* of Israeli occupation, a Gazan "new media revolution" will remain a virtual illusion.

## ENDNOTES

1. Israel Ministry of Foreign Affairs, *The Disengagement Plan—General Outline*, 18 April 2004, p. 1, <http://www.mfa.gov.il/MFA>.

2. Sari Hanafi, "Spacio-cide: Colonial Politics, Invisibility and Rezoning in Palestinian Territory," *Contemporary Arab Affairs* 2, no.1 (2009), p. 118.

3. Gaza has been enclosed in various and increasing ways since the 1950s. For example, it was during the first intifada that the fence around the Strip and the closure and pass system first emerged. After Oslo, Israel intensified spatial controls through checkpoints and stricter policies on movement within and outside of Gaza. One must equally consider

others' roles, such as the Mubarak regime's closing the Rafah border crossing and building an underground wall on its border with the Strip, the compliance of Western governments to largely let Israel do whatever it wants with Gaza, and the PA's political marginalization of Hamas and Gaza.

4. Darryl Li, "The Gaza Strip as Laboratory: Notes in the Wake of Disengagement," *Journal of Palestine Studies* 35, no. 2 (2006), p. 39.

5. PA president Mahmud Abbas himself recognized the changed, high-tech nature of the occupation in 2005, when he stated: "The Israeli occupation . . . reaches the earth and the sky, through

the occupation and control over frequencies in Palestine, the imposing of obstacles on the development and growth of [the technology] sector, and deprivation of our people of live transmission in telecommunications and information technologies." Mahmud Abbas, World Summit on the Information Society, Tunis, Tunisia, 7 November 2005 (author's translation).

6. On high-tech surveillance and control mechanisms, see "The Israeli Arsenal Deployed against Gaza during Operation Cast Lead," *Journal of Palestine Studies* 38, no. 3 (2009), pp. 175–91; Yaakov Katz, "IDF Unveils Upgrades to Gaza Fence," *Jerusalem Post*, 3 March 2010, <http://www.jpost.com/Israel/Article.aspx?id=170041>; Israel Ministry of Foreign Affairs, *Agreed Documents on Movement and Access from and to Gaza*, 15 November 2005, <http://www.mfa.gov.il/MFA>. Attention is often focused on times of heightened violence (such as Operation Cast Lead) and what Israel calls its "smart border." As I suggest, these are neither unique to military operations nor to the "border" around Gaza. Furthermore, "the military and police technologies developed and deployed by Israel carry in them the logics of colonialism, apartheid and occupation that guided their development." Jimmy Johnson, "Fragments of the Pacification Industry: Exporting the Tools of Inequality Management from Israel/Palestine" (Jerusalem: Alternative Information Center, February 2011).

7. See Neve Gordon, *Israel's Occupation* (Berkeley: University of California Press, 2008); and Adi Ophir, Michal Givoni, and Sari Hanafi, eds., *The Power of Inclusive Exclusion: Anatomy of Israeli Rule in the Occupied Palestinian Territories* (New York: Zone Books, 2009).

8. I mean material in terms of physicality and in the Marxist, economic sense.

9. See Ziyad Lunat, "The Palestinian Hidden Transcript: Domination, Resistance, and the Role of ICTs in Achieving Freedoms," *Electronic Journal on Information Systems in Developing Countries* 37, no. 1 (2009), pp. 1–22; Makram Khoury-Machool, "Palestinian Youth and Political Activism: The Emerging Internet Culture and New Modes of Resistance," *Policy Futures*

*in Education* 5, no.1 (2007), pp. 17–36; and Anat Ben-David, "La Palestine et ses frontières virtuelles 2.0: Du 'non-lieu' à l'espace généré par les utilisateurs," *Réseaux* 159, no. 1 (2010), pp. 151–79. As a consequence of this liberatory logic, it is presumed that high-tech can positively contribute to economic growth and state-building; see for example World Bank, *West Bank and Gaza Telecommunications Sector Note: Introducing Competition in the Palestinian Telecommunications Sector*, Report No. 42987 (Washington, DC: World Bank Group), [http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2008/03/20/000333037\\_20080320052257/Rendered/PDF/429870WP0GZ0Te10Box327342B01PUBLIC1.pdf](http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2008/03/20/000333037_20080320052257/Rendered/PDF/429870WP0GZ0Te10Box327342B01PUBLIC1.pdf); Rami Wihaidi, *The Palestinian ICT Sector. . . A Three-Year Outlook. . . Based on Economic Indicators* (Ramallah: PITA, May 2009), [http://www.lacs.ps/documentsShow.aspx?ATT\\_ID=2181](http://www.lacs.ps/documentsShow.aspx?ATT_ID=2181); Khalid S. Rabayah, Sami Awad, and Naser Abdel Kareem, *Palestinian ICT Market Liberalization: Economic Analysis and Future Roadmap* (Ramallah: PITA, January 2008), <http://www.pita.ps/newweb/etemplate.php?id=120&x=2>; and Ministry of Telecommunications and Information Technology, *National Strategy for Information and Communications Technology and Post in Palestine: 2011–2013* (Ramallah, 2010; in Arabic). For a critique of such liberatory perspectives, see Helga Tawil-Souri, "Move Over Bangalore. Here Comes . . . Palestine? Western Funding and 'Internet Development' in the Shrinking Palestinian State," in Paula Chakravartty and Yuezhi Zhao, eds., *Global Communications: Toward a Transcultural Political Economy* (Boulder: Rowman & Littlefield, 2007), pp. 263–84.

10. The most famous is the Gaza Youth Breaks Out group, which published its first "manifesto" on a blog in December 2010, and has since garnered wide attention on- and off-line. See <http://gazaybo.wordpress.com/>.

11. Wikileaks Cable, "09TELAIV936, CODEL KYL's MEETING WITH PRIME MINISTER NETANYAHU," 28 April 2009, <http://cablegate.wikileaks.org/cable/2009/04/09TELAIV936.html>.

12. See Alexander R. Galloway, *Protocol: How Control Exists after*

*Decentralization* (Cambridge: MIT Press, 2004); Ronald J. Deibert, "The Geopolitics of Internet Control," in Andrew Chadwick and Philip N. Howard, eds., *Routledge Handbook of Internet Politics* (London and New York: Routledge, 2009), pp. 323–36.

13. In the case here, the threads between state and private interests in Zionist land grabs—rooted in a complex fabric of regulations, militarization, and territorial settlement—have been and continue to be strongly intertwined, although the process is driven by the state apparatus. Enclosure is also a "low-tech" process: see Gary Fields, "Landscaping Palestine: Reflections of Enclosure in a Historical Mirror," *International Journal of Middle East Studies* 42 (2010), pp. 63–82; and Helga Tawil-Souri, "Colored Identity: The Materiality and Politics of ID Cards in Palestine/Israel," *Social Text* 107 (2011), pp. 67–97.

14. Sara Roy's argument of the de-development of Gaza is as relevant today as it was more than twenty years ago; see Sara Roy, "The Gaza Strip: A Case of Economic De-Development," *Journal of Palestine Studies* 17, no.1 (1987), pp. 56–88; and "De-Development Revisited: Palestinian Economy and Society Since Oslo," *Journal of Palestine Studies* 28, no. 3 (1999), pp. 64–82.

15. See Raja Khalidi and Sobhi Samour, "Neoliberalism as Liberation: The Statehood Program and the Remaking of the Palestinian National Movement," *Journal of Palestine Studies* 40, no. 2 (2011), pp. 6–25, for a critique of the PA's neoliberal policies (focused on the West Bank).

16. Dan Schiller, *Digital Capitalism: Networking the Global Market System* (Cambridge: MIT Press, 1999).

17. See James Boyle, "The Second Enclosure Movement and the Construction of the Public Domain," *Law and Contemporary Problems* 66, no. 33 (2003); James Boyle, "Fencing Off Ideas: Enclosure and the Disappearance of the Public Domain," *Daedalus* 131, no. 2 (Spring 2002), pp. 13–25.

18. Since 2007, Hamas has established its own Ministry for Information and Telecommunications in Gaza. But Hamas inherited the telecommunications infrastructure as was originally

allowed to be developed by the PA and has not changed ownership, economic, or legal policies.

19. Darryl Li in "Gaza Strip as Laboratory" suggests that Gaza be thought of as a model "exportable" to emerging Gaza Strips in the West Bank, such as Qalqilya and Hebron. My view is that since the Oslo accords, and more so since "disengagement," the Israeli regime has deployed different territorial approaches in the West Bank and the Gaza Strip. In general, the West Bank remains a space physically and technologically infiltrated by Israeli interests, which Israel shows no desire to relinquish any time soon. The Gaza Strip is on the outskirts of Israeli territorial expansion, a hermetically sealed and marginalized single enclave in which Israel has no interest.

20. By the legal realm, I mean policies imposing limitations on the kinds of equipment permitted and limiting the kind of infrastructure, often according to the Oslo accords. By architectural, I mean within the physical equipment itself, in that all networks have software and hardware architectures, and territorial decisions such as where equipment is permitted.

21. *PALTEL Annual Report* (2001), <http://paltel.ps/index.php?lang=en&page=F1136677128>; Israel Ministry of Communications, *Telecommunications in Israel 2008* (2008), <http://www.moc.gov.il/139-en/MOC.aspx>; Israel Central Bureau of Statistics, *Israel in Statistics 1948–2007* (2008), <http://www1.cbs.gov.il/reader>.

22. "The Peace Process," *Journal of Palestine Studies* 25, no. 2 (1996), pp. 123–37.

23. Oslo 2, Annex III, Article 36, *Israeli-Palestinian Interim Agreement on the West Bank and the Gaza Strip*, 28 September 1995.

24. Oslo 2, Annex III, Article 36, D.2; emphasis added.

25. For critiques of the PA's neoliberal policies, see Khalidi and Samour, "Neoliberalism as Liberation"; Adel Samara, "Globalization, the Palestinian Economy, and the 'Peace Process,'" *Journal of Palestine Studies* 29, no. 2 (2000), pp. 20–34.

26. PALTEL's largest investor and shareholder is PADICO, the largest Palestinian for-profit organization, both of which have close ties to one



particular family. The official policy of the PA was to engage the private sector in all operational aspects of telecommunications, while maintaining the role of policy-making and regulatory monitoring within the Ministry of Post and Telecommunications (restructured as the Ministry of Telecommunication and Information Technology (MTIT) in 2004). *Law No. 3 for the Year 1996* vests ownership in the PA and provides the MTIT the right to establish, operate, and manage telecommunication networks. It also allows the Palestinian Legislative Council to grant concessions to public network operators and entrusts the ministry to issue permits to operate private networks. The technical details of the licensing agreements of PALTEL were handled by MTIT, but PALTEL's corporate structure and limits of its (monopolistic) activities were agreed upon by Arafat, Arafat's chief economic adviser, and influential private-sector players, which included the owners of PADICO and PALTEL. A new telecommunications law was drafted by the MTIT in 2005 (among other objectives it sought to establish an independent regulator and increase competition), but by 2007, plans were discontinued due to the change of government, Hamas-PA tensions, and consequent "restructuring" of foreign aid. By 2009, there were effectively two MTITs, one in the West Bank and one in Gaza, operating independently from each other, but both following a neo-liberal agenda.

27. From the day that it was handed over, Palestinian telecommunications privatization was a *fait accompli*. The infrastructure was officially handed over to PALTEL on 1 January 1997. Between September 1995 and January 1997, the PA contracted with the Canadian firm Nortel to build and maintain the telecommunications network.

28. Quoted in Ilene Prusher, "Palestinians Sprint to Break Israeli Grips on Phone Lines," *Christian Science Monitor*, 10 August 1996.

29. Jawwal became available in the West Bank in October 1999. Personal interview, Jawwal, 4 July 2005.

30. For more on cellular telephony, see World Bank, *West Bank and Gaza Telecommunications Sector*

*Note*; Arab Advisors Group, *Palestine Telecommunications Market Indicators and Projections* (Amman: Arab Advisors Group, 2008).

31. For an interesting comparison, one can consider the voluntary "digital enclaves" created online and through "Kosher cell phones" by the Hassidic community in Israel; see Heidi A. Campbell and Oren Golan, "Creating Digital Enclaves: Negotiation of the Internet among Bounded Religious Communities," *Media, Culture & Society* 33, no. 5 (2011), pp. 709–24; and Heidi A. Campbell, "What Hath God Wrought? Considering How Religious Communities Culture (or Kosher) the Cell Phone," *Continuum* 21, no. 2 (2007), pp. 191–203. In drawing on the history of land and digital enclosure however, I am using "enclosure" to denote an enforced process.

32. Oslo 2, Annex III. One can calculate the maximum number of subscribers simultaneously capable of using the network (120,000) before loss of signals, dropped calls, and busy signals based on the 4.8 MHz at 900 MHz range awarded to Jawwal.

33. William J. T. Mitchell, *City of Bits: Space, Place, and the Infobahn* (Cambridge: MIT Press, 1995), p. 17.

34. Oslo 2, Annex III, Article 36, D.3d.

35. Eyal Weizman, "Lawfare in Gaza: Legislative Attack," *OpenDemocracy*, 1 March 2009, <http://www.opendemocracy.net/article/legislative-attack>.

36. Personal interview, MTIT Minister, 12 January 2006.

37. "Interview with Saad Al-Barrak, Zain CEO," *Global Telecoms Business*, 1 March 2009.

38. "Internet, Phone Service Restored in Gaza" *Ma'an News Agency*, 11 August 2011, <http://www.maannews.net/eng/ViewDetails.aspx?ID=412107>.

39. Personal interview, PALTEL, 5 July 2005.

40. Personal interview, PALTEL, 7 July 2005.

41. Samuel Katz, *The Hunt for the Engineer: The Inside Story of How Israel's Counterterrorist Forces Tracked and Killed the Hamas Master Bomber* (Pompano Beach, FL: Lion Press, 2002).

42. Since Israeli market liberalization, PALTEL has "shopped around" different

Israeli providers. In 1998, for example, it used Golden Lines for international traffic. By 2004, it switched back to Bezeq. Changes are driven by cost and “agreeable” contracts between the two parties.

43. Telephone interview, PALTEL, 6 May 2010.

44. Andrew Barry, *Political Machines: Governing a Technological Society* (New York: Athlone Press, 2001).

45. Karzys Varnelis and Anne Friedberg, “Place: Networked Place,” in Karzys Varnelis, ed., *Networked Publics* (Cambridge: MIT Press, 2008).

46. A term the Israeli apparatus has used to describe Gaza; Israel Ministry of Foreign Affairs, *Agreed Documents on Movement and Access from and to Gaza*, 15 November 2005, <http://www.mfa.gov.il/MFA>.