

Poor Images, Ad Hoc Archives, Artists' Rights: The Scrappy Beauties of Handmade Digital Culture

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Case studies of media artworks and collections in the Arab world focus on two factors that arise from uneven access to media technology. First, the informal media economy relies on retrofitting, bootlegging, and creative making do. The beauty of many media artworks arising from this economy lies not in an isolated perfection, but in the material and energetic connectivity of perceptible human tinkering and laboriously human-built archives. Second, most media images in circulation are low resolution, glitchy, or otherwise "poor." This audiovisual poverty draws attention to the patterns of circulation and invites a critique of the ideologies implicit in media compression. These artworks and archival practices draw attention to the agency of individuals, artists' organizations, and archival materials themselves. At the same time, many organizations go to great lengths to respect the rights of the artists whose work they manage, putting "propriety rights" above property rights.

Keywords: media art, informal media economy, Arab media organizations, archives, media compression, piracy, artists' rights

Media productions in poorly infrastructured parts of the world make it clear that media convergence is an idealist fantasy that almost nobody lives in practice. As I will show, cultures of media bricolage are more real than high-end media practices—that is, they more forcefully unfold the extensive materiality and specificity of the world than do high-end media practices. Thus, if there is a global digital culture (the question of this special issue), it is one of tinkering, bootlegging, waiting (e.g., for media to download or render), and making do. My case studies examine media art and archives in the Arab world, where artists, hackers, and tinkerers deal inventively with the uneven access to new technologies. I must stress that, although my case studies draw on the scrappy side of Arab independent media production and archiving practices, Arab countries also host successful high-end film and media production; I do not want readers to get the impression that all Arab cinema and media is raw and only quasilegal.

These caveats stated, the scrappy beauties of Arab media practices teach us a great deal about the norm of low-quality media and its attendant aesthetics, the perceptible labor of human tinkering, and the creativity of informal media archives. All of these rely on practices of remediation that, far from seamlessly "converging," make their analog, physical, and historical sources abundantly clear. This essay

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examines a few media arts organizations in Egypt and Lebanon that I visited in spring 2016, and a few artworks that explore the materiality of the circulating image. Many more of them appear in my book *Hanan al-Cinema* (Marks, 2015): organizations from early video workshops in Lebanon, to independent documentary training in Syria, to Super-8 workshops in Cairo's Cinmathèque and at the Cinémathèque de Tangier, and enough videos celebrating archival media, glitch, and compression to fill two chapters. Many of the organizations, as members of the Modern Heritage Observatory or adherents of Pad.ma (discussed below), contribute to a sophisticated discourse of unofficial archiving. Their practices discredit or deconstruct corporate and state archives, networks, and surveillance systems, drawing attention instead to the agency of individuals, artists' organizations, and archival materials. At the same time, many organizations go to great lengths to respect the rights of the artists whose work they manage, in an illuminating example of putting "propriety rights" above property rights. In these ways, Arab media artists and archivists make visible the processes whereby material life is distilled into information, which in turn is expressed in perceptible form. From their practices emerge inspiring forms of agency and ideas of beauty and justice that resonate with other scrappy practices around the world.

Convergence Ideology Loses to Connected Singularity

Media convergence can be defined as the way in which digital platforms minimize differences between media at the levels of production, distribution, consumption, and archiving. Early digital media scholars, believing mistakenly that data is immaterial and bracketing corporate interests, argued that digital platforms remediate all former media into one mercurial megamedium, as when, in 1986, Friedrich Kittler predicted that "a total media link on a digital base will erase the very concept of medium" (Kittler, 1999, p. 1) and when, in 2004, Mark B. N. Hansen referred to the digital image's "total material fluidity" (2004, p. 31). Many media scholars have retreated from these notions, but the idea that convergence is a possible and desirable goal lingers on, resting on a notion that digitization allows more freedom (Fetveit, 2007). Media convergence ideology elides the vast variety of actual media practices and upholds the ideal platform as the norm (Dwyer, 2010). It ignores that proprietary differences among media mean that "convergence" can occur only on a single, up-to-date, well-supported corporate platform like the Google or Apple "ecosystems" (Cunningham & Silver, 2013).

Media convergence ideology fails abjectly in poor parts of the world. Where Paul Virilio argued that technology produces simultaneity, Brian Larkin (2008) aptly corrects this notion for the Nigerian context: "As the speed of Nigerian life increases, so does the gap between *actual* and *potential* acceleration, between what technologies *can* do and what they *do* do" (p. 235). Similarly, given poor electrical grids and uneven Internet access in Cairo, Beirut, Baghdad, Gaza, and other Arab cities, a media maker or user endures minutes and hours of frustration while trying to upload or download a file, render a video, or "surf."

Learning from the artisanal practices of Arab media artists, I share the view of convergence critics like Wanda Strauven (2013), who appreciates the singularities that turn up in a media archaeology and argues that media artists are best positioned to discover them. Her inspiration is Siegfried Zielinski's Foucauldian "anaeology," which favors the singular fragment over the seamless media history (Zielinski, 2006.). I share this appreciation of singularities, which not only emphasizes the materiality and

historicity of all media but also draws attention to the heroic efforts of artists and amateur archivists to find and assemble artifacts of their cultural past.

Moreover, analyzing the singular artifact can call attention to historical and material connections. My method of *enfolding-unfolding aesthetics* pays attention to what is hidden from perception or knowledge by arguing that it is not absent, but implicit—implicate, or enfolded. Informed by Deleuze's attentive deconstruction of Leibniz in *The Fold*, as well as by Islamic Neoplatonist and Shi'a philosophy, enfolding-unfolding aesthetics argues that what is not apparent exists in an implicate form, and that it is possible to draw it out or unfold it (Marks, 2014, 2016). I argue that what arrives to our perception consists of some aspect of the world that has been in some way selected, filtered, and encoded, by forces that are often explicitly algorithmic. Thus, we need to analyze the image in light of the filter that produced it to get a sense of the source from which it arose. A grand example is the way history is written by the victors: This writing is a filter, to which we can compare what we perceive to get a sense of what might have been omitted. In a simpler example relevant to this essay, a video compressed using the MPEG codec gives us a sense of the original, if we compare the images we perceive with the software that compressed them.

Enfolding-unfolding aesthetics emphasizes that you can start with an image at any stage in its circulation and trace its history—unfold where it came from. In enfolding-unfolding aesthetics, mediation does not separate things from their material and physical origins, but creates connections between the origins and the receiver. As the image travels in time and space, passing through the hands of users, it collects noise, interference, and more information. A receiver can reach through the noise and layers of encoding to unfold the material and historical sources of media images. Enfolding-unfolding aesthetics invites us to define beauty as that which reveals and intensifies connections. Thus, the scrappy beauties of the media practices and artworks I discuss below arise from the ways in which they reveal the history of how they came to be—their manners of unfolding the world from their singular points of view. The connections they reveal are physical—that is, both material and energetic. They cannot be reduced to matter alone but also must be appreciated in energetic terms such as affect, intensity, or caring.

Creative Tinkering in the Informal Media Economy

The artists and media art organizations on which this article focuses are immersed in a gray media economy, within which they work to generate their own rules for fair and appropriate dealing. Again, their position is not so different from that of artists and art organizations in wealthier places, who also work with limited means on the margins of the for-profit world. What Arab media art practices highlight is the materiality, creativity, and fragile, but sustainable beauty of starting in the middle, working with available technologies and media of variable legal provenance.

Official media delivery systems elide the labor involved in building and maintaining media platforms. The platform is supposed to be invisible to people who can afford to buy new hardware and software with warranties and who have access to customer support. Even this ideal scenario is never the case, as anyone knows who's spent time in customer-support hell or struggled with that tangle of cables and jerry-rigged connections under the desk or behind the TV. Woe betide those who try to watch and

listen to media on “obsolete,” that is, unsupported, platforms, such as audiocassettes, VHS video, and now DVDs.

Telecoms, media technology corporations, eyeball-grabbers like Facebook and Instagram, and metastasizing network-reliant companies like Amazon and Google—companies Jaron Lanier (2013) calls “siren servers,” since they succeed by owning servers more powerful than those other companies can afford—seduce consumers with dreamy visions of instantaneous access to high-speed, high-quality media and the heavenly notion that data rests in “clouds.” Scholars continue to drill away at de-reifying these appealing myths by drawing attention to the physicality, legal or a-legal status, and quirks too singular to reify that characterize all media infrastructures. For example, Andrew Blum (2013) documented the labor and individual expertise required to maintain the Internet’s physical connections of underground cables, as well as the human bonhomie necessary to negotiate connections between proprietary servers, in the world’s best-connected country, the United States. Nicole Starosielski’s (2015) ethnographic study of the world’s 223 subaquatic cable systems not only negates the fantasy that most communications happen in the sky but also emphasizes the social relations in island communities from which undersea cables are laid. Those delicate cables, “a few brittle fibers the width of a few hairs” (Hu, 2015, p. x), are the Achilles’ heel of the Internet in Tung-hui Hu’s prehistory of the so-called cloud, or remote networked server. Hu points out that the cloud exemplifies what computer scientists call virtualization, turning real things into logical objects (chapter 2). Of course, Marxists would call this rhetorical gambit reification, because it dematerializes the data and divorces it from the material, physical and intellectual processes and actors that produced it—from writers of computer code to the Chinese workers Hu mentions, who grow sick from disassembling toxic discarded tech commodities.

Even in overdeveloped countries, networks, software, and playback and storage hardware are delicate and rely on human agents to build and maintain them. Stephen Graham (2010) pointed out that city dwellers around the world rely on constant infrastructural improvisation and “a vast and hidden economy of repair and maintenance” (p. 10) for infrastructures to actually function. Whereas Susan Leigh Starr (1999) noted that infrastructure becomes perceptible on breakdown, Graham pointed out that for a billion urbanites, infrastructural precarity is profoundly visible and improvisation constant. This situation does not characterize life only in low-GDP countries; Graham noted the increase in the United States between 2000 and 2010 of the number of people who work in installation, repair, and maintenance. Because government services, private companies, and individual investments all affect the quality of communications infrastructures, it is rarely accurate to attribute strong or weak infrastructures to entire countries. Luxury and precarity coexist almost everywhere, varying from neighborhood to neighborhood in Beijing, New Orleans, Mumbai, and the cities I study here, Beirut and Cairo, as well as, of course, in rural areas around the globe.

For people making and using media technologies in ill-infrastuctured neighborhoods, cities, and sometimes entire countries, the myth of platform transparency comes crashing down. Slightly obsolete, second-hand, and unsupported by customer service, media technologies in such places require constant care and maintenance. People using secondhand media technologies take as normal the breakdowns, incompatibilities, and long periods of waiting that the better-heeled are taught to reject. As a result, the

poor-tech users have a more materially accurate understanding of media technology in general. Experts arise in tinkering, retrofitting, repairing, and making do.

Informal media economies are also everywhere; as Ramon Lobato and Julian Thomas (2015) pointed out, even wealthy countries in the bosom of capitalism that apply the rule of law rely on gray media economies, for example, in media companies' reliance on user-generated content and incorporation of independent software. But in the less regulated parts of the world, where big-media hardware, software, and networks arrive secondhand for all but the wealthy, the many manners of DIY, making do, hacking, and the gray economy are even more evident. Once you suspend the idea that piracy is theft, you can appreciate the many ways in which piracy creates new economies and new means of production (Lobato, 2012). Scholars of the global politics of bootlegging demonstrate that global media audiences are not only consumers but also active makers when they remix, bootleg, and hack media works of local and international origin (e.g., Baumgartel, 2015; Eckstein & Schwartz, 2014; Lobato & Thomas, 2015; Navas, 2012; Sundaram, 2009). My examples from Arab countries also find plenty of company in worldwide practices of circulating bootleg and low-fi media to circumvent censorship and surveillance.

Libertarians and Marxists celebrate piracy for its resistance to intellectual property laws that serve corporations. However, as scholars of minority and third-world piracy and hacking point out, these righteous stances overlook the pleasure and satisfaction that pirates and tinkerers derive from what they do (Liang, 2011; Lobato, 2012). Ron Eglash (2009) uses the term "oppositional technophilia" for minority groups' practices of hacking received technologies. Like Kodwo Eshun (2004), Eglash identified in critiques of these practices, a romantic desire to have ethnic minorities remain authentic and "real," leaving technical innovation in the hands of media corporations and academic institutions. As Lawrence Liang (2011) argued, piracy encompasses not only access to knowledge but also fun and pleasurable consumption. Similarly, Dan Gao (2014) advocated for the cinephilic side of piracy in China. In Arab countries, as in many other places, people bootleg media not only to avoid paying but also because the works are not available any other way, so the satisfaction of access is its own reward. Creative hacks start in places where access to proprietary media is impractical or impossible. Larkin's 2008 account of technological tinkering in Nigeria and Gabriel Menotti Gonring's (2014) in Brazil map closely to those in many Arab countries.

A couple of lovely projects metonymize the Arab creative hack. In *Gaza 36mm*, a documentary of remarkable formal complexity, Gaza filmmaker Khalil Al-Mozian (2012) documents the lost movie theaters of Gaza and with them the disappearance of secular public culture. Al-Mozian and his cinephile artist friends "Tarzan" and "Arab" assemble a movie projector out of a disassembled bicycle so that they can watch their beloved 35 mm, and they build a small ciné club so that Gazans can watch movies together on the (relatively) big screen. In Egyptian artist Magdi Mostafa's 2014 work *The Surface of Spectral Shattering*, a 600-square-meter installation, a network of pulsing, interconnected LED lights produce a map of Cairo by night, sonified as deep tones for the total energy of the light and tinkling high pitches for individual lights. With 10,000 LED lights sewn in place at irregular intervals and 23,000 hand-soldered electric connections, *Spectral Shattering* draws attention to its labor-intensive materiality, underscores the manual tinkering required to keep a complex system running, and reflects on the politics of electricity in Cairo (Marks, 2015; Townhouse Gallery, 2014). Also in Cairo, the media art organization Medrar for

Contemporary Art held the Open Lab Egypt workshops, teaching artists and tinkerers to hack computers, write code, and build digitronic artworks. In 2013, artists developed the Hipster phone, built of salvaged materials, sprouting wires, and cabinet-sized. As Medrar (2013b) described it, it is "a smartphone that can fit in your living room, where everything you need is within arm's reach. It's reliable, built with decades-worth of true and tested technology" (para. 4). The Hipster phone can indeed take a photo and upload it, in a cheeky DIY aesthetic that makes fun of commercial culture's fetish for streamlining.

In the Arab countries that are the subject of this study, makers have plenty of opportunities to learn high-end media production, usually for a hefty fee and for commercial purposes. But it is the scrappy beauty of low-end media training that draws my attention, for these organizations emphasize not polish, but accessibility, and they inculcate a spirit of creativity and collaboration. "Open Lab Egypt," the organizers wrote, "exists to counter the prevailing culture that infuses competition and intellectual possessiveness by proposing an alternative lifestyle of collaboration along with inducing willingness and ability to experiment and create" (Medrar, 2013a, para. 1). That spirit rises from a long-held awareness among Egyptian alternative media educators that young people need independent tools for thinking and making. In Egypt for the last 40 years, a "catastrophic" education system based on rote learning has been turning out graduates with "zero ability to equip themselves to grow," says Ranwa Yehia (personal communication, May 6, 2016) of the Arab Digital Expression Foundation. ADEF, based in Muqattam City, Cairo, advocates for freedom of expression and open-source software. Yehia and Ali Shaath founded the organization in 2005; Maysara Abdulhaq joined in 2009, and Kinda Hassan in 2012.

ADEF has trained half a generation in the use of appropriate technology for free expression and the production of an Arabic critical public sphere. ADEF organizes summer camps that each year train 60 to 75 teenagers from seven Arab countries in digital and analog media production, from video making and web production, to poster making, to games, analog and digital; and in critical thinking and free self-expression. The teens learn open-source software and write Arabic contributions to Wikipedia. The camp is modeled on the Arab Computer Camps, of which Shaath was an alumnus and which, from 1984 to 1994, trained thousands of Arab children in basic computer languages in a setting that "promoted Arab culture and Palestine consciousness" (Seikaly et al., 2013, para. 8): Many of the camps' graduates became tech-savvy activists. ADEF training has similarly reverberated as students passed on their skills. ADEF member Abdulhaq recounted to Laura Cugusi that one of ADEF's IT experts "quit and started organizing itinerant IT training in rural Egypt travelling with a bike" (Cugusi, 2014, p. 6).

ADEF has also built an exemplary online management system using open-source tools (Cugusi, 2014). All these years of critical media education and developing accessible media resources, initiated by ADEF and disseminated widely, fed the grassroots of Egypt's 2011 Tahrir revolution. As Yehia says, "ADEF was suddenly providing resources for the revolution. They had a huge infrastructure in place. Kids they trained were super well equipped" (R. Yehia, personal communication, May 6, 2016). ADEF embraces the free and anonymous use of its online archive: "You will never know who used it and how it was used" (R. Yehia, personal communication, May 6, 2016). Users are protected; but as we will see, openness can make a media archive and its participants vulnerable.

Laboriously Human-Built Archives

There is an assumption, at least in overdeveloped corners of the world, that everything is available online—somewhere on YouTube, say. That's not the case. The oft-stated Borgesian anxiety that the digital archive is becoming a map the size of the territory does not hold true anywhere. Moreover, the notion that these images are virtual, immaterial, rootless, free-floating copies is simply incorrect. All archives, including digital archives, are physical.

In Arab countries, given the state's incapacity to produce and maintain archives, its unwillingness to make archives available to the public, its bypassing of aspects of heritage that are important to citizens (Mejcher-Atassi & Schwartz, 2012), and in some cases its desire to monitor the ways in which citizens use archives, individuals and organizations are working to produce their own archives of all sorts of artifacts. While I was working on *Hanan al-Cinema*, I learned that a lot of Arab organizations that exhibit and support media art were gradually or suddenly finding themselves in possession of sprawling collections of rare works in multiple formats with varying degrees of legal access, maintained on multiple platforms. Few of them were in the position to become formal archives, given the uneven quality, legality, and organization of their collections. Some, including the Cinémathèque de Tanger and Metropolis Cinema in Beirut, are members of the Modern Heritage Observatory, a network of Arab organizations committed to preserving the region's modern cultural heritage. Others follow the model of online video archive Pad.ma, Public Access Digital Media Archive.

Pad.ma was founded by Mumbai media art collective CAMP, Berlin collective 0x2620, and the Alternative Law Forum in Bangalore, of which Liang is a member. They advocate an open-source archiving from below, working with available media even if resolution is poor, and prohibiting commercial use, so that users can have maximum access and contribution. Pad.ma allows users to download video files in medium resolution and to circulate, exhibit, and reproduce them noncommercially, provided they credit the maker and respect the original copyright. If a user makes a new work that includes video clips from Pad.ma, it must be submitted to Pad.ma (Pad.ma, 2016). Pad.ma's attitude and archiving platform suit many of the needs of the media arts organizations I discuss here.

A host of questions arise concerning online video platforms, beginning with their necessity. In most Arab countries, mailing videos on hard drives is prohibitively expensive or, for political reasons, impossible, so the ability to upload media has been transformative. Bashir Makhoul (2013) argued that distribution on the Internet is a boon to those especially isolated artists in the Occupied Territories, immobilized by Israeli policing and the apartheid wall. Being able to transmit their work online, Makhoul argued, not only reaches audiences—both around the world and nearby on the other side of the wall—but also constitutes the identity of the Palestinian nation. And we know, after 2011, how crucial video uploading has been for activists in Egypt, Syria, Bahrain, and elsewhere.

Exhibiting and distributing video online requires that files be small enough to store, upload, and stream efficiently (compression); an acceptable similarity between the original and the online version (not too much compression); reliable Internet access and electricity; and a great deal of reliable labor to find, digitize, compress, and upload the movie and maintain the physical collection and platform. Even in

countries not in a state of war, low bandwidth and frequent power cuts make the process of uploading video extremely time-consuming. Every video that you can find online required effort and sweat from someone, somewhere. That effort and sweat constitute the material links along which you can unfold from the image to its source.

Of course, every uploaded and downloaded video also enfoldes an energy source, such as a diesel generator, hydroelectric dam, nuclear reactor, or burning coal. Video streaming, especially on mobile media, now constitutes one of the planet's significant consumers of fossil fuel and emitters of CO₂. Media users in Arab countries may be slightly more aware than others of online media's environmental impact, given how frequently the power cuts off and the (often) illegal generator kicks in—but this ongoing disaster is otherwise beyond the purview of this essay.

Pad.ma's manifesto "10 Theses on the Archive" urges users to start assembling an archive in the middle, from the data or artifacts at hand, before they get lost or privatized. The villains in this scenario are proprietary "free" platforms like YouTube (owned by Google), Facebook, and Academia.edu, which confiscate the content uploaded to them for their own commercial exploitation. Members of CAMP and 0x2620, in a gesture of visionary generosity, developed the free and open-source media archiving platform pan.do/ra. Pan.do/ra's rich interface allows users to manage large, decentralized video databases and to collaboratively annotate the videos and create other metadata. Flexible and accessible, "a combination of YouTube and Wikipedia," as Ashkal Alwan's tech guru Muhammad Abdallah described it (S. B. Pailian & J. Shokar, personal communication, May 9, 2016), pan.do/ra meets the needs of noncommercial users and certain rights of originators.

In 2009, the Beirut Art Center (BAC) pioneered a system to make its video collection available for researchers at the site. Like most pioneers, it had to redesign the system from scratch, launching a new platform in 2016. The system holds hundreds of art videos from BAC exhibitions, digitized from various original formats to mp4. The archive includes only those works by Middle Eastern artists, a stipulation of Ford Foundation funding and a practical way to limit the size of the archive. Nevertheless, it's a great resource for researchers. BAC also holds documentation of all lectures, performances, and public discussions held there. Dima Hamadeh, assistant director of the BAC, developed the BAC YouTube channel to show one-minute excerpts of performances (personal communication, May 15, 2016).

Hamadeh has a philosophical view of the archive that reflects the Lebanese understanding, since the civil war ended without resolution in 1990, of history as a set of impossible narratives.

It's ingrained in the state discourse that we can't agree on a narrative, and this guides archival practice at organizations like the Arab Image Foundation, Ashkal Alwan, and BAC. Some say we can't have a critical approach to history if we don't have a central narrative. I disagree. (D. Hamadeh, personal communication, May 15, 2016)

BAC's archive shows the history of its construction, having acquired the personal style of each person who worked on it, from attitudes toward permissions, to decisions about formats, to ways of organizing films. I like the human-centered approach that BAC, like most other organizations, takes. It shows that media

convergence, or conforming to platforms and software that allow media to flow smoothly from one platform to the next, relies practically on a huge number of human transactions and personal decisions. Not to mention the problems with the electrical grid: Beirut's constant power cuts not only require video researchers to wait for the system to reboot but also, Hamadeh says (personal communication, May 15, 2016), ruin the computers.

Ashkal Alwan in Beirut holds an audiovisual collection of about 1,500 works, assembled over many years: some donated by artists, some received as submissions or solicited. They originated in many formats, including "obsolete" ones: VHS, mini-DV, audio minidisc, DVD, and digital files in various formats. The librarians at Ashkal Alwan are digitizing the collection and housing it on the open-source pan.do/ra platform. They make a new high-resolution copy of the work and another copy compressed to one-tenth of the original size. Ashkal Alwan is in the process of making the database available online; currently it is available for researchers at the site. Ashkal Alwan has a maximum upload capacity of 8 megabits/second; but library technician Jad Shokar says that frequent Beirut power cuts slow the upload process immensely. Because the power cuts usually happen at night, he will return in the morning to find he needs to restart the upload (S. B. Pailian & J. Shokar, personal communication, May 9, 2016).

Medrar in Cairo holds a collection of more than 3,000 video files, assembled from the submissions to the Cairo Video Festival over the past nine years. The festival team obtained permissions from participating artists, by their agreement to the open call guidelines, to include their works in the Medrar archive. Medrar is in the process of organizing and encoding the files, and their numerous volunteers are scanning the hundreds of DVDs from earlier submissions. Dia Hamed of Medrar (personal communication, May 5, 2016) told me that to compress the thousands of works it takes a day in principle, but a week in practice, due to multiple formats of original files and system failures. It would take a very long time to upload them, since in Egypt upload speed is only 1 megabit/second. Eventually the video collection will be accessible exclusively on Medrar's premises, using the pan.do/ra open-source software; data about the videos will be publicly searchable (D. Hamed, personal communication, May 5, 2016). Meanwhile, Medrar TV, a rich resource documenting a huge variety of cultural events in Cairo and all over the Arab world, has been up and running on YouTube since 2011.

Cimathèque in Cairo is also using pan.do/ra to make low-resolution videos accessible online. Yasmine Desouki, Khalid Abdalla, and Hana Al Bayaty (personal communication, May 4, 2016) told me they intend to integrate artists' rights and hope eventually to share resources with other organizations like Contemporary Image Collective, Townhouse, and Ashkal Alwan. Al Bayaty mentioned a dream that the members of the of Network of Arab Arthouse Screens—a consortium of screening organizations in Algeria, Bahrain, Egypt, Jordan, Lebanon, Morocco, Palestine, Syria, Sudan, Tunisia, and the United Arab Emirates—could collectively invest in a massive server that would make high-quality versions available online. Abdalla suggested provocatively that NAAS members could "become a territory" among themselves to share resources—perhaps a territory with its own laws that supersede international copyright laws.

The moving-image collections I'm talking about hold medium-quality copies of works: a digital file made from a DVD or a VHS tape, for example. The archivists hope that a good-quality copy exists somewhere, normally with the artist; but sometimes there is no better copy than the one in their

collection. Ad hoc archivists also have to deal with the fact that some of the works they hold will be pirated copies. Pad.ma's (2010) thesis "The Direction of Archiving Will Be Outward, Not Inward" argues that piracy constitutes effective archiving for media that are ignored by official archives. Pad.ma draws on Cinémathèque Française founder Henri Langlois' assertion, to the horror of archivists who insist that preservation take priority over exhibition, that films are best archived by showing them. An ethics of care and responsibility informs the ecology of knowledge the manifesto calls "intellectual propriety," which replaces the private goal of intellectual property.

The scrappy archives we're looking at embrace the materialist transparency I advocate in enfold-unfold aesthetics, in that you can start with an image at any stage in its circulation and trace its history—at least in principle. By comparing the image with the filter that generated it (e.g., a codec for digital compression, in the hands of a particular archivist), it is possible to get an understanding, through triangulation, of the source. Using software like pan.do/ra, with its time-based, multiauthored system for annotations, supports the process of unfolding where the video came from and where it is going. Crediting the artist is of foremost importance, but the organizations don't seem interested in tracking use—unlike proprietary platforms, which allow surveillance of users but make it very hard to know an image's trajectory, effectively claiming ownership of their contents by barring access to their sources.

Yet proprietary platforms allow governments to monitor individuals and organizations who use social media sites. During the 2011 uprisings, Facebook led the governments of Egypt, Syria, and Bahrain to activists, many of whom were subsequently jailed, tortured, and killed. For this reason, activist media archives need to be able to disappear. Mosireen, the activist collective that produced and collected thousands of videos documenting the Tahrir uprisings, moved its physical database to an undisclosed location outside Egypt. State terror thus is another important factor in the precarity of media organizations and informal archives.

Government control cripples media art organizations in other ways too. Since the July 2013 coup, the Egyptian government has cracked down on NGOs, artists' organizations, and individuals that cultivate public protest, creativity, or even dialogue. In 2015 Egyptian officials raided the Townhouse Gallery, Cultural Resource/Al Mawred Al Thakafy, Contemporary Image Collective, Cinémathèque, and other Cairo arts organizations, confiscating hard drives and documents and holding individuals for interrogation. ADEF, like Mosireen, has had to curtail its activity since the coup because it has become too dangerous to share user-generated content (Cugusi, 2014). Ali Shaath died abruptly in 2013, aged only 45 (Seikaly et al., 2013). The loss of this visionary cofounder, who was Yehia's life partner, also slowed ADEF's activity. However, Yehia wrote in an e-mail (personal communication, August 31, 2016) that ADEF activities picked up with much higher impact in 2016, "We remain low key to maintain safety." In addition, since 2015 the Egyptian government has kneecapped artists' NGOs, effectively cutting off the foreign funding on which they relied by requiring organizations that receive foreign funding to submit to slow and cumbersome reviews. The purpose of this control—to prevent foreign influence—paints Egyptian alternative media organizations and educators as threats to the state. It has affected almost all media organizations in Egypt. The organizers I spoke to in April 2016 were still reeling from the effects of the new government strictures and were working on ways to survive that include limited commercial applications, crowd funding, and scaling down.

Respecting Artists' Rights

As an advocate for media artists, I resist the radical call of Pad.ma and others to ignore intellectual property. Independent media artists, like musicians, have been the first to suffer from bootlegging. No musician in the Arab world makes a living from his or her recordings. Few media artists do either: partly because their work just doesn't get seen, partly because it gets stolen. I think media artists should get fair distribution and be paid reasonable rental and purchase fees. This insistence would seem to raise a dilemma between remuneration and visibility—that a media artist can either keep work out of circulation, to protect it as a commodity, or make it widely available online, even if it's a low-quality image and the artist doesn't get paid. But there are alternatives, as when video artists simultaneously make their work available for free online, rent and sell it through distributors, and in some cases sell editioned versions through galleries (Hilderbrand, 2012; Marks, 2012, 2015).

These questions require organizations to measure the relative virtues of making movies accessible and ensuring that artists receive recognition and fees. Pad.ma's embrace of piracy as a form of archiving conflicts with most media-art archives' efforts to respect the artists whose works they make available. Each organization has different procedures to prevent piracy of the works they hold, such as putting the videos on an intranet server, accessible only within the organization, or making works available to view in low-resolution versions but not to download. Then if users want to screen one of the videos in public, they need at least to get the artist's permission, and at best to pay a fee. Maybe sometime, as Al Bayaty said, a distribution system will circulate high-resolution videos in an internal network of Arab media art centers. In my opinion, such practices do not reinforce copyright law so much as respect intellectual propriety, by honoring the maker and source of the work. Respecting artists' rights reinforces the material historicity of the archive, connecting images to their source.

Compression: Politics, Materiality, Aesthetics

Hito Steyerl (2012) termed low-resolution, bootlegged images compressed for circulation "poor images." Low-resolution, ugly, and moving fast, "uploaded, downloaded, shared, reformatted, and reedited" (Steyerl, 2012, p. 32), poor images give the lie to the fetishism of high-resolution images made for expensive, up-to-date platforms. They lose in quality but gain in velocity and intensity. Outside of major TV stations and a few first-run movie theaters, a great deal of the media that consumers receive in Arab countries are low quality: bootlegs bought in the market or on the street, peer-to-peer bootlegs, YouTube and other online videos, video blogs, and poor TV and Internet reception. Gray economies give rise to new aesthetics, as bootlegged and compressed media lose quality through scratchy DIY technologies. Larkin (2008), examining homemade bootlegging infrastructures in Nigeria, noticed that audiocassette pirates' practice of stripping cassette covers to more easily dub copies exposed the magnetic tape to the dusty harmattan winds. As Larkin noted of pirated videos, many of these copies are multigenerational dubs, "hallucinogenic" (p. 237) with pulsing colors, smoothed-out features, and bursts of noise. To these aesthetics of analog copying, digital media adds its own scars of workarounds: interference, glitch, and compression. The zebra jags and boxy color bursts of glitch result from a sudden change in voltage in an electrical circuit. Material as can be, glitch "reminds us of the analog roots of digital information, in the disorderly behavior of electrons" (Marks, 2015, p. 253).

In information theory, freedom equals noise. As Claude Shannon wrote in his field-founding 1948 article (subsequently expanded into a book with Warren Weaver, 1949), "Information is a measure of one's freedom of choice when one selects a message" (p. 9). It follows that too much freedom prevents the transmission of the message (Byfield, 2008). Compression-decompression algorithms, or codecs, limit the audiovisual image's freedom. There are scores of codecs out there, each in its own way trying to retain an acceptable perceptible quality while reducing file size, for example by sampling color and approximating motion through key frames. Codecs make aesthetic choices based on expert predictions of what audiences want—as the name Motion Picture Experts Group, MPEG, indicates (Cubitt, 2014; Sterne, 2012). In making assumptions about what receivers want, or are willing to tolerate, codecs behave in an authoritarian, or at least nannyish, fashion. Sean Cubitt pointed out in 2014 that temporal codecs reinforce sameness and prevent appearance of the new, "diminish[ing] the possibility that anything unexpected will occur on-screen, even if it has already been recorded" (p. 250).

Yet compression-decompression algorithms, especially when they start to pile up in oft-transmitted images, also generate a new set of scrappy poetics. Drawing on Shannon and Weaver's information theory, Umberto Eco distinguished between message sent and possible messages received, between actual and virtual. Whereas communication reduces potential in desire to maximize signal, poetics generates potential by sustaining the equivocation of the text (Nunes, 2011). Codecs introduce artifacts, for example by over-enhancing edges and expressing color fields as chunky halos. Like a scratched film, a compressed image indicates that it's been somewhere before it got here. Compression and decompression are marks of handling, signs of the image's history.

Travel-Weary Images' Scrappy Beauties

Many Arab media artists have tacitly or boldly embraced bootlegging—scavenged VHS tapes and digital bootlegs of movies and TV shows that are otherwise inaccessible. Interestingly, artists often deploy analog demagnetization and the artifacts of digital compression as metonymies for the struggle to regain effaced histories and distorted historical knowledge (Marks, 2015, chapter 8). As Chad Elias (2011) noted, "The lack of resolution testifies not only to the translation of images within and across media platforms, but also to a violent process of image dislocation and expropriation" (p. 56).

Working with low and available technologies transforms the perception and embodiment of the user. High-quality, "rich" media platforms, when used as directed, disguise to some degree the materiality of the platform. They permit that feeling of immersion that is often upheld as the goal of verisimilitude. High-quality platforms—such as uncompressed movies watched on a big screen with good sound, lossless recordings played on a great sound system, and subscriber-only networked game consoles—do invite embodied responses. However, these embodied responses are likely to align with the effect desired by the artist or manufacturer. Low-quality platforms, in calling attention to their materiality, disturb the embodied or mimetic relationship to the media work, instead inviting the viewer, listener, or player to mimetically embody their own quirks, jams, and glitches. Gao (2014), studying Chinese films about media pirates, argued that what he calls "pirate cinophilia" achieves the embodied effect of "pirate-eye." Gao suggested that the viewers of pirated movies gain a kind of mimetic sympathy with both the image and

the pirated media that convey it. He adapted Dziga Vertov's concept of kino-eye, the harmonious mutual teaching of human body and camera, and Benjamin's concept of the mimetic faculty, following an argument of Malcolm Turvey (1999), writing:

A pirate's life just resembles the pirated copies he makes a living with, which may contain inherent defects or frauds, with no guarantee of quality. While trying one's best to mend the holes, the pirates still inevitably encounter rupture, anxiety and frustration. (Gao, 2014, p. 139).

Like pirated media, archival films and videos, that is those made of found or appropriated material, draw attention to the material and temporal connections among things separate in time and place. Although compressed, scratchy, glitchy media works lose quality, they gain something in the fact of circulating. This something unfolds in the receiver's body and mind in glitchy, hallucinatory ways. Since the pre-Internet days, the more films gain scratches and videos demagnetize, the more they show where they came from. They become unique, regaining aura, if we take that concept to mean the way an artifact reveals the history by which it came to be. Layers of reformatting indicate a movie's trajectory, for example from 35-mm theatrical film, to home video in NTSC, to PAL video, to digital file, to online platform, with layers of subtitles and user comments added along the way. Low-quality media circulated online also draw attention to the fact that they have traveled a long way and been handled multiple times over: Compression indicates this, as I mentioned, and so does the number of views on sites like YouTube. The viewer becomes a receiver, catching the video as it hurtles along its itinerary and passing it back into circulation.

Also taking inspiration from Vertov, Steyerl (2012) argued that the poor image builds networks and alliances as it travels in clandestine circuits, "visual bonds" among marginalized viewers distant from each other in space and time. In this way a poor, scrappy kind of alliance can arise. Steyerl did not romanticize this possibility, since poor images can just as easily play on people's tiredness and vulnerability. He wrote, "Poor images present a snapshot of affective condition of the crowd" (p. 41), including paranoia, fear, craving for fun. Enfolding-unfolding relations occur in this circulation. When a receiver takes some time to examine and cherish the video that has arrived, that work's history unfolds and connects the receiver to the world the video passed through (Marks, 2015). Even a poor-quality, distracted reception connects the viewer to the trajectory the image took, and includes viewers in a rough, fatigued collective (although, in this essay's gloomy bass drone, the circulation of poor images enriches the corporations that provide their platforms and pumps more CO₂ into the environment).

In *Hanan al-Cinema*, I describe a great many media artworks that make a virtue of the social, political, and aesthetic artifacts that moving images generate as they lose resolution and suffer compression. Here, let me mention a few more works that emphasize the connections the lossy image makes as it circulates in space and time.

To make the installation "I Must First Apologise" in their 2014 exhibition "The Rumors of the World," Joana Hadjithomas and Khalil Joreige rescued thousands of scam e-mails from their spam folders, studied the texts, and sought and cast performers to give them life. The e-mails are those "Nigerian

scams" or "419 scams" in which the writer begs for financial assistance, for example to move a large amount of money offshore. In the installations' life-sized or larger-than-life videos, actors speak these cries for help from Lagos, Palestine, Baghdad, and Georgia, dignifying their voices and inviting a viewer to linger with them. Hadjithomas and Joreige pointed out that e-mail scams, though fictional in themselves, are a truthful symptomology of wars and conflicts, the violence of neoliberal capitalism, and extreme weather caused by global warming (Kholeif, 2015).

The video *Baby Come Home* by the Foundland collective, Syrian artist Ghalia Elsrakbi and South African artist Lauren Alexander (2016), pays homage to Russian artist Olga Lialina's 1996 interactive narrative *My Boyfriend Came Home from the War*. *Baby Come Home* collages multiple media to tell a fictional tale of this decade's young soldiers who abandon their families to join jihadi groups in Iraq and Syria. The story unfolds on the computer desktop of a woman who has lost her son to jihad. Their chat messages show that their worlds gradually cleave. She pleads with him—"habibi, we are worried!" She uploads pictures of his little brother's birthday party, searches videos for a glimpse of him among his new "brethren," and watches a first-person shooter game he might have played. The son's texts are intended to reassure his mother. The son invites her to come live in a flat on the Euphrates and sends animations of what heaven is supposed to look like—one, with a pink unicorn grazing in a blue field, cruelly suggests how young this jihadi is. "He will embrace you when you come / There will be mercy / Together / Forever," the boy types. The son's texts fall silent shortly after he sends a rote suicide text. Much of the heartbreak of *Baby Come Home* lies in its use of the same media objects and bland interfaces that thousands of actual families of jihadis must have used to communicate and to search for their loved ones. They give up nothing; in Shannon's term, they are high in information. The poignancy of the (lost) connection between mother and child is achieved in the specificity of the snapshots she uploads of the house decorated for the birthday party—a plate of heart-shaped waffles, a child smiling in front of a cypress bush—and sonically, in her fingers typing on the keyboard, her mouse clicking the videos as she searches, the "bloop" of received text messages, the "whoosh" of the photos she sends him. While the son is lost in a field of generic information, the mother's search is grounded in physical and embodied specificity.

Sophia Al Maria's (2015) three-screen video installation *Sisters*, based on low-res feeds from WhatsApp and YouTube, creates a moving frieze of women dancing—girls showing off their moves at home, a group of Bedouin women outdoors, belly dancers in a nightclub. Al Maria exaggerates the videos' distortion until the dancers' limber figures are elongated like Botticelli's maidens, clad in pastel pixels, framed in glitchy rainbows. Muffled heartbeats give way to gasps of uncontrollable laughter, metallicly distorted. The title already undoes any feeling of voyeurism, replacing it with a feeling of intimacy and kinship. *Sisters* brings the dancers to the surface of the image, establishing a haptic contact along the journey from the initial recording to multiple transmission and receipt. Al Maria wrote of the work,

These fleeting moments online hold a poignant power to me. It's inexplicable but I think everyone who watches one of these videos slowed down or retextualized outside of a lurid website or a clandestine mobile phone peek feels that. It is contact. (paras. 4, 5)

These artworks, like the laborious media archives I described, demonstrate that mediation does not separate media objects from their material and physical origins, but connects them to their receivers. In terms of enfolding-unfolding aesthetics, a receiver can unfold the historical sources of media images according to the way their algorithmic interfaces shape them. These models permit a broader concept of indexicality as that which performs a connection between source and receiver through a media work.

In all digital media, material life is distilled into information, which in turn is shaped into perceptible form. Often in "rich" media, the form is made to seem to stand alone. What distinguishes the works of scrappy beauty I have been describing is that that resulting form emphasizes and draws power from its material and social bases. Artists, tinkerers, and DIY archivists turn the exigencies of poor infrastructure into assets, including the pleasures of creativity and self-sufficiency. In their make-do and DIY strategies, these artists' and archiving practices carry out a process of unfolding that begins at any point whatever and demonstrate a hard-won, material media connectivity. Even if they had more reliable resources, I don't think they would cease to tinker. Similarly, each precious, scrappy video that the ad hoc archives maintain bears the marks of the archivists' labors: persistently seeking out the work, shelving, protecting, cataloguing, digitizing, compressing, dealing with power cuts and Internet failures, negotiating permission. When a receiver takes some time to examine and cherish the video that has arrived, its history unfolds and connects her to the world it passed through. As Pad.ma's sixth thesis states (2010, subhead 6), "Historians have merely interpreted the Archive. The Point however is to Feel it."

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