ARCHIVAL ROMANCES: FOUND, COMPRESSED, AND LOVED AGAIN

Images have a life cycle that is material, social, and imaginative. Images' materiality constitutes an everyday problem in poorly infrastructured countries, but, as several listeners at "What are the Politics of Material Agentiality?" pointed out, even in wealthy countries there are plenty of media users who fall off the grid. In the work of Arab media artists I study, images' material trajectories are especially evident. Analog demagnetization and lossy digital compression; glitch, error, and artifacts introduced by compression; and layers of formatting draw attention to the trajectories and life cycles of images. Since all these artists are working with a contemporary matrix-based medium, the pixel or raster based electronic screen, I will also show the deep history of images' transformative life cycle in another matrix-based, algorithmic medium: carpets. Like others in places where official image archives are difficult to access, artists value glitch, error, and loss of resolution not only for their own aesthetic interest but also as indications of the labor of love required to access the past. I'll look at Arab media artists who painstakingly amass VHS collections of popular movies and TV shows, in archives that augment in care while they diminish in quality. Other artists draw attention to the new meanings that attach to anonymous images as they travel online, finally to be embraced by the recipient. For Arab media artists, like others in poor countries, every artifact in the archive is precious, even if it is distorted and noisy. At the end I'll explain my concept of enfolding-unfolding aesthetics, to give a sense of how we can unfold compressed and noisy images to get a sense of their travels.1)

The proposal for this excellent workshop stated, "In this workshop we will explicitly ask for the emancipatory, transgressive, utopian potential of material agentiality: What exactly can an artwork's material dimensions do, which dynamics can they set off, what structures can they move in an encounter with a human beholder?" Enfolding-unfolding aesthetics, the theory and method I propose, argues that media works make an intimate connection to the beholder's body and embodied responses, and that this personal reception completes the travels of the archival image. Like my theory of haptic visuality, enfolding-unfolding aesthetics is an implicitly feminist theory, in that it values the material labor

This essay has several points of contact with my forthcoming essay "Poor Images, Ad-hoc Archives, Artists' Rights: The Scrappy Beauties of Handmade Digital Culture" (Marks, forthcoming b).

of embodied reception as a way of being open to the unknown without seeking to master it. Like that theory, enfolding-unfolding aesthetics does not ascribe these capacities only to female spectators; rather, their utopian potential lies in the way all spectators can engage with the world in this manner.

CONVERGENCE: AN IDEOLOGY OF IMMATERIALITY ______ "Media convergence" can be defined as the way digital platforms minimize differences between media at the levels of production, distribution, consumption: e.g. film, video, photography, sound recording. Early on, some media scholars trumpeted the immateriality of digital media, as when Friedrich Kittler wrote in 1999: "a total media link on a digital base will erase the very concept of medium." Many media scholars have retreated from the notion that digital media are immaterial, but the idea that convergence is a possible and desirable goal lingers on and must be critiqued. The notion that digital platforms remediate all former media into one mega-platform, and that they can transcend their materiality is a techno-deterministic ideology that upholds the ideal platform as the norm. It elides the vast variety of actual media practices.

In error theory based in computer practice in the overdeveloped countries, error is celebrated in opposition to the control society (Nunes 2011). Glitch as an aesthetics of failure, as theorized by musician Kim Cascone in 2002 and others since, constitute a materialist critique and critique of totalizing systems. Noise, error, glitch are "counterprotocological" in Alexander Galloway and Eugene Thacker's sense (2007). Errors recognized by programs, e.g. "404 Not Found," are failures subsumed in successful operation of a closed system; all-actualizing errors. But as Nunes points out, uncaptured error refuses to signify, disrupts "cybernetic regime of efficiency and maximum performance" (2011: 13-14).

This abject materiality is salutary in places where the transcendental ideology of convergence is strong. But in unevenly developed countries, like most of the Arab world, control via computers isn't the same issue. Surveillance is more heavy-handed and physical; reminders that computer platforms and networks are prone to error elicits a big "Duh!" People making do with obsolete and bootleg software and hardware; people who rely on internet cafés; those who are in the middle of uploading downloading, or rendering a video when a power cut strikes: they are well aware that glitch and error are the norm.

For people making and using media technologies in poor

countries, the myth of platform transparency comes crashing down. Slightly obsolete, second-hand, and unsupported by customer service, media technologies in poor countries require constant care and maintenance (Larkin 2008). People using second-hand media technologies take as normal the breakdowns, incompatibilities, and long periods of waiting that people in wealthy countries are taught to reject. In this way the poor-tech users have a more materially accurate understanding of media tech in general.

MATERIALITIES OF LOW RESOLUTION, COMPRESSION, MOIRÉ,

AND GLITCH _____ As electronic images travel, they suffer, and this suffering is visible in low resolution, compression, moiré, and glitch. All of these draw attention to the materiality of the support underlying the digital image. Analog video, copied in multiple generations, loses resolution and color accuracy, becoming a pastel blur – an effect some people are quite nostalgic for now. But digital images also lose resolution when they are reproduced, despite rhetoric to the contrary. Resolution diminishes when video is transferred from one system to another, for example from PAL to NTSC. Low resolution shows up when movies shot with consumer equipment or mobile phones are screened on platforms for high-definition video.

Low resolution also occurs because digital media use compression algorithms, to allow images to be transmitted and reproduced more efficiently. Compression algorithms or codecs try to get the best resolution for a given bit-rate; if the bit-rate is low, the image will be more approximate. Compression is an economical way to store and reproduce data by omitting superfluous detail. It is the norm in poor countries where bootlegging is common and bandwidth is slow, but it affects traveling images everywhere in the world. A compressed image loses the depth and quality of the original. Often it exaggerates features that were negligible in the original.

_____ Moiré patterns result when two matrices that don't match up are superimposed, as when an image made in one resolution is imported into another resolution. Where their lines cross, a distracting interference between the matrices emerges. The interference creates a shimmering pattern that is often more interesting than the original image (this thinking is inspired by Egyptian digital artist Kareem Lotfy, Marks 2015: 268-269). Politically, we can observe moiré patterns when two different systems are superimposed. For example, when a colonial government gives way to

a national government, the moiré pattern is the interference between their two bureaucracies. The interference produces artifacts that draw more attention than either of their functions.

Last, glitch is the surge of the disorderly world into the orderly transmission of electronic signals, resulting from a sudden change in voltage in an electrical circuit. Ideally transmission is perfect, but in fact it almost never is. Rainbow colors flare across the pixel screen and weird colorful boxes pop up. Glitch reminds us of the analog roots of digital information, in the disorderly behavior of electrons.

COMPRESSION: POLITICS, MATERIALITY, AESTHETICS

You have probably witnessed the ugly artifacts in many a hastily made transfer from film to digital video, or in the compression of digital video into a smaller file that transfers more quickly. Smooth gradations of tone in the background of a shot transform into chunky halos. Many compression codecs appear to select for edges, in an anti-haptic tactic that assumes most viewers want to see a clear distinction between figure and ground. The result is a halo of edgelike artifacts that shimmer around a figure, filling the space like a swarm of gnats.

Compression draws attention to conventions of codecs, compression algorithms that make aesthetic choices for us. Jonathan Sterne relates that in 1990-91 the MPEG (Motion Picture Experts Group) consortium auditioned codecs for expert listeners. "Through MPEG's listening tests, expert listeners came to represent, in code, an anticipated future listening public" (2012: 25). A compressed image draws attention to these decisions made on a viewer's behalf by others, in a kind of digital-aesthetic neoimperialism.

Nunes points out that if we look to compression's roots in information theory, we discover an interesting relationship between compression and freedom. Information theory measures information, not meaning or knowledge. As Claude Shannon wrote in his field-founding 1948 article, "Information is a measure of one's freedom of choice when one selects a message." Too much freedom is bad, in this scenario, because the message doesn't get through. Umberto Eco's *The Open Work*, drawing on Shannon and Weaver, distinguishes between actual (message sent) and virtual (possible messages received). Eco argued that communication reduces potential in desire to maximize signal, while poetics generates potential by sustaining the equivocation of the text (Nunes 2011).

In information theory, freedom equals noise, too much virtuality. Compression reduces freedom, by transmitting the information that most receivers want. For sure most audiences want that information, not glitch and error that results from electronic flares and spikes. It's a poor comfort to someone watching a bad bootleg, or downloading lo-res media bristling with unintended artifacts, that they are more in touch with the materiality of the infrastructure. They may lose the meaning; but they might make poetry out of the distorted signal.

A DEEP HISTORY OF MATRIX-BASED MEDIA ______ Textiles, the earliest algorithmic artworks, offer interesting precedents for loss of resolution, compression, moiré, and glitch in a matrix-based medium. Weavers are skilled at managing image resolution for different pixel grids. As an example, let's look at the travels of the dragon motif on carpets. The dragon and phoenix motif traveled west from China at least twice: after the Mongol invasions of Islamic lands in the mid-thirteenth century, and during the Mongol-influenced Ilkhanid and Timurid reigns. While the Chinese prototype is very long and sinuous, Safavid painters who designed the carpet patterns adapted the creature, making it a

little shorter and less fluid. Among the animals in combat on the Kashan animal carpet woven in the second half of the sixteenth century, now at the Metropolitan Museum (there's a similar fragment at the MAK in Vienna, fig.1), for example, a shapely, large-eyed green dragon, with yellow spots and three visible tendrils, curves entirely around an ass and bites its neck. By the time dragons appear on early Caucasian carpets, such as this one at the MAK, they

retain the spots, tendrils, bug eyes and twisting body of the Chinese-Persian dragon, but their bodies are angular abstractions. Sometimes the dragon does battle with an equally abstracted phoenix; sometimes it is hard to tell (Marks 2010: 305-313).

_____Compression is one factor in the distortion of the dragon as it moves from Chinese to Persian to Caucasian carpets. Expensive



7/ Figure 1
Detail, dragon carpet, Safavid empire,
Caucasus, 18th Century.

carpets, like those made for the Shah, have the highest thread counts. Lower thread counts economize on detail, requiring a kind of Caucasian MPEG (or DCEG, Dragon Carpet Experts Group!) algorithm for what can be left out.

A kind of moiré pattern is also in evidence. Where Iranian carpets have curvilinear designs, Caucasian carpets are more angular. This is partly because Iranian carpets used asymmetrical knots, Caucasian carpets (like Anatolian carpets) used square knots. So you have one matrix superimposed on another, turning curving lines jagged and giving rise to angular artifacts.

Caucasian carpets are large and complex rugs, not nomad or village products but produced in urban workshops. Two more material and creative forces intervene in the transformation of the dragon. The designers drew cartoons based on their knowledge and imagination. The weavers adapted the cartoons. Indeed most Caucasian carpets are woven from drawings, not knot plans that would specify the number of knots. This gives weavers more freedom and responsibility and allows the pattern to "drift" (Thompson 2003: 287). They are copies of copies of copies, with no slavish attitude toward the original. Kind of like pirate copies, or bootlegs.

BOOTLEG CONTEXTS _____ Outside of major TV stations and a few first-run movie theaters, a great deal of the media that consumers receive in many Arab countries are low quality: bootlegs bought in the market or on the street, peer-to-peer bootlegs, Youtube videos, video blogs, and poor TV and internet reception. The primary case of Arab low-resolution media is the pirate market.

Traveling wrecks the image, as we've seen. Similar to my description above, Hito Steyerl (2012) characterizes the "poor image" as an image that gives lie to the fetishism of high-resolution images made for expensive, up-to-date platforms. Low-resolution, ugly, and moving fast, "uploaded, downloaded, shared, reformatted, and reedited," the poor image is the lumpenproletariat of images. Steyerl aligns the poor image with radicalism of Cuban filmmaker Julio García Espinosa's 1969 manifesto "For an Imperfect Cinema," in that it enables more people to participate in image circulation – though it is no longer necessarily for radical ends.

_____Many artists accept and deploy low-fi aesthetics, embracing the artifacts and glitches that emerge. In *Hanan al-Cinema* I described the works of many artists, including the Egyptian artists Maha Maamoun, Mohammed Allam, and the Lebanese filmmakers Rania Stephan, Riad Yassin, Roy Dib, Walid Ra'ad,

and others, who use scavenged VHS "archives" and bootlegged digital images of popular movies and TV shows that are otherwise inaccessible. Stefan's *The Three Disappearances of Soad Hosni* (2011, **fig.2**) is composed from 78 VHS tapes of Egyptian movies featuring the beloved actress. In the transfer from 35mm to VHS video to digital file there occur layers of compression, distortion, and loss—like the story of Hosni



herself. Analog demagnetization and the artifacts of digital compression become metonymies for the struggle to regain effaced histories and distorted historical knowledge.

Rania Stefan, The Three Disappearances of Soad Hosni (2011). Digital video, color, sound. 70 min

LABORIOUSLY HUMAN-BUILT DATABASES AND ARCHIVES

Given the state's incapacity to produce and maintain archives, or its unwillingness to make archives available to the public, individuals and organizations are working to produce their own archives of all sorts of artifacts. These range from historical documents to bootleg copies of works otherwise unavailable to the public to tools for DIY making, such as manuals. The oft-stated Borgesian anxiety that the digital archive is becoming a map the size of the territory is simply not the case in Arab countries.

Given the many problems with official archives of movingimage media, I focused in *Hanan al-Cinema* on unofficial archives that artists and amateurs build. The recent recovery of films made in the 1960s and 1970s by the Palestinian Film Unit constitutes a dramatic tale of scavenging for archives and constructing an artisanal network. Mohanad Yaqubi recently completed a film about the discovery of this precious film archive, *Off Frame, aka Revolution until Victory* (2016).

In *Hanan al-Cinema* I describe Egyptian artist Mohamed Allam's project *My Nineties* (2013). Lacking access to television stations' archives, which are either proprietary or simply nonexistent, Allam collected about 4000 VHS cassettes from "different scrap stores, random individuals and sellers in the Friday market in Cairo." Among these he identified about 200 that contained recordings of TV shows from the 1990s, recordings that people

made at home with their VCRs. At the Townhouse Gallery in Cairo Allam installed period TVs and VCRs to exhibit his selections of news, drama, comedy, children's programs, music videos, and advertising—the audiovisual heritage of a generation of Egyptians. Some of the videos were then posted to the site of Medrar, the media art organization Allam co-founded.

Audiovisual archives are rare and delicate resources: a great struggle to assemble, marked by image deterioration. Some partial, low-quality archives that work pretty well are those assembled by festivals and exhibitors, such as Ashkal Alwan and the Beirut Art Center in Beirut, the Cinémathèque de Tanger, and the Cairo Video Festival organized by Medrar. The Arab Digital Expression Foundation founded in 2005 by Ranwa Yehia and Ali Shaath and based in Mugattam City, Cairo, advocates for freedom of expression and open-source software. ADEF trains people in manual and digital media, including in summer camps for young people in 7 countries. The organization advocates for freedom of expression and open-source software, and thus teaches Pandora, Open Street Map, Open Biblio and Wiki: they write Arabic contributions to Wikipedia. ADEF member Kinda Hassan told Laura Cagnisi, "Information needs to be accessible to all, so we developed an online management system: logistics, media, and database of participants. If anyone falls out, the information is all there" (Cugusi 2014: 4).

Informal archivists accept that many of the artifacts they collect will be fragmentary, low quality, pirated, and seemingly insignificant. The video archiving platform Pad.ma (Public Access Digital Media Archive) argues for a radical archiving from below, working with available media, disregarding intellectual property issues, so that users can have maximum access and contribution. Pad.ma was founded by Mumbai media art collective CAMP, Berlin collective 0x2620, and the Alternative Law Forum from Bangalore. Pad.ma's manifesto "10 Theses on the Archive" (2010) asserts the necessity of beginning to make an archive in the middle, from the data or artifacts at hand. One provocative 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. The founders emphasize that some of

the most potent videos are the fragments, the refuse, such as surveillance-camera footage: they characterize these as "that which has not yet been deployed." The archive acts here as bottom-feeder, gaining strength on the refuse of capitalist media. An ethics of care and responsibility informs the ecology of knowledge, which the founders call "intellectual propriety," that replaces the private goal of intellectual property.

But 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, Cimatheque, and oher Cairo arts organizations, confiscating hard drive and documents and holding individuals for interrogation. Mosireen, which had uploaded hundreds of videos during and since the 2011 Tahrir revolution, had to transfer its archive outside Egypt for safety. ADEF has had to curtail its activity since the coup, as it has become too dangerous to share user-generated content. State terror thus is another important factor in the precarity of media organizations and informal archives.

_I have to declare that as an advocate for media artists I resist the radical call of Pad.ma and others to ignore intellectual property. I think it's very important that Arab media artists get fair distribution and be paid reasonable rental and purchase fees. This insistence would seem to raise the dilemma between remuneration and visibility - that a media artist can either keep work out of circulation, in order 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, and rent and sell it though distributors, and in some cases sell editioned versions through galleries: Akram Zaatari and Maha Maamoun are two examples. Maamoun told Rasha Salti, "When possible, I believe that artists should push to increase the number of editions of their work; in that sense, to reclaim its ownership. [...] For some reason I feel that spreading the work cheaply and widely should not prevent me from considering it and selling it as a 'limited edition,' though of course that might deter potential buyers. I believe these, the high-quality DigiBETA, and the internet file, are all different forms and qualities of the work, each form having an edition suitable to its form and circuit. Whether this is, or can be made legal - I don't know" (Salti 2012: 29).

EMBODIED RESPONSES — 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, high-quality audio recordings played on up-to-date devices, and legally acquired, glitch-free games—do invite embodied responses, as I and others have long argued. 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, also disturb the embodied or mimetic relationship to the media work. Instead they invite the viewer, listener, or player to mimetically embody their own quirks, jams, and glitches.

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, uncomfortable ways. Since the pre-internet days, the films gain scratches and videos demagnetize, the more they show where they came from. Layers of reformatting indicate a movie's trajectory, for example from 35mm theatrical film, to home video in NTSC, to PAL video, to digital file, to online platform, with subtitles and watermarks added along the way. Low-quality media circulated online also draw attention to the fact that they have been handled multiple times over - how many times is sometimes indicated, for example by YouTube views. The viewer becomes a receiver, catching the video as it hurtles along its itinerary, and passing it back into circulation. 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. Even a poor-quality, distracted reception connects the viewer to the trajectory the image took, and includes viewers in a rough, fatigued collective. Steyerl does not romanticize this possibility, since poor images can just as easily play on people's tiredness and vulnerability. "Poor images present a snapshot of affective condition of the crowd," including paranoia, fear, craving for fun (2012: 41). I would also keep in mind that the circulation of poor images enriches the corporations that provide their platforms, such as Google/YouTube and Facebook/Instagram.

Recipients of the poor image tend to be those excluded from access to high-quality platforms. In the more conservative Arab contexts, women are more likely to receive low-quality images.

This is for the simple reason that women are more likely to watch movies in the safety and comfort of home, rather than going out to movie theaters, a mostly male public space: a phenomenon Ratiba Hadj-Moussa (2015) studies in the case of Algeria.

ENFOLDING-UNFOLDING AESTHETICS ______ I've been describing these works using my method of enfolding-unfolding aesthetics. This approach assumes that history is continuous, and that apparent breaks are really folds. This aesthetics can be compared to Ariella Azoulay's conception of photography as a civil contract among represented person, photographer, and receiver. These models permit a broader concept of indexicality as that which performs a connection between source and receiver through media work.

Enfolding-unfolding aesthetics is grounded in concepts from Deleuze, Bergson, Leibniz, Isma'ili Shi'ite thought, and the process philosophy of Alfred North Whitehead and sixteenth century Persian philosopher Sadr al-Din al-Shirâzî. All of these are philosophies of the universe as a One unfolding into Many, transforming and growing. In enfolding-unfolding aesthetics, mediation does not separate things from their material and physical origins, but connects them to their receiver. The infinite flow of the universe is folded, shaped, encoded by forces that are often explicitly algorithmic. Often what we perceive is already filtered, coded in this way: partly produced by the codes, as Caucasian carpets and compressed video show (see Marks 2010, 2014a, 2014b, and forthcoming a).

As the image travels in time and space, it collects noise and interference: these become part of what we perceive. Yet a receiver can reach through the noise and encoding, to unfold the material and historical sources of media images. The image travels time and space until it reaches our perception. It is amazing that a little part of the universe finally reaches my body! By comparing what you perceive with the interface that shaped it, you can get a sense of where it has come from and what it has passed through. When the medium shows its materiality, we're lucky, because it's easier to detect the codes by which it's enfolded.

// Image credits

Fig.1: Detail, dragon carpet, Safavid empire, Caucasus, 18th C. Museum of Applied Art, Vienna. Photo by Laura U. Marks.
Fig.2: Video still, Rania Stefan, The Three Disappearances of Soad Hosni (2011).
Digital video, color, sound, 70 min.

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Laura U. Marks is a scholar, theorist, and programmer of independent and experimental media arts. She works on experimental cinema, media arts of the Arab world, Islamic genealogies of Western philosophy, and the embodied, process-based analysis of information culture. Her newest book is Hanan al-Cinema: Affections for the Moving Image (MIT Press, 2015); she is also the author of The Skin of the Film: Intercultural Cinema, Embodiment, and the Senses (Duke UP, 2000), Touch: Sensuous Theory and Multisensory Media (Minnesota UP, 2002), and Enfoldment and Infinity: An Islamic Genealogy of New Media Art (MIT Press, 2010). She has curated programs of experimental media for festivals and art spaces worldwide, most recently the Robert Flaherty Seminar in 2015. She teaches in the School for the Contemporary Arts at Simon Fraser University, Vancouver.

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