The Arab masses found in the Internet the last resort to live a free life. But this life was only on the virtual level. Virtually people were able to fulfill all their dreams and fantasies in this open cyberspace, a space that is not limited or policed by any authority whatsoever. For the first time people were able to express themselves openly without any reservation and the Arab youth were able to talk politics, to talk about sex, to talk with the opposite sex or just talk about anything anytime in a way that they could never do in their actual daily lives. Cyberspace allowed a new generation to sprout out of social boundaries, a generation that became accustomed to free speech even though it was only in virtual reality. They lived a utopic virtuality or what Paul Virilio has called a "teletopia", a utopia tele-mediated by the machine, namely by computers.1

Living under severe political oppression the Arab masses resorted to virtual reality, where there is a safe haven to express themselves and their most extreme fantasies without restriction. Cyber societies grew like mushrooms. This growth was caused mainly by strict social norms on one hand, and biased, cruel regimes of dictatorships that forbid political change and public political expression on the other. The Arab political regimes exercised a heavy censorship on conventional media and enforced a single totalitarian political party that does not allow power devolution. In most cases those regimes were or are corrupt and socially unjust. With the advent of the Internet, the Arab masses imploded in this virtuality to an extreme saturation point until they eventually exploded in the actual through revolutions or what is called the "Arab spring".

Virtual reality has had a remarkable effect on Arab societies, after living so many years under the oppression of dictatorships that ruled in the name of the people, many of the Arab countries were enforcing martial laws with the alibi of an ideological fight against Israel and the imperialist Americans. Now the Arab youth are exposed to new ways of life, namely the "western" mode, through the different mediators of the chat-room, network games, porn sites, videos, music and more, and they have a chance to experience freedom of speech through another additive to this virtuality: social networks. The Arab masses imploded their most extreme fantasies in this cyber reality and they started to spend exponential periods of time in that virtually simulated environment. But eventually virtual reality becomes incapable of containing political activities

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because of the sharp separation and contradiction between the two realms of actual and virtual. The Arab youth lived in a sort of schizophrenic state, where they were free and incognito in one and oppressed and surveyed in the other.

This explosion came at the exact moment when communication technology evolved into a new level. The advent of mobile connectivity marked a revolution in communication technology. With the new technologies of smart phones and mobile tablets, the image has taken on a new dimension. This mobile connectivity is totally different from the static one; the notion of space takes on a new dimension, and moves from being an enclosed, private cocooned space that is thus disconnected from the proximate environment while also connected regardless of distance to a cyberspace that then refers back again to the actual space of the real. These technologies maintain the connectivity that enables us to be mobile and linked to the web at the same time. This has changed the notion of private versus public spaces.

The image produced by the masses in the Arab region after the saturation of the virtual and the explosion of the virtual in the street is no longer a conventional representation, nor a simulation like Baudrillard argued, nor is it a virtual substitution of the real as Virilio claimed, but rather it is actual reality itself mixed with the virtual or what is called "augmented reality". It is an actual reality augmented with the digital parameters of mobile devices and satellite connectivity in global space, a step that goes beyond the actual and the virtual and becomes a superimposition of both. "Augmented reality" is a concept that was technically used by Ronald Azuma in his study "A Survey of Augmented Reality" in 1997. He defines it as "a variation of Virtual Environments" which, along with the actual, "allows the user to see the real world, with virtual objects superimposed upon or composited with the real world."

A group of researchers (Marc Aurel Schnabel, Tom Kvan, Xian Gyu Wang, Hartmut Seichter) presented a paper at the Hong Kong Polytechnic University in 2007 entitled "From Virtuality to Reality and Back". In their study they divided Reality into several technologically dependent categories. Mixed realities according to them ranges from real reality to amplified reality to augmented reality to mediated reality to augmented virtuality to virtualized reality to virtual reality.

In an essay entitled "The Poetics of Augmented Space", Lev Manovich cited a number of technological

paradigms that enables a space to be called augmented as such. He defines those research paradigms as tools that serve in:

"Overlaying the physical space with the dynamic data. (...) This overlaying is often made possible by the tracking and monitoring of users. In other words, the delivery of information to users in space and the extraction of information about those users are closely connected. Thus, augmented space is also monitored space."

1. Ubiquitous Computing (omnipresent): the shift away from computing which centered on desktop machines towards smaller multiple devices distributed throughout the space
2. Augmented Reality: the laying of dynamic and context-specific information over the visual field of a user
3. Tangible Interfaces: treating the whole of physical space around the user as part of a human–computer interface (HCI) by employing physical objects as carriers of information
4. Wearable Computers: embedding computing and telecommunication devices into clothing.
5. Intelligent Buildings or Intelligent Architecture: buildings wired to provide cell-space applications.
6. Intelligent Spaces: spaces that monitor users’ interaction with them via multiple channels and provide assistance for information retrieval, collaboration, and other tasks.
7. Context-Aware Computing: an umbrella term used to refer to all or some of the developments above, signaling a new paradigm in the computer science and HCI fields.
8. Ambient Intelligence: alternative term, which also refers to all or some of the paradigms summarized earlier.
9. Smart Objects: objects connected to the net; objects that can sense their users and display 'smart' behavior.
10. Wireless Location Services: delivery of location-specific data and services to portable wireless devices such as cell phones.
11. Sensor Networks: networks of small sensors that can be used for surveillance and environmental monitoring to create intelligent spaces, and similar applications.
12. E-paper (or e-ink): a very thin electronic display on a sheet of plastic, which can be flexed in to different shapes and which displays information that is received wirelessly.ª

Although most of these paradigms might not be so common in Arab societies, their social implications are still valid in addition to very important and basic tools that are used by a number of activists in different Arab revolutions, especially in Syria today. There, activists have formed media hubs that report directly what is happening in the streets. They use simple but very efficient and, most importantly, independent technologies, which are independent from public services and thus governamental control: independent internet connection via satellite, independent cellular phone connection through „Althouraya“ (satellite), even independent electricity as they carry small generators with them. They used Handycams or phone cameras, laptops, satellite cellular phones, GPS devices and many online applications such as YouTube, Facebook, Twitter and Google maps. Although it has taken a lot of effort and hardship, and sacrifices that have sometimes led even to death, they have been able to transform their space through these technologies into an "augmented" space.


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structures, which are exemplified in the shift from static interactivity via the virtual to a kinetic, augmented or mixed actuality. This kinetic actuality goes a step further beyond the virtual and the banality of the image through computer-generated mappings; these overlap actual reality via instantaneous, sensorial devices that can detect physical details and encode them superimposed with the virtual.

Looking at the big picture, what we have witnessed globally in a relatively short period of time is a shift from industrial mass production to a post industrial mass production of information exemplified by the advent of instantaneous digital technologies, and finally to new forms of image mass production where a hybrid image is produced that is a mix of the actual and the virtual, an image juxtaposed with the real: an "augmented" reality.

Image production has shifted from the Actual to the Virtual to "Augmented reality".

In his essay "The work of art in the age of mechanical reproduction" (1930), Walter Benjamin suggests that with industrial mass production, the work of art loses its "aura". Its value passes from being based on ritual to become based on the political, and with this transformation emerges mass media as we know it. He writes that "the instant the criterion of authenticity ceases to be applicable to artistic production, the total function of art is reversed. Instead of being based on ritual, it begins to be based on another practice - politics." 6

In the 1990s Jean Baudrillard suggests that with instantaneous mass production of information, the image becomes obscene and loses its reference to the actual. Contrary to Benjamin, he suggests that the aura of the work will not be lost until it loses its symbolic exchange, which only occurs when it loses the reference between the image and reality, where the image is not a representation of reality anymore but a simulation that is a creation of a new reality without any relation to the actual. This can be valid in the Arab region too and maybe we can consider it as the incubation period of the revolution, where the image lost its reference to what was really happening on the street and became an obscene image maintained and nurtured by forbidden fantasies in a contained cyberspace where everything is possible. And thus, Saussure's formula of semiotics loses one of its essential components: the signified (the real). Simulation for Baudrillard is a signifier without a signified, an obscene image that serves to deter the actual. In simulation, reality is deserted and events become non-events until the explosion of the ultimate event. In "Simulacra and Simulation", he writes:

"The age of simulation (thus) begins with a liquidation of all referentials. [...] It is no longer a

question of imitation, nor of reduplication, nor even of parody. It is rather a question of substituting signs of the real for the real itself. [...] Never again will the real have to be produced: this is the vital function of the model in a system of death, or rather of anticipated resurrection which no longer leaves any chance even in the event of death.”

7 Jean Baudrillard: Simulacra and Simulation (see FN 2).

For Paul Virilio, reality is split into two parts: actual and virtual. This division may be exemplified by the schizophrenic reality that the Arabs have experienced during this incubation period, whereby bit-by-bit virtuality has taken over actuality by a process of substitution. Virilio argues that with tele-technologies, humans will be totally dependent on the machine to get them through the day. They will be connected to the world through the mediation of a computer network that isolates their physicality. Each individual will be isolated, behind his or her computer screen, connected to other computers at a distance and disconnected from his or her proximate environment. Mobility will be mutated and the notions of public and private space will be entirely inversed, until eventually this "information bomb", as he calls it, explodes. In his essay "The Third Interval: A Critical Transition in Re-thinking Technologies", he writes:

"Telemarketing, tele-employment, fax work, bit-net, and e-mail transmissions at home, in apartments, or in cabled high rises, these might be called cocooning: an urbanization of real time thus follows the urbanization of real space. The shift is ultimately felt in the very body of every city dweller, as a terminal citizen who will soon be equipped with interactive prostheses whose pathological model is that of the 'motorized handicapped', equipped so that he or she can control the domestic environment without undergoing any physical displacement."8

8 Paul Virilio: The Third Interval (see FN 1).

Through an exploration of the use of different types of technologies in different Arab countries in different periods of time we can distinguish the different effects of technology on social change: from industrial to post industrial, or information technology to new forms of image production juxtaposed with the real or augmented reality that will serve eventually to build an ultimate image that will explode in the street in a form of "violent" revolution.

An analysis of the Arab online media will show us how the augmented reality created by civil society, with the mediation of a few new media technologies, is mobilized to abolish a stagnated media, mainly the controlled governmental media, which has forbidden and forbids any possibility of political change. We will also notice the effect of mobile media, and the influence of its accessibility and affordability on the role of civil collectivity. A new image was created, never before seen in any mainstream media institution, whether pro or against the revolution; it is an alternative image that is closer to the event, closer to the actual, closer to "truth", an image
that documented this previously deserted reality and that has gained more credibility than any other media. It is an image that was never possible without the new mobile media such as the handy-cam, the smart phone, the laptop and independent Internet connections. Although they might seem to be relatively simple technologies they have proved to be very efficient.

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In his essay "The Masses: The implosion of the social in the media", Baudrillard depicts how the masses imploded inside the obscenity of the image of mass media. This "self-intoxication", as he calls it, is the realm of simulation where reality becomes totally deserted, "the way in which events themselves disappear behind the television screen, or the more general screen of information (for it is true that events have no probable existence except on this deflective screen, which is no longer a mirror). While the mirror and screen of alienation was a mode of production (the imaginary subject), this new screen is simply its mode of disappearance."9 This same concept of implosion can be illustrated by the effect of new media on Arab societies too.

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In a video made at the beginning of the Syrian revolution a group of women activists had called for an indoor sit-in. While sit-ins are only efficient in a public space, this one was in a living room mediated by a video on YouTube and it thus transformed the private into a public space.10 Covering their faces the women chanted the national anthem holding small banners with slogans against the regime. This video marks the period of transition, the paroxysm of the virtual; at the last minute before the explosion of revolutionary activities in the street, this video depicts the inversion of the notion of public and private spaces, and the last of the incognito masses. In the time that follows people began revealing their identities, nobody cared anymore. The use of "augmented reality" technologies has had a tremendous effect on social structures and the interrelations between public and private spaces, but this could not have been possible without a long period of incubation in the virtual. Living in the virtual was one of the major factors that helped to mature the political activities of the Arabs. The open discussion of political issues through social media and the fact that the participants can remain incognito has contributed to a general feeling that people can freely criticize their political regimes and suggest alternatives through continuous debates between different layers of society from different countries. The connectivity between these varied layers and nationalities helped to open doors to a political exchange of ideas and to a sharing of experiences of alternative solutions suggested by different understandings in different countries around the world; this connectivity can help explain the contagious upheavals that spread from Tunisia to Egypt to Libya to Syria and that have passed through Yemen and Bahrain.

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Knowing that the revolutions are still in progress, it would be pretentious to talk about a conclusion now, it would be an underestimation of a situation that is still in continuous flux. Therefore it is only legitimate to raise questions that will open doors to deeper research into the implications of new technologies on popular movements and social change:

1. What is the social mode of image production after the advent of social networks and smart mobile technologies?
2. Will the masses be able to escape the trap of virtual reality, or simulation, that many post-modern theorists argue they are stuck in? And, will they continue to be obsessed and intoxicated by their own images?
3. Will the image escape its current banality and obscenity with "augmented reality"?
4. Can we consider "augmented reality" a shift back to representation? Or are we still in the simulation mode of image production?
5. Will "augmented reality" reestablish the previous relations that existed between public and private spaces?
6. Is the Arab revolution a sort of "augmented reality" that has followed a period of virtual saturation?
7. What is "augmented space" in the Arab world? Does it escape surveillance and control over the masses or is it a space of freedom?

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