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R. Swaminathan

Observer Research Foundation, swami@orfonline.org

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Politics of Technoscapes: Algorithms of Social Inclusion & Exclusion in a Global City

R. Swaminathan,¹ PhD
Observer Research Foundation
swami@orfonline.org

Abstract

Social media and the Internet are seen as Siamese twins. The discursive architecture of social media is so tightly coupled with the various imaginaries of the Internet that the distinct spatiality, territoriality, and relational power dynamics of each is often simplistically blurred and merged. This paper makes the case that the sociality and spatiality of social media is not only different from that of the Internet but is increasingly becoming part of our contemporary built environment in a manner that confers social media a high degree of relative autonomy in its relationship with the Internet. The paper further argues that such autonomy is fundamentally mutating social media from a site of articulation into a set of digitally mediated spaces with their own scripted and connected logic of inclusion and exclusion. The paper establishes that the integration with the built environment is foundationally linked to a suite of six inter-related technologies of wireless transmission: Radio Frequency Identification (RFID), interactive and emotive display systems, electronic payment gateways, digital cartography systems, and geo-locational mapping systems and services. The paper also raises questions about our understanding of these emergent digitally mediated spaces, arguing that a limited approach of reducing social media to sites of articulation marginalizes the underlying socio-technical politics of such spaces. In conclusion, the paper makes the case that the digital augmentation of public and private spaces is creating a hybridized socio-technoscape that bridges the gap between “the epistemological realm and the practical one, between mental and social, between the space of the philosophers and the space of people who deal with material things,”² in the process transforming the fundamental principles of democracy.

The Changing Sociality of Social Media

The number of the people using some kind of social media is 1.73 billion, up almost 50 million from last year. This means, worldwide, one in four people is connected to Twitter, Facebook, Pinterest, Tumblr, or one of its several Internet cousins. If the trend continues, which by all accounts will, it is expected that in another four years, in 2017, 2.55 billion people in the world will have some aspect of social media embedded into their lives. That's slightly more than the population of two Indias put together. Not surprisingly, this charge toward a digitally mediated socialization is led by India, China, Indonesia, Mexico, and Brazil. India, for example, has seen an almost three-fold increase in the number of social media users, from approximately 55 million in 2011 to 128 million in 2013. The number breached the 150 million mark in early 2014 and is expected to close at 170 million by the end of the year.³ The story in other emerging economies is similar. Faced with such compelling numbers, it is easy to get the impression that social media and the Internet are an integral part of the same fabric, as if one is a warp, and the other, a weft. Strengthening such an impression is also the historical reality⁴ that the Internet floats in a seemingly ethereal manner on an interconnected system of server farms layered with predictive algorithms, secure payment gateways, and search engines. The Internet has always had, and large parts of it still have, a tightly coded dependency on fixed telecommunications infrastructure and devices. Such a tethered relationship, on one hand, led to the emergence of a communicative architecture of protocols and standards, a language so to speak, to allow the physical infrastructure of routers, undersea cables, and switching systems to talk to each other. On the other, it led to means and modes of articulation that came to be defined by the territoriality and spatiality of the Internet. The physicality of the Internet, in essence, came to define both the means and modes of its various emergences, social media being one such emergence. In being informed by the coded dependency of the Internet and molded by its essential positioning as a platform for exchange of information, social media came to be imagined primarily as a site of socio-cultural articulation that reflects, amplifies, and marginalizes concerns of the real world. At best, then, social media is seen as a lens through which to arrive at a mediated understanding of the physical sociality of the real world and, at worst, it is perceived as a reflection, even a microcosm, of the real world. It's a reductive logic that informs—as much as it derives from — a simplistic understanding of the Internet as a medium of virtuality, “unconnected,” as it were, to the fundamental cyber forces of production largely consisting of server farms, codes, algorithms, and software architectures. Such an analytical framework fails to take into account the relational dynamics between two critical nodes, one material and the other epistemological. In the last decade, and especially in the last five years, technological developments have transformed the tightly coupled and continuous relationship between the Internet, cyber forces of production, and its various emergences into one that is simultaneously multimodal, discontinuous, and relatively autonomous. This reconfiguration has resulted in an increasing embedding of a scripted and coded logic—one that was earlier exclusively confined to the territoriality and spatiality of the domain of the Internet—into the contemporary built environment through asynchronous and non-linear integration of specific digital technologies. It covers a wide variety of emergent socio-technical phenomenon ranging from electronic money and Aadhaar cards⁵ to 3D printing and wearable human-machine interfaces. None of these digital interfaces necessarily requires the pipeline of the Internet for either fulfilling their functionalities or replicating and networking with other digital services, products and devices.

The dominant epistemological framework acknowledging this transformation refers to it as “ubiquitous digitalization” or computing, often inadvertently falling into a trap of technological determinism that leads to narratives and discourses of apparent inevitability

(Hill, 1998, p. 23) of technology and progress. Consequently, then, technology is seen to acquire not only an agency of its own that is independent from the social relationships of power of daily life (Townsend, 2013) but also a value-neutral additive that makes “time instantaneous and space unnecessary” (Pawley, 1995). Derived from these logical constructs of time-space compression is the narrative of transmission and transference of space, in which values, cultures, economies, and entire human societies are seen to migrate into electronic spaces. Our current and simplistic understanding of social media (as simply a digital platform for virtualized articulation) can be traced, to a certain extent, to this analytical framework, in which the sociality of social media is intrinsically, almost as an *a priori* starting point, defined by the territoriality and spatiality of the Internet, which is seen as a spearhead of this ubiquitous digitalization. Two examples will indicate the limits of our prevailing understanding of sociality. Adam Sadilek of Google and John Krumm of Microsoft have created algorithmic software that claims to predict your future with a fair degree of accuracy. They attached GPS devices to 300 residents of Seattle and tracked their lives for three months. This tracking provided 32,000 “man days” of data, which worked out to 150 million data points. The two researchers tracked the residents’ the time of waking, eating habits, frequently used routes, and time of sleeping, among other things, in order to “provide better reminders, search results, and advertisements by considering all the locations [they were] likely to be close to in the future.”⁶ The second example is from the Tangible Media Group of the Massachusetts Institute of Technology (MIT). The group has created an application – InFORM – that gives physical form and shape to digital data. This allows for digital and physical domains to intermesh with each other, “mediating interaction... by providing dynamic physical affordances through shape change....” It permits them “to manipulate by actuating physical objects.”⁷ The system is built “on top of a state-of-the-art shape display, [providing] for variable stiffness rendering and real-time user input through direct touch and tangible interaction.”⁸ Both the Google-Microsoft predictive software and MIT rendering application use the contemporary “Internet-only” social media as a set of data points as a material foundation, among several others, in creating a meshed digital bridge to the physical world. Such systems are increasingly becoming part of built environments. One of the ways in which they derive information for their algorithms of intelligence and real time analysis is by deconstructing social media into bits and pieces of discrete data points – phone numbers, gender profile, likes and dislikes. By selectively integrating themselves with these bits and pieces, these systems are fundamentally changing the nature of sociality of a social media from being exclusively confined as an articulatory framework of a virtual world to a physical factor determining social relationships of power in the real world. The sociality of social media is today is as much a material component of human relational dynamics as class, caste, religion or ethnic identity are. In fact, several applications and software systems, from traffic management systems⁹ to the world of peer-to-peer digital currency of Bitcoins,¹⁰ are using social media as a foundational base for extending their sociality into the real and physical domains. This meshing together of several discrete and varied data points is made possible by a new suite of digital technologies.

There are three fundamental material and epistemological shifts taking place that are architecting unique relational dynamics in the domain of built environment. The first is the mutating virtuality of the Internet. This happens as a continuous process of integrating a digitally mediated physicality of the real world through an embedding of specific digital tools and technologies in daily lives, creating a hybridized socio-technoscape.¹¹ The second is the expanding notion of sociality within this hybridized domain. Such a reconfiguration is transforming physical spaces into nodes that are scripted, coded, and networked, creating a new socialized digital logic that is organizing physical landscapes as exclusionary and inclusionary zones. The third is an emergent singularity that is based on an increasingly

coupled, often integrated, relationship between humans, algorithms, codes, and machines. This process is asymmetrically extending the logic of sociality of the hybridized socio-technoscape into real and lived domains not directly mediated or engaged by technology, resulting in a narrative and discursive architecture that informs daily knowledge creation. Taken together, these three shifts are reconstituting the material base of a network society “in ways that [allows for] their endless expansion and reconfiguration, overcoming the traditional limitations of networking forms of organization to manage complexity beyond a certain size of the network. . . , [including] some people and territories while excluding others, so inducing a geography of social, economic, and technological inequality.”¹²

From Sites of Articulation to Digitally Mediated Spaces

The Internet evolved from an American military effort to develop alternative lines of communication in case of the breakdown of traditional fixed line communication networks in the event of a war. That historical legacy, one of communication, ensured that the eco-system powering the Internet, from technologies, hardware, software, protocols, and standards to access devices, fixed line distribution networks, and even content, was by default tuned to serve and strengthen the communicative architecture of the Internet. Despite the seemingly serendipitous and chaotic nature of the Internet, a large part of its growth is actually a story of linear progression, though in massive leaps and bounds. So a Usenet of the early 1980s, for instance, can justifiably be positioned to have mutated first into a forum of the 1990s, the message boards of the 2000s, and the social media phenomenon, spearheaded by Facebook and Twitter of the current generation. But the common thread running through all these mutations has been the constant focus on communication; the devices changed; the character lengths shortened; pictures and videos were added, yet the platform remained a site of articulation. At a fundamental level, the sociality of a Usenet¹³ and that of a Twitter is not all that different, confined as they are to the spatiality and territoriality of the Internet. Yet there is a critical difference.

The sociality of the contemporary forms of social media is extended, mutated, and transmitted, its value systems, logic, and perceptual mechanisms embedded into daily life through a set of six inter-related digital technologies of wireless transmission: Radio Frequency Identification (RFID) systems, interactive and emotive display systems, electronic payment gateways, digital cartography, and geo-locational mapping systems and services. This complex process of embedding ranges from the visible (Twitter applications on mobile phones) to the invisible (databases of social media platforms being used for algorithmic stock trading). The history of wireless transmission can be traced back to last part of the 1800s, with some of its most famous milestones being the invention of the telephone and the experiments carried out by the maverick Serbian scientist Nikola Tesla, especially his Wardenclyffe Tower project on wireless transmission of electricity. The contemporary tipping point in the history of wireless transmission came with the large-scale development and deployment of mobile communication technology from the early 1980s, aided in no small measure by the military advances in the manufacturing of chips, optimized microwave technologies that leveraged the propagation characteristics of the different frequencies in the spectrum range in a substantially improved manner.

The maturation of wireless transmission technologies ensured that services layered upon such technologies changed from one exclusively associated with voice to one including the transportation of data, images, and movies. The advent of mobile telephony and wireless fidelity (Wi-Fi) brought about two key transformations. First, it loosened the tightly coupled relationship of the Internet with fixed telecommunications infrastructure. Second, it afforded the Internet a certain relative mobility, allowing it to be positioned and located in a larger

number of physical domains. Closely linked to the developments in wireless transmission is the technology ecosystem of RFID systems,¹⁴ which makes use of radio-frequency electromagnetic fields to transfer data. Later day RFID systems (tags) also store such data and communicate with each other and other networked digital systems, including databases built upon and integrated with the Internet. For all practical purposes, modern retail chains would not have achieved their scale and size if it wasn't for RFID technologies, most obviously seen in the barcode stickers on products. In embedding the material domain, from products to identity/access cards, RFID technologies brought in a scripted logic of ordering daily life that created its unique socio-political technocape of exclusion and inclusion. Computing has always been about different sets of algorithms with their own embedded binary logic systems interacting with other. In essence, then, the Unix of yesteryear and today's Android 4.4 Kitkat Operating System share the same genetic code. Codes became accessible, in fact, democratic, with the development and deployment of Graphic User Interfaces (GUIs), and DoS prompts made way for desktop click-and-point, mouse-driven actions and, ultimately, to the current swipe and slide interfaces.

This transition would not have been possible without new technologies for display and expression, with the prominent tipping point being the liquid crystal display (LCD) and light-emitting diode (LED) display technologies. In layering the raw code with a GUI, two transformations took place in the socio-technoscape. First, the complexity of the code is hidden, creating a simultaneous process of accessibility and democratization, as evidenced in the use of immersive and emotive mobile applications for a range of services from gaming to prenatal health. Second, an irrevocable distanciation occurs, which divorces an individual—as a stakeholder in the engagement with the code—from the code itself. This leads to forms of disempowerment that can range from automatic exclusion from public transactional spaces, like how retail investors in the United States were literally coded out by the 2010 Flash Crash, triggered by automatic trading algorithms and High Frequency Traders (HFTs) to conditional inclusion into a system on the fulfilment of certain parametric factors, like how information must necessarily be organized in a document-sub-folder-folder format in a computer for it be made searchable. The Internet, arguably, would not have made the transformation from a platform of communication to a domain of transactions if it were not for a combination of secure encryption technologies (SSL) and authentication protocols that underpin today's electronic payment gateways. The virtualization of money not only created completely new and digital means and modes of transaction but also intermeshed with existing physical systems of commerce and money, creating a digitally mediated and modulated relationship between individuals and institutions.

This further extended a coded logic into the existing built environment and lived spaces. Such processes are reconstituting relational dynamics in unconventional ways, as the relative ability to decontextualize time and space (i.e., making it global and unnecessary) is a political and social power in itself. Two co-located sets of technologies, digital cartography and geolocation, are the primary movers behind the emerging scripted and coded ordering of physical spaces. By integrating themselves with satellite imagery and manipulating and layering software (CAD-CAM, photoshop), and by using the Internet as a distribution mechanism, digital cartography and personal locational services (GPS and GIS) are creating scripted layers of satellite images, streetviews, and earthcams. This complex process integrates a simultaneous distancial, granular, and segregated view, reconstituting the relational dynamics between physical, virtual, and imagined spatiality and territoriality. In positioning physical space as interchangeable and transformable, like the layout of a web magazine, an emergent artificial-asocial intelligence, similar to the ones constructed by the electronic brains of networked military unmanned combat vehicles is seen. Ironically, making physical spaces more navigable and transparent, such as through GPS-based street navigation

devices, also injects a coded sociality of inclusion and exclusion, as locations ranging from exclusive seven-star gated communities to ghettos are contoured not by their physical location but their virtualized physicality. The underlying relational dynamics of gated communities and ghettos, incidentally, are startlingly similar.

The emergent digitalization as result of these technologies is fundamentally different from the earlier forms of digitalization in the manner in which it intersects and integrates with existing social relationships of power, of which conventional social media is reduced to one dematerialized component, configuring discourses that transcend institutional and non-institutional underpinnings. Such simultaneous processes of evolution inform the relational dynamics of digital technology, human territoriality, and space, inextricably linking social production of material and digital spaces (Mosco, 1996; Soja, 1989, 2009; Castells, 1996). This co-location creates an extended notion of sociality that opens us to the experiences of “de-realization and de-localization,” while allowing us to continue having “physical and localized existences” (Robbins, 1995, p. 153). Epistemologically, this mutates the logic of virtual reality into one of “real virtuality,” in which processes of the material productions of space “tap into digitally available resources of the world to enrich reality in real places” (Abler, 1995, p. 3). This “culture of real virtuality” (Castells, 1996, p. 373) is experienced through new and integrated digital systems that capture lived reality and then virtualizes and communicates them by embedding an ordered logic, creating an experience that is at once real and digital. Such co-located processes embody “complex global-local articulations between space of places and space of flows” and a digital “ordering of the urban” (Castells, 1996, p. 423-28; Castells, 2010), simultaneously transforming virtual sites of articulation and physical sites of engagement, contestation, and negotiation into a hybridized set of digitally mediated spaces. Such technospaces require a completely new lens—a fresh conceptual and theoretical framework—which is able to spot, capture, understand, and analyze the multiple realities that seem to exist simultaneously in physical and virtual forms. Recent interdisciplinary work by researchers who take inspiration from the fields of anthropology, sociology, human geography, architecture, biotechnology and the techno-sciences provide a good theoretical starting point for understanding the “dual, mixed reality, and PolySocial Reality” (PoSR) (Applin & Fisher, 2013) of the techno-social landscapes:

A new heuristic for human experience now blends physical and virtual space in personal, asynchronous time and physical and virtual space in group oriented, synchronous time. At present, the Internet has modified our experience of both space and time, within its domain rendering time as asynchronous and spatial locations as ubiquitous. When the Internet was composed of fixed servers and clients, these two views of time and space were contextually moderated. With the advent of ubiquitous mobile devices, and the sensor rich environments of Dual Reality, Mixed Reality, and the Internet of Things, new capabilities and lived experiences will lead to a convergence of those views.¹⁵

Emergent Politics of Technoscapes

The emphasizing dynamic of digitally mediated spaces is how “bits and pieces—bodies and machines, and buildings, as well as texts—are associated together in attempts to build order” (Bingham, 1996, p. 32), creating an existential domain in which space, time, and agency are never absolute and are constantly defined and redefined through their relational dynamics. The virtual and lived spatiality of the digitally mediated spaces is often seen as “fragmented, divided, and contested,” as relationships of power within this socio-technoscape link the “local and nonlocal in intimate relational, reciprocal connections” (Graham, 1998, p. 179). These relational frameworks construct “multiple realities” (Harvey 1996, p. 256), creating an

impression of an experiential diversity that is simultaneously anchored to fixed material means and modes of spatial production and mobile nodes of narratives and discourses. Understanding the emergent politics of digitally mediated spaces requires us to revisit their foundational layers again.

Chips and Codes

The first layer powering these spaces consists of the physical infrastructure of electronic components, servers, telecommunication lines, and the infrastructure's embedded intelligent logic of codes, algorithms, and predictive software. Taken together, these components constitute the material support for these spaces. Such spaces, it must be reiterated, are more in the nature of principles of control and order than physical spaces. So the spatial form of a digitally mediated space could as well be a "city" one moment and a "global region" the next. This architects a unique relationship of quantum mutation in which space and spatiality seamlessly interchange, co-exist, and merge. Such entanglements are creating shared experiences that are virtual and real, as this conversation with Sunil Dalvi indicates.

I love European football and follow it very closely on the Internet and television. I don't miss any matches of Bundesliga, English Premier League, and La Liga. My favorite teams are Bayern Munich, Barcelona, and Manchester United. We have a small football team in the neighbourhood. We don't have a park to play, so we play on the roads. I love the shoes and the kit the players wear. All these teams play in such nice stadiums, and I really love watching those snippets where they do a quick tour of the city. It's so neat, nice, and clean. The roads are broad, and everyone seems so modern. I have never been to a football stadium. There are no football stadiums in Mumbai. There are only cricket stadiums. One day I hope Mumbai also becomes like those cities with clean, wide roads and football stadiums.¹⁶

Hubs and Nodes

The second layer underlying digitally mediated spaces consists of nodes and hubs, much like a computer network, which transport and transfer data, physically, and ideas, logic systems, and values, ephemerally, creating a "space of flows."¹⁷ These nodes range from collective hubs, like Wi-Fi hotspots to individually demarcate domains of a collective network, like a Facebook or Twitter account to relatively private and unique nodes, like a mobile phone. In employing logic systems of all types of computing, from master-to-client (one server and numerous receivers), client-to-client (also called peer-to-peer), and many-to-one (called multicasting), each node potentially has multiple forms embedded in it. A mobile phone, then, can be used nearly simultaneously for a call (one-to-one), send/receive bulk/group SMSes (one-to-many/many-to-one) and can also be used as a conference bridge (server-to-client). These nodes are stacked in a hierarchical manner depending on the principle of order and control, though the hierarchy is also one of impermanence, molded by whether the logic of order and control is for material production, socio-cultural articulation, or collective consumption. Such interrelatedness of nodes construct digitally mediated spaces as processes rather than places, making the spatiality and territoriality of digitally mediated spaces as interchangeable and transportable, independent of time and space. For example, a leading environmental activist of Mumbai, in explaining his participation in the BMW-Guggenheim lab in Mumbai, displays the discursive logic that informs the construction of these digitally mediated spaces, which are virtual, real physical, and transferable in a near simultaneous manner:

The lab was an interesting mix of people from the city and from around the world. We exchanged notes, and I found it interesting to know how people in other cities protected their unique environments. The best part about the lab was that the initial thought processes about evolving solutions for better urban living started face-to-face, but it is now continuing, using social networking tools and the BMW-Guggenheim lab website. [The] urban experience is no longer confined to people with access to knowledge and information. In fact, I showed some videos of the discussions [subtitled in Marathi] at the lab on the importance public spaces for urban living to a group of people in Kasara [a small town around 100 kilometres from Mumbai]. They now want parks, places to sit and congregate. The local corporator [elected representative] even said he would build a Central Park [after watching New York's Central Park] in Kasara.¹⁸

Order and Control

The third layer contributing to the emergence of digitally mediated spaces consists of the people who manage the nodes and material base and, in the process, integrate themselves with it, becoming the “dominant, managerial elites (rather than classes).”¹⁹ They articulate the spatiality and territoriality of the digitally mediated spaces. These social actors are positioned within a material and articulatory system that molds and embeds them with a scripted and coded logic, primarily through a system of training, making them a part of the techno-financial-managerial elite. Through this complex process of logic actualization, the elites become both a stakeholder and a protector of this system, an integral part of the material and articulatory system of dominance. In the process, often, they become a collective node of transfer of ideas and values that are “global, decontextualized, and ahistorical.” The digitally mediated spaces supersede the logic of any specific place, replacing it with an interconnected system of material and articulatory frameworks that position technocratic processes as global, contemporary, and cosmopolitan, while locating people as local. Nandan Nilekani, in explaining the philosophy of the Aadhaar card unwittingly displays his own role as part of the dominant, managerial elite that merges global logic and local contexts.

[The Aadhaar card] gives a holder the ability to authenticate his identity. Once you have the card, it makes it easier to integrate various social welfare measures directly with the individual. No one then remains cut off. There will be no local blockages. It will reduce leakages, remove bureaucratic interfaces and interferences, and will empower the individual. The ability of the Aadhaar card to have a 128-bit smart chip embedded in it also frees it from being completely being dependent on any kind of online authentication. In being integrated with a standalone authentication device, the card brings in the convenience of digital technology without being bogged down by bad Internet. It's a simple number that gives so much amount of flexibility. It's digital empowerment in the real sense.²⁰

Producing Social Space

The politics of digitally mediated spaces reflect a self-perpetuating and circular logic (reason) in four ways, creating a new framework of exclusion and inclusion. The first is through a complex process of appropriation of the social production of space.²¹ At a conceptual level, space has always been an organizing tool, and the way physical and lived space is spatially and territorially ordered is through a material and imagined demarcation of public and private space (Madanipour, 2003). Such a socially organized demarcation, in fact, constitutes the base upon which the theory and practice of some of the fundamental building

blocks of contemporary daily life is built, from public goods and governance to the notion of nation-state itself.

The electronic augmentation of physical and lived spaces and the physical augmentation of electronic spaces, most notably represented by Second Life,²² blurs the relatively clear historical demarcation between public and private space, creating a spectrum of privateness and publicness that keeps changing as newer forms of digitally mediated means and modes of social production emerge. The blurring of this distinction produces a new spatiality that brings together the domain of *Gemeinschaft* (arena of social mores and norms, often loosely referred to as community) and *Gesellschaft* (arena of formal controls, referred to as society).²³ Both are brought together as a singular digitally mediated space by a shared coded and scripted logic, creating a “de-localized” articulation that is diffused in an asymmetric and non-linear manner. So, on one hand, it informs the politics of development that unfolds in the material domain through a range of mutations, from narratives of riverfront development and beautification projects to greening of open spaces (as opposed to, say, the narratives of the regeneration of rivers and the ecological balance of open spaces). On the other hand, it molds the various levels of social articulation, ranging from discourses of the migration of outsiders to the demolition of slums (as opposed to discourses of migratory diversity and the socio-economic agency of slum residents). A snippet of a conversation with 32-year-old journalist Preety Acharya reveals the undercurrents of these processes.

I am a Marwari from Rajasthan, and generations of my family have been moneylenders in Mumbai. Marwari girls marry early, but I broke out of the mold. I work as journalist and earlier used to work out a small office in Lower Parel [a business locality in Central Mumbai]. Recently, we all shifted to the Indiabulls Centre.²⁴ The office is world-class, and when you enter the complex, you feel as if you are entering a new world.²⁵ Earlier, I used to wear good clothes, but here a lot of big companies are located. Everybody dresses so professionally and well. Not a hair out of place. I have also changed my wardrobe, and I have realized that you need to look really international if you want to make an impact. I am fat and need to lose weight. Maybe I will undergo a bariatric surgery. It is difficult in Mumbai to jog and exercise, as there is no space. My office is located on the 30th floor, and from there Mumbai looks so beautiful. But once you come down, you have all these slums and they smell.²⁶ I understand they are also people making a living, but there are too many people in the city. There are very few green spaces²⁷ in Mumbai, and all these slums can be converted into parks. We cannot call ourselves a global city if we don't have parks.

Augmenting Social Space

The second way in which a new framework of exclusion and inclusion is created by the emergence of digitally mediated spaces is by a relatively autonomous augmentation of the existing scripted and coded logic within digitally mediated spaces. Each layer of augmentation displays greater level of order and control, divorced from local contexts, including people, creating a daily lived reality in which an individual has an illusion of control through an immersive experience with emotive interfaces (touchscreen being one), while the non-visual, coded and encrypted, becomes smarter and more intelligent, increasingly occupying domains of agency and choice. These processes range from predictive algorithms of social media determining individuals' “needs” and displaying what it thinks they “want,” inadvertently creating a digitally mediated selection bias that informs practically everything from election speeches to voting strategies, to retail chains systematically

eliminating products that do not fit in with their scripted logic of tracking, scale, and logistics, creating a self-fulfilling system of customer choice, demand, and satisfaction. In its extreme manifestation, as seen in the Swedish city of Lund, the city gets “constantly produced, re-engineered and mediated by computers in complex networks, [which] takes considerable amounts of work and material infrastructure as well as large numbers of highly skilled workers....[T]he scripted space as the info-layer of the city is a complex and networked software structure [in which] algorithmic scripts organize and control the city and our experience of it.”²⁸ Kevin Slavin of MIT Media Labs explains the dangers in his own inimitable style:

Major market crashes have occurred and will continue to occur because the market no longer has a human interface. All the tools designed to make it legible have made it impossible to read, and I think that's weird. Isn't it strange when you add computers to physics, we unleash the Higgs Boson, but apply it here and we're further away from understanding the market than we have ever been? Physics researchers have estimated there have been 18,000 algorithm-driven black swan events²⁹ in the last five years, but that number doesn't sound very black swanny to me....There are only two ways to write these kinds of algorithms. They can either be written by humans, or not. Both are extremely problematic. It means there's a human idea in there, actually an ideology. Scarier still is if there's nobody there when an algorithm is working without context or explanation The [US] Department of Defense developed an algorithm to detect for tanks in the field. They trained the cameras and took 100 photos, but when it came to testing, it was total chaos. It was performing so well, so they went back and had a human look at them, but all photos with tanks on them were on a sunny day, and photos without tanks were from a cloudy day. It turns out what they had trained it to do was tell the weather. This is what happens without a theory –it's in the explanation.³⁰

Creating Social Meanings

The third way in which a new framework of exclusion and inclusion is structured is through the creation of an integrated set of concealed meanings, almost like a secret language, which, in order to be understood, must be navigated within the digitally mediated space. This language functions as a “sign of signs... [and is] readable for those with the right code but cannot be accessed by outsiders..., [who are blocked by] signs indicating hidden infrastructures, security alarms, and surveillance cameras. We find many physical structures guiding and welcoming us, combined with electronic layers sorting and disciplining the clientele. [F]or example, the signs in alluring shop entrances indicate[that]credit cards [are] accepted, in this way welcoming those with the right cards and excluding those without money.”³¹ It's through these sets of concealed meanings that the scripted space maintains and augments its mediated character, often sub-consciously molding the routes of those engaging and interacting with it. The best representation of such a set of concealed meanings is seen in theme parks, where “each square foot must pay off..., [creating a sort of] happy imprisonment... [as a means of] ergonomic control” (Klein, 2004, p. 332). It is a logic system that has already permeated lived physical space and can be seen in attempts to replicate European cities, as in the city of Lavasa,³² or smaller efforts to create connected enclaves of gated communities. The complex politics of such socio-technoscapes, often referred to in a seemingly value neutral way as “dynamics of Information Architecture,” “Ergonomics,” and “User Experience,” all of which are terms originally associated with information technology, reflect a range of aspirations for a city, from those of private municipal governance to corporate-style Chief Executive Officers (CEOs). The narratives backing up these aspirations, in order to depoliticize the system and the discourse, often marginalize or eliminate the

democratic potential and the inclusionary logic of political processes. Two narrative strands of the dominant discourse in Mumbai are being showcased here to highlight the case:

Bombay had a world-wide brand image. We now need to build a similar brand image for Mumbai. How about making Mumbai the Las Vegas (casinos)-cum-New York (finance and entertainment)-cum-Paris (fashion)-cum-Singapore (law and order and cleanliness) of the world? For this, Mumbai definitely needs a CEO like Lee Kwan Yu of Singapore or Chandrababu Naidu. Today, Mumbai is a city with a brilliant brain but paralyzed limbs. The infrastructure needs to be completely overhauled. Double-decker roads and trains need to be built — like Bangkok — to decongest traffic. Hovercrafts can be used to link the western coast of the city, while a helicopter service can link the airports to the heart of the city. For slums, the Singapore example can be followed. In the 1960s, slum-dwellers in Singapore were rehabilitated in high-rises with shopping centers at the bottom, where they were given work. You would be surprised how fast efficiency seeps downwards once you begin wielding the stick. Of course, for this, the CEO needs to operate without political influence.³³ The success of the Mumbai CEO shall depend on a good dashboard. If Oracle CEO Larry Ellison can track 20,000 salespeople, tracking Mumbai city is in the realm of the possible. This may sound just like Chandrababu Naidu redux, but that should not be an argument against it—how well it is done is the key. Restructuring civic incentives, based on improved information flows, will go a long way towards tackling this weakness. That is what corporate dashboards are about. Mumbai CEO can use them too. He can choose to be efficient. [Mumbai] can seriously put its world-class IT industry to work to make that happen.³⁴

Space-Time Compression

The fourth way in which the framework of exclusion and inclusion is created is through a simultaneous process of “distantiation and space-time compression” (Giddens, 1999) within the digitally mediated spaces, allowing material and non-material forces of production to co-locate and co-exist, often in an interchangeable manner, creating a singular and circular logic of self-sustaining codes of sociality that recreate, at a conceptual level, the politics of exclusion and inclusion as a binary set of logins and logouts. The political manifestation of these processes are still evolving and range from questions of mediated identity, citizenship, and nationhood raised by Aadhaar cards to facial recognition software, biometric identification systems, and magnetic strip cards to access public, semi-public, and private spaces. By default, the participation of a person in a social realm would require, at the least, an engagement with multiple layers of digital access points, but in all probability, it would realistically require a complete integration with the essential logic of digitally mediated access. In some ways, some of the future cities being planned in India have already imbibed this logic.

In much of the developed world, innovative new digital technologies are being retrofitted onto aging infrastructure to make cities work better for the 21st century. But here in India we have a tremendous opportunity: to build new cities from the ground up with smart technologies. Using technology and planning, we can leapfrog the more mature economies. Unlike the cities that grew up in the United States in the 19th and 20th centuries, we don't have abundant supplies of land, energy, and water. So we have to build cities in far more innovative and sustainable ways so that access to resources, services, and products and its demand and supply systems are integrated.³⁵

Answers and Questions

The Politics of the digital spaces are often exclusively conceived and conceptualized as an articulation of Internet-only social media platforms: the Twitter revolution and the Arab Spring are dominant metaphors. Yet, there isn't one "single" politics of digitally mediated spaces. There is, however, without a doubt, a socio-technical connectedness between the multiple politics of the hybridized techno-spaces that creates a real world spatiality and territoriality of social singularity. There is also not a single metanarrative of these spaces, yet the micro-narrative of each one of these spaces mimics the nodal architecture of network systems, contributing to and drawing from other narrative nodes in a nearly instantaneous manner. The politics of such spaces can best be described and understood as a multitude strung together by an overarching logic of control and order that is digitally manipulated, scripted, and coded. The narrative and discourse of these spaces have distinct characteristics but are also intrinsically linked to the larger connective architecture of globalization, finance capital and technology.

The politics of these spaces are extraordinarily dynamic, changing and mutating so fast and so quickly that not only does the distanciation between time and space seem artificial, but it actually seems to be moldable enough for it either to exist individually, collectively, or as a singularly merged entity. It is almost as if there is a certain quantum logic associated with every single phenomenon of these socio-technoscapes: every emergence has the potential to exist in different modes and forms at once. It also seems that the very act of observing a digitally mediated space changes it; after all, for instance, one cannot research the political articulations of Twitter as a social media platform without becoming a part of it and, in the process, submitting one's movements to the predictive and tracking algorithms of multiple and layered digital platforms of the virtual and physical world. Digitally mediated spaces are not just a rich landscape of new means and modes of production of space, spatiality, and territoriality; they also foster methodological challenges that raise fundamental questions about the tools, techniques, and approaches towards social science research. One might even be tempted to understand the articulatory fragmentation and multiplicity of contestations as a manifestation of a post-modern world order—one that is underpinned on a network of integrated digital technologies.

Each new layer of fragmentation, engagement, and contestation is embedded with a logic that is becoming increasingly autonomous to the point of complete independence—so much so that the logic of the digital has permeated the consciousness of daily common sense, existing, as it were, without any material foundations. Ironically, this logic, while fragmenting the material and non-material means and modes of social production, the sociality of life, is based on a singular imperative of order and control, which ranges from the genetic manipulation of ecology and ecosystems to reconfiguration of physical and imagined spaces. It's almost Newtonian in spirit and reminiscent of early 20th century triumphalist modernism, making one wonder if in order to understand and analyze digitally mediated spaces, one has to revisit almost every single epistemological domain with a new lens.

Notes

¹R. Swaminathan is Senior Fellow of Observer Research Foundation (ORF), Fellow of National Internet Exchange of India (NIXI) and Contributing Editor of Governance Now. This paper was written as part of a larger research project on Social Media and Democracy funded by Rosa Luxemburg-Stiftung (RLS) Foundation, Berlin and Observer Research Foundation (ORF), Delhi.

²Henri Lefebvre (trans. by Donald Nicholson-Smith), *The Production of Space*, Blackwell Publishing, Oxford, 1991, pp 3-4.

³eMarketer, *Worldwide Social Network Users: 2013 Forecast and Comparative Estimates*, 2013, pp 24-46

⁴Internet started its life as ARPANET, a US military network for closed loop communication, and that legacy has informed to a certain extent the nature and direction of its development.

⁵Aadhaar is a digital identity card being issued to Indians by the government that stores biometric, social and demographic data of a person. Till March 2014, 600 million Indians have been issued the card. The target is to issue it to all 1.2 billion Indians by the end of 2016..

⁶Adam Sadilek, John Krumm, 'Far Out: Predicting Long-term Human Mobility', Proceedings of the Twenty-Sixth AAAI Conference on Artificial Intelligence, August 2013, pp 814-815.

⁷Sean Follmer, Daniel Leithinger, Alex Olwal, Akimitsu Hogge, Hiroshi Ishii, 'InFORM: Dynamic Physical Affordances and Constraints through Shape and Object Actuation, MIT Media Lab, November 2013, pp 1-5

⁸Ibid pp 7-8.

⁹A Mumbai-based start-up Traffline has built a real-time traffic information service that helps urban commuters in Mumbai, Delhi and Bangalore avoid traffic jams through a mobile application that integrates digital maps, Twitter updates, voice web and traffic details.

¹⁰Bitcoin is a distributed, peer-to-peer digital currency that functions without the intermediation of any central authority. Bitcoin is called a cryptocurrency as it is decentralised and uses cryptography to control transactions and prevent double-spending. Please go to <http://bitcoin.org/bitcoin.pdf> to access the originator Sakoshi Nakamoto's paper 'Bitcoin: A Peer-to-Peer Electronic Cash System.'

¹¹Arjun Appadurai's body of work extensively details global cultural flows of ethnoscaples, mediascaples, technoscaples, financescaples, ideoscaples.

¹²Manuel Castells, *The Rise of the Network Society*, Wiley-Blackwell, West Sussex, 2010, pp XVII-XVIII.

¹³Usenet is a worldwide distributed Internet discussion system from the general purpose UUCP dial-up network architecture. Duke University graduate students Tom Truscott and Jim Ellis conceived the idea in 1979 and it was established in 1980. Users read and post messages to one or more categories, known as newsgroups.

¹⁴Like several technologies associated directly or indirectly with cyberspace, RFID also had a military dimension. In 1945 Lev Sergeyevich Termen, also known as Léon Theremin, invented an espionage tool for the Soviet Union that retransmitted incident radio waves with audio information, and this device is considered to be a predecessor of RFID technology.

¹⁵Sally A. Applin, Michael Fisher (2011), 'A Cultural Perspective on Mixed, Dual and Blended Reality', *IUI Workshop on Location Awareness for Mixed and Dual Reality*, Palo Alto, California. Accessed @ <http://www.dfki.de/LAMDA/accepted/ACulturalPerspective.pdf> on October 08, 2014..

¹⁶This is part of a conversation with 25-year-old Sunil Dalvi who is a Maharashtrian and a member of the Shiv Sena (right-wing conservative party) and has not passed basic school education. Dalvi has never been to Kolkata, considered to be India's football capital, yet has acquired the nuances of football and a Global logic of what should constitute a totality of urban experience. A similar *imaginary* was shared by Zubin Mehrotra, who is a banker educated in the United Kingdom, and working with a multinational finance company in Mumbai.

¹⁷Manuel Castells is the originator of this epistemological tool.

¹⁸Such narratives routinely inform discussions on quality of life, especially on the overarching logic of creating green spaces.

¹⁹Ibid, pp 445-446.

²⁰Nandan Nilekani during his talk *India's Transformation: The Role of Information Technology at the Australia-India Institute, University of Melbourne, October 16, 2013*.

²¹Henri Lefebvre has written extensively on the social production of space.

²²Second Life is an online virtual world, developed by Linden Lab, which is a company based in San Francisco. It was launched on June 23, 2003 and currently has over 1 million users. The virtual world can be accessed via Linden Lab's own client programs or third party applications. Second Life users create virtual representations of themselves, called avatars, and interact with other avatars, places or objects. They can explore the world, which is known as the grid, and meet other residents, socialize, participate in individual and group activities, build, create, shop and trade virtual property and services with one another. Second Life features 3D-based user-generated content. It also has its own virtual currency, the Linden Dollar, which is exchangeable with real world currency..

²³Ferdinand Tönnies evolved this conceptual distinction as a tool to understand the ordering of social ties (now social networks).

²⁴The high-rise Indiabulls Centre once housed a housing complex (chawl) of textile workers from various parts of India who used to work in the nearby textile mills. Most of the mills have now been converted to office complexes and descendants of textile workers now work mainly as janitorial staff or as mall helpers.

²⁵This imagery informs the narratives of 'enclaves of global urbanity', which also sometimes become the ideal urbanity.

²⁶Such a sentiment underlines the larger narrative of the sensory and olfactory realignment of modernity.

²⁷The changing contours of the narratives surrounding the concept of public space in Mumbai also need to be explored. The infusion of the 'green logic' of the global environmental movement into the conceptualisation of urban space is amplifying the imaginary of public space as a specific configuration of a 'park-driven recreation and leisure.'

²⁸ Christian Ulrik Andersen, Søren Pold, 'The Scripted Spaces of Urban Ubiquitous Computing: The Experience, Poetics, and Politics of Public Scripted Space', *The Fibreculture Journal*, Issue 19, 2011, pp 3-4.

²⁹The black swan theory describes a seemingly random event that has a large and unexpected impact on other seemingly unconnected events or situations. The theory was developed by Nassim Nicholas Taleb..

³⁰<http://www.wired.co.uk/news/archive/2013-07/01/mit-media-lab-kevin-slavin/viewgallery/cn12411>

³¹Ibid, pp 5-9.

³²Lavasa is a private, planned city spread across 25,000 acres being built near Pune. It is stylistically based on the Italian town Portofino and is being developed by Hindustan Construction Company (HCC).

³³Alyque Padamsee, CEO, AP Amalgamated and Naushad Forbes, Vice-chairman, CII Maharashtra while speaking at July 26, 2007 release of the McKinsey-Bombay First report Mumbai Vision 2015.

³⁴ Sanjay Mehta, Chief Executive Officer, MAIA Intelligence (<http://egov.eletsonline.com/2011/11/a-ceo-for-mumbai/>).

³⁵Amitabh Kant, who was the CEO of Delhi-Mumbai Industrial Corridor (DMIC), explaining the concept of future cities in India in a blog (<http://smartcitiescouncil.com/article/how-india-hopes-cut-front-smart-city-line-and-how-ibm-plans-help>).

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