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QRcoding the Smart City

Dystopian governmentality and the digital infrapolitics of the post-pandemic present

QR-codification de la Smart City : Gouvernementalité dystopique et infrapolitique numérique dans le contexte post-pandémique

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Abstracts

English Français
QR (Quick Response) codes have become ubiquitous graphic artifacts within our post-pandemic cityscapes, mediating a great variety of activities and reconfiguring routine practices and daily interactions. Drawing on a series of ethnographic observations on the use and display of QR codes collected in different global cities (Milan, New York, Jakarta, Toronto), this article explores the ideological and semiotic infrastructures underlying the contemporary trope of the 'Smart City' and the role of digitally encoded data in organizing information and conduct in our post-pandemic present. It is argued that the new machine-readable data encoding standard called QR code lies at the heart of different representations of the future metropolis. Suspended between dystopian visions of digital surveillance and techno-optimist fantasies of cyber-metropolitan lifestyles, the actual encounters with QR code-mediated infrastructures are, in fact, the theatre of a new post-pandemic techno-corporeal regime wherein new forms of ideological and sensorimotor compliance are interspersed with unintended glitches and artful acts of defiance. The article discusses the interplay between acts of ideological and corporeal alignment with the contemporary conceptual construct of the 'Smart City' and the emerging infrapolitics of alternative digital textualities. In so doing, it describes, how in the post-pandemic world, QR codes are embedded in a complex history of remediation and repurposing. At once infrastructures of consumer desire and statecraft surveillance, they generally interpellate users in ways that conflate the role of citizen and consumer. The analysis, however, shows how QR codes can be openly contested or occasionally "remediated" and used to unsettle expected outcomes, redirecting users to innovative forms of political action and aesthetic intervention.

Les codes QR (Quick Response) sont devenus des artefacts graphiques omniprésents dans nos paysages urbains post-pandémiques, médiatisant une grande variété d'activités et reconfigurant les pratiques routinières et les interactions quotidiennes. S'appuyant sur une série d'observations ethnographiques sur l'utilisation et l'affichage des codes QR recueillies dans différentes villes du monde (New York, Jakarta, Milan), cet article explore les infrastructures idéologiques et

sémiotiques qui sous-tendent le motif contemporain de la ‘ville intelligente’ (*smart city*) et le rôle joué par les données codées numériquement dans l’organisation de l’information et des conduites dans notre présent post-pandémique. Il soutient que la nouvelle norme d’encodage de données lisibles par machine, appelée QR code, se trouve au cœur de différentes représentations de la métropole du futur. Prises en tension entre les visions dystopiques de la surveillance numérique et les fantasmes techno-optimistes des modes de vie cyber-métropolitains, les rencontres avec les infrastructures médiatisées par le QR code sont le théâtre d’un nouveau régime techno-corporel post-pandémique dans lequel de nouvelles formes de conformité idéologique et sensorimotrice sont perturbées par des ratés technologiques involontaires et des actes rusés de défiance. L’article examine l’interaction entre les actes d’alignement idéologique et corporel avec la construction conceptuelle contemporaine de la ‘ville intelligente’ et l’infrapolitique émergente des textualités numériques alternatives. Ce faisant, il décrit comment, dans le monde post-pandémique, les QR codes s’inscrivent dans une histoire complexe de remédiation et de réaffectation. À la fois infrastructures du désir du consommateur et de surveillance de l’État, ils interpellent généralement les utilisateurs d’une manière qui confond le rôle du citoyen et celui du consommateur. L’analyse montre cependant comment les QR codes peuvent être ouvertement contestés ou occasionnellement « remédiés » et utilisés pour déstabiliser les résultats attendus et rediriger les utilisateurs vers des formes innovantes d’action politique et d’intervention esthétique.

Index terms

Mots-clés : anthropologie, architecture, geste, mediation, pandémie, espace public
Keywords: anthropology, architecture, gesture, mediation, pandemic, public space

Full text

> Disciplinary societies have two poles: signatures standing for individuals, and numbers or places in a register standing for their position in a mass [...] In control societies, on the other hand, what is important is no longer either a signature or a number, but a code.
>
> Deleuze, *Post-scriptum sur les sociétés de contrôle*, 1990.

1. Contactless frictions and Smart City fantasies

1 It is a late July early afternoon in the bustling and swarming Central railroad station in Milan, a mind-numbing heat wave has been plaguing the city during the last three-plus weeks. I scramble to reach the tracks located on the upper level. Since the railway terminal underwent a 100 million euros renovation during the first decade of the new millennium, it has become impossible to reach the trains directly from the main entrance located on the street: the old escalators leading to the tracks were removed and replaced with a zigzag automated walkway ramp that exposes travelers to a meandering detour through a commercial concourse in order to be able to reach the train they need to board. The only quick and direct access to the tracks is from a side entrance, where a non-automated ramp of stairs spares travelers from wasting crucial minutes in an unwanted predeparture shopping detour.[1]

2 In the effort to save time, I decide to brave the summer heat and the weight of my overpacked carry-on luggage and opt for the non-automated short-cut. The steep lateral stairway, however, proves extremely challenging (even for a relatively fit and temporarily able-bodied individual). I strenuously reach the upper level only to be confronted with a disconcerting view: most trains are delayed for over 45 minutes and a jammed crowd nervously stares at the large electronic display boards waiting for details on their rescheduled departures. Meanwhile, disorderly lines of overwrought individuals are stuck in front of the turnstiles, frantically trying to access the tracks. As I quickly discover, a radical change in the usual practice has been implemented: unlike the relatively relaxed checks usually performed by railway staff, now the row of

turnstiles leading to the tracks has morphed into a rigorous digital checkpoint: to move past it, passengers are now required to pull out their smartphones, retrieve their QR code train ticket, and scan it on the turnstile digital monitor (Image 1). Only a few spots are left open for holders of paper tickets who are inspected by a human employee. As a regular bullet train commuter convinced to know the system inside out, I am caught unprepared. Infrastructural transformations are sometimes sudden and radical affairs…

Image 1

Milan Central railroad station, July 19, 2024.

Screenshot by the author.

3 In this article, I examine the novel interplays of digital, ideological, and material elements underlying contemporary forms of public conduct regimentation vis-à-vis the creative "infrapolitics […] of low-profile forms of resistance" (Scott 1990, p. 19) afforded by digital textualities and infrastructures. As Deleuze (1990) preconized in his dystopian sketch of the then emergent information society, millennial control societies rely upon new oxymoronic forms of enabling coercion and soft power, whereby individuals are tacitly governed without the deployment of explicit prohibitions and physical infrastructures, but through commercial incentives, data-gathering mechanisms, and constant and quotidian geolocation (Elmer 2003b).[2] While the contemporary regimentation of desires and behaviors is enacted through new modes of techno-surveillance and data-driven marketing, my aim is to provide a few snapshots of how our heavily digitized lives depend on complex assemblages of material, digital, and ideological infrastructures. These, as we will see, not only demand human compliance, but may also become the target of defiant acts and contestation practices, which pivot on the very intersection between the visible and the unseen enabled by the (digitally encoded) structure of the QR code interface.

4 In the train station scene described above, the implementation of a novel QR code access system tacitly entails a series of prerequisites on behalf of the passengers: that they know how scan a QR code, that they own a smartphone, that they have the phone within hand's reach, that the phone is charged, that the internet connection (be it the station free WIFI system or the passenger's own data plan) is up and running to promptly retrieve the code, and that each individual in the line has the ability to quickly scan their QR codes. Or else, take the example of food ordering enabled by QR codes, which once scanned allow customers to browse the menu, place their order, and contactless pay their bill through their smartphone. Aside from requirements similar to those previously listed for train passengers, QR code table ordering entails (1) equipping tables with conspicuously positioned QR codes; (2) designing user friendly digital (usually web-based) menus to be linked to the table QR codes; and (3) acquiring the hardware instruments (e.g., payment terminal, printer, internet router, KDS or kitchen display system, etc.) necessary to set up an integrated point-of-sale (POS) system, which operates like a virtual restaurant manager capable of taking

orders, transmitting them to the kitchen or bar, and ultimately send them to an electronic cash register for payment.

5 These bundles of physical and digital technologies are meant to radically rewire entrenched routines and methods, affecting the sedimented "ways of knowing" and "accumulative practices" underlying the organization of a community's "signature activities" (Goodwin 2018, pp. 238-239).[3] On its website, Lightspeed (2021), a Canadian company specialized in providing e-commerce solutions and "fast and intuitive platforms" to streamline service interactions, describes, with ethnomethodological analytical precision, how adopting a POS system will restructure routine interactions:

> For as far as we can recall, when a customer is ready to place an order, they'll crane their neck, lock eyes with waitstaff, and then smile affirmatively to indicate that they're ready to order. This may not always be the most efficient system, but it's a system that customers know and are used to. To replace this learnt behavior with a new way of ordering will cause a shift (however welcome or unwelcome) in their familiar dining experience. While Table Ordering is designed to address inefficiencies and streamline workflows, it nonetheless presents a change for everyone–requiring training for staff and reinforcement for customers. (Lightspeed, 2021, quoted in Nguyen 2022, p. 12).

6 The deployment of QR codes in bars and restaurants has skyrocketed in the aftermath of the Covid-19 outbreak. Most venues, however, have not opted for a fully automated system: while customers are required to access the menu through scanning a QR code, most places still rely on analogic human-centered interaction for placing orders and settling the check (Koay and Ang 2024).[4] It was in the second half of 2020 that I first encountered a sudden and widespread deployment of QR code menus throughout restaurants and bars in New York City, where I was living at the time. After being severely hit by the first pandemic wave, New Yorkers were trying hard to resume their social life of outings and restaurant dining, thus becoming more appreciative of safely sitting and meeting outdoors.[5] I would typically meet with a friend in one of the newly created dehors that had sprouted around the city—a remarkable novelty in a place where, due to municipal regulations and extreme summer and winter temperatures, outdoor dining had never been popular.[6] It quickly became apparent that, at least among my circle of acquaintances and friends, QR code menus were initially met with remarkable skepticism: out of privacy concerns or unfamiliarity with the system, my companions would normally refuse to conform and scan the code with their own phones and would generally ask me to lend them my phone to view the menu. These subtle "acts of delegation" (Johnson, a.k.a. Latour, 1988), however, produced rather cumbersome ordering outcomes, ultimately defeating the hygienic mandate that had allegedly prompted the introduction of contactless QR code-mediated menus.

7 As these anecdotes illustrate, for these processes to be glitch-free, restaurant-goers and train passengers are to belong to a "semiotic community" (Kockelman 2005, p. 261) of QR code users.[7] Put differently, the new QR code routines depend on complex interplays between digital, material, as well as moral-ideological infrastructures. Hinging on complex assemblages of tacit embodied practices, explicit discursive narratives, and verbal injunctions (e.g., "scan here!") or suggestions (e.g., "scan the QR code on the side for more information"), QR codes are elusive semiotic objects. They may be mobilized for the production of promotional representations of urban innovation and simultaneously function as pragmatic tools for organizing new routines of metropolitan conduct, epitomizing the hazy distinction between forms of ideological conformity and acts of corporeal compliance (Althusser 1970).

8 More specifically, my analysis highlights how QR codes entail a combination of linguistic and corporeal forms of alignment with and defiance of the contemporary conceptual construct of the 'Smart City'. On the one hand, by pointing to a digital elsewhere, QR codes materialize fantasies of a futuristic cybernated cityscape, operating as "performative indexes" (Silverstein 1976) of the ideological representations boosted by urban planners and developers. On the other hand, they function as powerful infrastructural apparatuses aimed at channeling practices and regiment behaviors.

Occasionally, however, QR codes may work as subtle tactics of sabotage and counterinformation.[8] I adopt "a patchwork ethnographic fieldwork" approach (Tsing 2005, p. x) to chart out the global processes of QR code circulation and thus gain an understanding of the complex configurations of verbal and non-verbal injunctions and affordances they underlie. I draw on a portfolio of different methods and a range of ethnographic materials collected in various global cities: interactions between humans and infrastructures I observed in public places; interviews with city dwellers and administrators; newspaper articles and debates unfolding on social media; public discourse and public policies on how to implement progressive metropolitan efficiency or conservative securitarian measures; stickers and flyers disseminated across various contemporary cityscapes, etc.[9] In so doing, my aim is to instigate a dialogue between semiotics and various strands of social and anthropological inquiry (e.g., urban and infrastructure studies, linguistic anthropology, media theory, praxeological approaches to urban materialities, etc.) and thus develop an analysis of the role of QR codes in restructuring urban routines and daily practices and mediating competing ideological representations of contemporary urban life. In this sense, QR codes produce complex constellations of individual actions and collective fantasies, of embodied dispositions and discursive narratives.

9 I argue that to be an apt QR code user, one is not only expected to have a smartphone and know how to use its scanning function but should also imagine oneself as a 'Smart City dweller,' for an important role in establishing new digital-cum-embodied routines is played by how the urban space is collectively imagined and ideologically construed. In her analysis of the hydraulic infrastructure of post-apartheid South Africa, Von Schnitzler (2008) showed how the introduction of the water meter (originally invented in Britain) was not simply deployed to regulate water use, but functioned as a device—a dispositif, to say it with Deleuze (1989)—for producing a new type of responsibly parsimonious and self-monitoring citizen. On the one hand, the post-pandemic QR code, like the post-apartheid water meter, is a device for producing a new type of (smart) city user; on the other hand, Smart City celebratory representations are a necessary imagination infrastructure for establishing new corporeal and ideological dispositions and metropolitan forms of belonging.

10 Emerged at the millennium's turn, the concept of the 'Smart City,' has become increasingly popular to designate a new vision of the cosmopolitan and futuristic global metropolis pivoting on the seamless interaction between the development of ICT infrastructures, transparent and efficient administrative apparatuses, and a highly educated and digitally literate population endowed with progressive and entrepreneurial attitudes to create an inclusive community with equal access to high standards of life quality (Florida 2022). The Smart City trope is ambiguously positioned. If, on the one hand, municipal administrations and marketing consultants frequently deploy it as a ready-made rebranding narrative to craft promotional self-presentations of the most diverse urban environments (Hollands 2020; Zuboff 2019); on the other hand, the Smart City conceptual framework may be deployed to analyze urban contexts through a Latourian (2005) actor network theory (ANT) approach. By assigning cognitive and perceptive abilities ('smart') to the assemblages of human and non-human actors, organic and inert elements, material and intangible assets that we call 'cities', the notion alludes to an appealing non-anthropocentric view of social agency.[10] In this sense, the 'Smart City' can be understood as an urban network where technology and objects have the power to affect other elements of the network, humans included.

11 In what follows, my aim is to discuss the role of QR codes in crafting the 'Smart City' both as an ideological construct and an emerging structure of interpellation (Althusser 1970) produced through a visual and gestural ecology of visible graphic artifacts, invisible encoded textualities, and implicit micro-practices. But before exploring the dual role of QR codes as indexical traces and operative devices of the Smart City, let us go back to the account of the events that I described at the beginning.

2. Securitarian measures and infrastructural glitches

12 The implementation of the QR code-mediated access to Milan Central Station's tracks had been established by a regulation issued by the city's Prefect in collaboration with RFI (Italian Railway Network).[11] Shortly followed by the "Safe stations pact " ("PATTO STAZIONI SICURE)", issued on July 31, 2024 and signed by a multilateral coalition of governmental agencies, civil society organizations, and private sector business associations, the new QR-code requirement was officially motivated by securitarian reasons: "increase security and limit access to travelers only."[12]

13 Aside from the scenes of panic and distress that I witnessed during the hour I spent waiting for my severely delayed train, a Facebook public forum offers an interesting overview of the heated debate ignited by the new QR code access system. The nearly five hundred comments (as of August 2024), each containing several threads of replies and rebuttals, indicate a sharp divide between techno-enthusiasts and critics. Here are some excerpts:[13]

> A.R
> I went through it [the turnstile] this morning and had no issue whatsoever... You do not need a University degree to scan a QR code, you simply have to tap the QR code ticket and the turnstile opens automatically. Evidently, those who complain are unable to perform such a simple gesture.
>
> S.M. ((replying to A.R.))
> Well, A.R. and what if the smartphone turns off or gets stolen? This is a shitty idea for sheep-head people (*Un'idea del cazzo da pecore!*). You [techno-enthusiasts] believe to be free, but in fact you are slaves.
>
> VVP
> I went [to the station] today and in two minutes I witnessed people going crazy, threatening to take legal action [against railway management] for having kidnapped and illegally prevented passengers from getting on their train. What a shitty idea these turnstiles are!
>
> Xx ((replying to VVP))
> This system is operative in all the main European capitals
>
> PC ((replying to VVP))
> I guess it is the people that need to evolve

14 Interestingly, the division seemed to evoke two different types of space-time allegiances. The former group expressed an ideal association with a cosmopolitan elsewhere inhabited by skillful Smart City users, while the latter group appealed to a nostalgic rhetoric of a time past characterized by feelings of human solidarity and affection and by a vanishing ecology of social practices:

> GT ((replying to VVP))
> Turnstiles are used all over the world
>
> GB ((replying to VVP))
> [turnstiles] already exist everywhere in the world. If one is unable to tap a ticket on an electronic display, then they should be placed in a RSA (retirement home for the elderly) instead of busting our balls
>
> MR
> I cannot understand these idiots' negative reactions. Hey people, have you ever travelled anywhere? This system is in place in all the major European cities
>
> SC ((replying to MR))
> This bad habit of comparing Milan to "European capitals" makes no sense. Milan does not have any European-city feature, it is the most overrated city in Europe.

15 The techno-futurists' argument on the planetary diffusion of QR-code equipped turnstiles encountered sharp criticism from the advocates of the good old days of unregimented access:

> EG
> You and your 'it's done all over the world' should be locked up in prison [...] Once upon a time there were no turnstiles or shit like that, you could get to the trains easily without any obstacle, relatives would help each other with loading their luggage onto the train and they waited for the train to depart in complete safety, there were no shoplifters who robbed the old people... They started with the closures, elimination of parking spaces, fees to enter the compartment to accompany relatives, etc., and there's always some idiot who says 'This is how it is done all over the world!' We do not have to imitate 'the rest of the world's bullshit' [...] 'It's done all over the world'... Go to hell 'all over the world'
>
> LD
> Only in Italy do they not even know how to tap a ticket on a turnstile. This is 2024, people should wake up
>
> LB ((replying to LD))
> we might as well be in 2050, but no one is going to force me to buy my ticket online just because 'that's how everyone does it'…I love hard-copy paper tickets
>
> MR
> What's the point of making such a fuss, just hover the code on the screen and you will be able to go through. It's the same procedure you have on the tram with the new ticket!!! Come on! This is not rocket science!!!!!
>
> RT
> How nice it used to be when a person would surprise you and unexpectedly pick you up at the track???? [Or when they would escort you to the train] and look at you through the window from the tracks, waiting for the train to leave. Now all of this is lost. Not to mention that if you need help because when you are 'loaded like a mule' you cannot be escorted and helped carry all your luggage. [...]. Thieves and gypsies find a way through the turnstiles all the time anyway
>
> RM ((replying to RT))
> These are all excuses, the world is changing, people travel differently today, no one travels by train with 4 or 5 suitcases anymore, and all suitcases today have wheels. You don't lose the poetry if your loved one is waiting for you outside instead of at the track (where they may very well lose sight of you if they don't know what compartment you are in). I just don't understand this nostalgia for past times, which, in fact, were worse.
>
> *RT ((replying to RM))*
> *When I take the train, I normally carry a suitcase, a 2-year-old girl in the stroller with her bag. Yes, I have two hands and I generally find someone to help me get off. But wouldn't it be nice if your husband could be allowed to come right at the track and help you? Or have a friend or relative help you put the luggage on the overhead rack instead of having to ask for help from others? The turnstiles' function is only to prevent bad people from passing through, but what's the point given that when you get out [of the station] it's just like the Bronx?*

16 As these animated exchanges testify, the infrastructural deployment of QR codes may generate complex affective investments and disjunctive moral responses. Despite the different importance assigned to technological efficiency and human cooperation by techno-enthusiasts and QR code detractors, respectively, both perspectives sampled above clearly underscore the interplay between infrastructural systems and social relations, combined with a diffuse awareness of the role of the body (and its compliance or inability) in coping with the emerging configurations of optic and haptic gestures (Parisi & Archer 2017) underlying QR code-mediated technologies. Before delving further into a closer analysis of the forms of techno-governmentality and digital infrapolitics enabled by the dissemination of QR codes, a brief account of their genealogy is in order.[14]

3. QR codes' sociotechnical genealogy: from the factory floor to all domains of practice

17 The QR code is a variably sized matrix of white and black squares (called 'modules') that represent bits of binary data: 0 for white and 1 for black modules. Their size can vary (from 21 × 21 modules to 177 × 177) depending on the amount of data that needs to be stored.[15] They can be generated at a very low cost and in a very short time, they can be quickly decoded, and they are very robust, allowing easy data recovery if some modules are damaged or not visually accessible. Currently deployed in a multitude of applications, QR codes are capable of encoding tightly packaged assemblages of data that can travel fast and be easily decoded, provided they can interact with a network of machines and humans. They are what linguistic anthropologists may call entextualized graphic artifacts (Silverstein & Urban 1996). Originally coined by Briggs and Bauman (1992), the term "entextualization" refers to the process by which context-dependent and event-bound strings of discourse achieve "textual formedness" (Silverstein 2019, p. 56), that is, become reified as an extractible, portable, bounded object, which can be detached from one discursive context and easily embedded into another. Highly encoded, portable, and context-independent, the QR-code is emblematic of the extreme forms of pragmatic and semiotic standardization produced (and required) by contemporary forms of global capitalism, which rely on digital and material networks of humans and machines (Latour 2005) and on the collusion between linguistic standardization and the expansionist rationality of scalable production (Donzelli 2019; Tsing 2013).[16] It may be argued that by being multiply encoded as modules and binary string of numbers, the textual data encapsulated within the QR code matrices illustrate novel forms of digital entextualization embedded within human-machine networks: QR codes are highly portable and context independent and simultaneously, by being completely unintelligible and semantically empty to the human eye, they call for decoding acts, thus producing a sort of forced human cooperation.[17] Coupled with a variable amount of verbal and non-verbal signage (Image 2a, Image 2b, Image 3), QR codes carry both positive and negative affordances: they allow certain actions (e.g., ordering food at a restaurant, renting a bike, accessing a public place or a commercial venue) and prevent others (e.g., freely accessing the tracks at Milan railroad station, or entering a shopping mall).

Image 2a and 2b

A vertical pole at a bike sharing station in Jakarta with visual signage (on one side) and extensive verbal guidelines (on the other).

Photo courtesy of the author.

Image 3

A QR code (coupled with minimal verbal material) enabling access to the LTC shopping mall, during the Covid-19 Pandemic, Glodok, Jakarta.

Photo courtesy of Veracious, Creative Commons license, https://creativecommons.org/licenses/by-sa/4.0.

18 The last five years saw an exponential growth in the use and the social domains of application of QR codes. Their fortune is largely the result of an accidental assemblage of factors (Greenspan 2021). Originally developed in 1994 by a Japanese engineer (Masahiro Hara) working for an automotive components manufacturer called Denso Wave, QR codes were meant to enhance the traditional barcode. These square-shaped pictographs are highly standardized systems for encoding and decoding dense bundles of information and were initially designed for the manufacturing industry as a way to track automotive components as they moved through the assembly line and thus streamline inventory work (Denso Wave 2021, de Seta 2023). Unlike their one-dimensional barcode ancestor—which is incompatible with kanji and kana scripts and can only store approximately 20 alphabetic characters (Denso Wave 2021)—two-dimensional QR codes can be scanned much faster and have larger data capacity,

affording to store up to 7000 kanji, kana and alphanumeric characters per code (Denso Wave 2021; Nguyen 2022).

19 QR codes belong to the family of Automatic Identification and Data Capture (AIDC) technologies, which are intended to collect data from an entity (e.g., an individual, an object, an image, or a sound) without manual data entry. For this reason, AIDC systems are particularly useful for managing inventory and controlling the movement of people and things situated along global supply chains. Thanks to algorithmic architectures designed to enable interoperability between protocols, AIDC systems function as a logistical technology for speeding up and streamline labor workflow and assets movement, thus facilitating connection between software applications and workplace routines (Nguyen 2022; Rossiter 2015). In this sense, the AIDC systems can be understood as pivoting on the replacement of certain human gestures (such as filling in forms or typing in characters and numbers) with novel ones (scanning codes), resulting in the production of new "embodied skills" (Goodwin 2018, p. 206) and "sociotechnical apparatuses" (Apprich and Bachmann 2017), as well as novel configurations of individual practices and collective ways of life. Furthermore, by shortening the interval between goal (be it accessing a website, paying a bill, or locating an item) and outcome, QR codes rearrange modes of desire and conduct.

20 The exceptional diffusion of QR codes outside the manufacturing and logistical domains was propelled by the release in the 2000s, first in East Asia and later globally, of smartphones equipped with digital cameras (de Seta 2023, p. 10).[18] As Hara (quoted in de Seta 2023, p. 9) explains, when the QR code was first designed, no one could imagine that one day cellular phones would be endowed with digital cameras capable of taking photos and reading QR codes. Indeed, smartphones afford to wirelessly connect to the Internet, turning the QR code into an interface for accessing websites and resources from any portable device. Thus, thanks to the unexpected convergence between smartphones, mobile internet access, and social media apps, these relatively inconspicuous black and white squares have been applied to an ever-growing range of nonindustrial uses and diverse domains of practice, functioning as an "infrastructural gateway" linking the offline with the online world (de Seta 2023).

21 Nguyen (2022, p. 18) draws a parallel between the "drive to 'QR codify" human interaction and social relations and what Rachel Plotnick (2018) termed the "buttonization" of the social world, which "emerged out of an automation and efficiency craze that sought to reconfigure how humans relate and delegate to machines". Placed atop of a restaurant table, QR codes provide access to food and drink menus and contactless payment options; stenciled on a museum wall, they unlock multimedia content regarding the exhibitions; superimposed on a shop window or a promotional billboard, they offer special discounts and access to loyalty programs. They may be scanned to join a Wi-Fi network or access a specific URL without having to type in the entire address, they can function as system of digital authentication for accessing personal information, or may be deployed for immigration and border control, or be carved on gravestones to provide access to online memorial pages for a deceased (Greenspan 2021; Nguyen 2022).

22 With the 2020 Covid-19 outbreak, QR codes were quickly embedded in government apps developed for pandemic management as well as in a variety of retail apps for mitigating the infection through contactless restaurant ordering, contactless payments, and contactless in-store click-and-collect options. The need to minimize surface-related infections led (especially in East and Southeast Asia) to the gradual elimination of restaurant physical menus, while digital payments and public transportation ticketing became increasingly QR-code based. The pandemic has normalized "QR codes in a way that would have otherwise taken as long as 5 years" (Nguyen 2022, p. 13). Despite its uneven uptake, which made it extremely common in several East Asia urban environments and relatively limited in Europe and North America (Hara 2019; Nguyen 2022), the QR code became a pervasive feature of everyday life in several metropolitan hubs around the globe.

23 Through the government-led implementation of technologies based on the combination of material structures (digital terminals and scanning checkpoints) and digital QR codes, citizens became intelligible to authorities, making their movements traceable (De Seta 2023; Greenspan 2021; Lin *et al.* 2020; Marelli 2023). QR codes also became crucial semiotic and governmental devices in managing international travel and the movement of people across national borders. With the gradual development of testing and vaccines, QR codes became the primary platform for encoding passengers' testing status and vaccine compliance (Marelli 2023). In countries like Italy and France, QR codes progressively supplanted other forms of pandemic-related textuality, such as the signed self-certifications, which had been first introduced in March 2020.[19] Emblematic of the signature-based disciplinary societies Deleuze (1990) refers to, self-certification forms had to be downloaded, printed, filled in, signed, and presented to police officers in case of random checks. In Italy, for example, self-certifications were initially required for any intra-municipal or inter-municipal movement, becoming the main textual infrastructure of the lockdowns enforced in 2020.[20] With the availability (and the semi-compulsory enforcement of) vaccines, manually signed self-certifications were replaced by QR-coded vaccination certificates, which in Italy became known as the Green Pass.[21]

4. Signature-based versus code-based pandemic management

24 As Deleuze (1990, p. 5) outlined, "signatures standing for individuals" were a key semiotic apparatus within the disciplinary societies that reached their complete form between the eighteenth and the twentieth century.[22] The QR-coded certificates, implemented in Europe and North America only in mid- to late 2021, mediated a transition from the indexical regime of personhood implied in the signature-based disciplinary model to a new modular paradigm of governmentality (the argument is developed in section 5). Not only QR-coded certificates automated previously established manual form-filling routines, but they also enabled a transition to a translinguistic standard. Indeed, thanks to the possibility of multilingual encoding, vaccination QR codes were particularly suitable for cross-border checks in the context of international travel. Instead of the cumbersome and unwieldy paper-based system of hardcopy forms and documents, digital certificates streamlined the workflow of pandemic management. While the self-certificates were necessarily tied to a specific language, the encoding of Covid test results and vaccination status into the novel bidimensional graphic artifacts afforded bypassing national language barriers and granted enhanced forms of governmental interoperability.[23]

25 Indonesia (the country where I have been doing fieldwork since the late 1990s) was quick to follow the example set by China. As the world's epicenter of the viral outbreak, China had played a pioneering role in the embedding of QR codes within forms of digital and corporate-driven governmentality. Since early 2020, each of its 900 million residents had been provided with a QR code tracing app aimed at encoding individuals' infection history and vaccination status and regulating venue access (de Seta 2023).[24] Indonesia drew extensively from the Chinese model and swiftly embedded QR code technologies in its pandemic and, more recently, post-pandemic forms of digital governmentality. Launched as early as March 2020, the Indonesian national QR code health registration scheme, called PeduliLindungi, operated as a super-App endowed with multiple functions.[25] In addition to monitoring users' movements and sending them alerts regarding risk zones, PeduliLindungi could be used to download vaccination certificates, retrieve Covid-19 test results, and provide access to public places. Indeed, while downloading the App was voluntary for Indonesian citizens and residents, installing it on one's phone became a mandatory requirement to access public venues and public transport across Indonesian urban areas. Access to public areas became

mediated by the act of scanning QR codes at checkpoints placed at the entrance of certain locations, turning PeduliLindungi into a kind of normative access infrastructure (Image 3).

26 The sudden shift to new forms of techno-surveillance raised a series of concerns regarding the App's technological ability to guarantee users' privacy. In the aftermath of PeduliLindungi's release, several human rights organizations wrote an open letter to the Minister of Communication and Information Technology demanding more privacy safeguards. When PeduliLindungi was launched, no application privacy policy was stated on Apple Store or Google Play, and, thus experts asked the government to protect users' right to privacy (Jakarta Post 2020). Indeed, according to a report from the Citizen Lab, Munk School of Global Affairs (Lin *et al.* 2020), the application collected a great deal of unnecessary data and allowed access to users' photos and files: while of no use for the purpose of contact tracing, users' geolocation, full names, phone numbers were stored on Telkom Indonesia's server increasing the risk of a data breach. Furthermore, PeduliLindungi faced the competition of a variety of other similar Apps and platforms released by individual municipalities, which developed their own signature App as a strategy to authenticate themselves as actual smart cities. Several Jakarta residents I encountered between 2022 and 2024 expressed a generalized sense of digital surveillance overload and discomfort about the pandemic and post-pandemic Apps proliferation, which, according to one of my interlocutors, turned attending to governmental Apps into a part-time job.

27 Despite the technical shortcomings and users' concerns, PeduliLindungi paved the way for a stronger push toward the digitization of Indonesia's administration. In early 2022, the Ministry of Home Affairs released an all-encompassing Digital Population Identity system (Identitas Kependudukan Digital, or IKD), aimed at consolidating within a single QR code App a variety of proofs of identity, including ID Card (KTP), birth certificate, Family Card (KK), taxpayer identification number, Health Insurance, Employment Insurance, Vaccination Certifications, etc. A year later, the Ministry of Health launched a new version of PeduliLindungi, now transformed into an integrated public health platform aimed at empowering Indonesian citizens by enabling them to better monitor their health and thus take charge of their own well-being, as prescribed by neoliberal approaches to healthcare (Rose 1990).

28 As they migrated from the manufacturing industry to broader domains of social life, QR codes exported the logistical rationality of tracking assets and managing inventory typical of the factory floor into the management of everyday life. During the Covid-19 viral outbreak, QR codes became integrated into new forms of techno-governmental pandemic management, turning people's bodies and behaviors into accessible sources of data. After the pandemic, the deployment of QR codes within contemporary forms of digital governmentality produced novel articulations of subjectivity and interpellation (Althusser 1970), which required people to take on "infrastructural responsibilities" and render themselves legible to data controllers (Nguyen 2022, p. 18).

5. Smart governmentality: from disciplinary surveillance to modular control

29 In the short and influential essay from which this article's epigraph is drawn, Deleuze (1990) reflecting on Foucault's work on governmentality contrasted the disappearing disciplinary societies whose project was to produce environments of enclosure (prison, hospital, factory, school, family) with the emerging societies of control, which are based, instead, not on enclosures, but on modulation. Unlike the biopolitical project underlying previous formations, the emerging dystopian societies of control function through a sieve-like form of governmentality enabled by "machines of a third type" (i.e.,

computers) and operating through “codes that mark access to information or reject it” (Deleuze 1990, p. 5-6). In this perspective, contemporary societies of control function not so much by creating enclosures, but rather by collecting information from mobile subjects through “geographically dispersed technologies” (Elmer 2003a, p. 236).

30 As Roger Clarke pointed out (1988, p. 499), new information and communication technologies enable “the systemic use of personal data systems” and the collection of big data to monitor the actions of individuals and communities, producing novel forms of surveillance, which he termed ‘dataveillance’. As demonstrated by empirical studies, the majority of the most popular QR code readers available on the Apple App Store and Google Play marketplaces are not passive apparatuses but devices for capturing and transmitting the contents of all scanned QR codes to remote third-party servers (Elmer 2003b; Smith & Kollars 2015; Brusseau 2020). Unbeknownst to most users, “QR code scanners relay user data back to developers regarding the content scanned, the time the item was scanned, and even the global positioning system (GPS) coordinates of the smartphone at the time, as well as numerous other data elements which may be of interest to the particular application developer” (Smith & Kollars 2015, p. 158). These aggregated sets of data can also be used to set prices of goods and services and may be profitably sold to corporations, insurance agencies, and credit-granting agencies.

31 Within the “increasingly dispersed and automated infoscape” (Elmer 2003a, p. 241) produced through the emerging ecosystem of QR code-based Apps, the body of smartphone users becomes imbued with moral and sensorimotor obligations. As I described in the opening vignette, the vehement critiques moved to the recalcitrance or ineptitude demonstrated by those who were unwilling or unable to scan their ticket reveal how the novel QR-code mediated forms of governmentality depend on specific articulations of individuals’ cognitive dispositions and embodied conduct. Indeed, to generate data about itself through its own movements, the body is to be made legible through the enactment of specific forms of moral, cognitive, and practical routines. Indeed, QR code decoding depends on “media braiding” (Parisi and Archer 2017), that is, the weaving together of image and touch through the synchronizing of optic and haptic forms of engagement on behalf of the user. Despite the portability enabled by their high coefficient of entextualization, QR codes rely on complex assemblages of digital and material infrastructures combined with embodied skills and deontic norms of conduct (i.e., “scan here”): to use QR codes to set off specific chains of events (order a meal, pay for a service, obtain a voucher, provide credentials to access a venue, etc.), individuals need to open and position their smartphone camera so that the QR pattern can be read and decoded, tap on the link thus decoded, and follow the instructions appearing on their phone display.

32 As Althusser (1970) pointed out, far from being a simple set of beliefs, ideology is made of material practices that interpellate and constitute individuals as subjects. Ideological hailing demands recognition on behalf of individuals who are expected to respond through specific corporeal practices. Ideologies, in other words, demand the subject’s embodied “uptake” (Austin 1962). In this perspective, QR code scanning participates in a new form of interpellation that likens citizens to consumers. Such overlap is particularly vivid within the ‘Smart City’ digital ecosystem, which demands similar sets of embodied skills whether one needs to order a coffee at Starbucks, get on a bus, or fill in a bureaucratic form in a government office. While discussing with me, in early 2024, the pressing need to digitize the municipal administrative apparatus to meet the eligibility requirements for participating in a competitive government-sponsored Smart Cities program, a high-ranking Indonesian civil servant strongly emphasized the link between digital governmentality and customer empowerment. As the official explained to me, the transition from an unwieldy and cumbersome system based on manually typed paper files to a world-class paperless public service aims to produce new standards of digital efficiency and interoperative collaboration, eradicate entrenched corruption and inefficiency, streamline administrative bureaucracy, enhance transparent accountability, and empower the citizenry. Envisioning a radical transformation in governance practices, my interlocutor drew a parallel between the

business world and the private service sector: “Today, customers are no longer passive consumers: they have adopted a proactive and dynamic attitude, becoming full-fledged players of digital-age business models. It is about time for citizens to be empowered through a shift to digital bureaucracy.” While the official’s triumphant narrative may warrant a modicum of caution, his insistence on likening customers and citizens underscores a critical point: the increasing overlap between the status of citizen and consumer (Brown 2003; Gershon 2011; Rose 1990).

33 Filled with a multitude of governmental and commercial mobile Apps, cities of various sizes aspiring to be considered ‘smart’ strive to project technological fantasies of a future-oriented cosmopolitan metropolis characterized by a seamless integration between the bodies of technological savvy city users and their mobile digital devices, as transpired from the comments by the Jakartan administrator or in the posts by the enthusiastic advocates of the QRcode-enabled turnstiles at Milan Central Station, discussed earlier on.

6. Encoded information and the clandestine infrapolitics of remediation

34 As Brian Larkin (2008) has argued in a book that introduced the infrastructure turn, the semiotic affordances and the materiality of infrastructures shape politics. At once encoded data matrices, enabling infrastructures, and visual emblems of the Smart City imaginary, QR codes conjure dystopian visions of digital control and sociotechnical imaginaries of cosmopolitan empowerment. In the post-pandemic world, QR codes have undergone a complex history of “remediation” (Bolter and Grusin 1999) and repurposing, whereby the distinctions between logistical, commercial, and governmental social worlds have become blurry.[26] QR codes seem to linger within an increasingly tenuous distinction between mandatory and optional modes of interpellation, ambiguously suspended between the normative rationality of compliance with state rules (epitomized by the digital certifications) and the service-based logic of market interactions (e.g., table ordering and promotional programs).[27] Are there—one may wonder—alternative forms of engagement with the seemingly pervasive collusion between governmental and commercial forms of subjectivation, underlying the digitally mediated erosion of the distinction between citizens and consumers?

35 In his famous analysis of power dynamics and social relations between ruling classes and subaltern groups, anthropologist and political scientist James Scott (1990, p. xiii) formulated the notion of “infrapolitics”. The term refers to a series of low-profile inconspicuous practices whereby relatively powerless people enact forms of covert defiance vis-à-vis domination. The micro-practices of resistance that Scott (1990) identified in his historical and ethnographic analyses range from foot-dragging to careless labor and general indifference, from slander to arson and sabotage, from feigned ignorance, dissimulation, and false compliance to small instances of pilfering, poaching, tax evasion, and desertion. The common denominators underlying this heterogeneous set of low-key forms of insubordination concern their indirectness, inconspicuousness, and quotidian reiteration. Unlike more blatant and eventful acts of defiance, infrapolitical practices are meant to avoid direct confrontation. They unfold in the everyday, often fall beyond the visible spectrum, and leave few traces in the wake of their passage (Scott 1990, p. 200). While Scott, who was a specialist of Southeast Asian peasantries, focused primarily on rural contexts, his concept of infrapolitics is currently gaining traction in the analysis of everyday forms of resistance within the current information economy and the digital labor market (Bucher 2017; Christin 2017; Heiland 2020; Shapiro 2018).

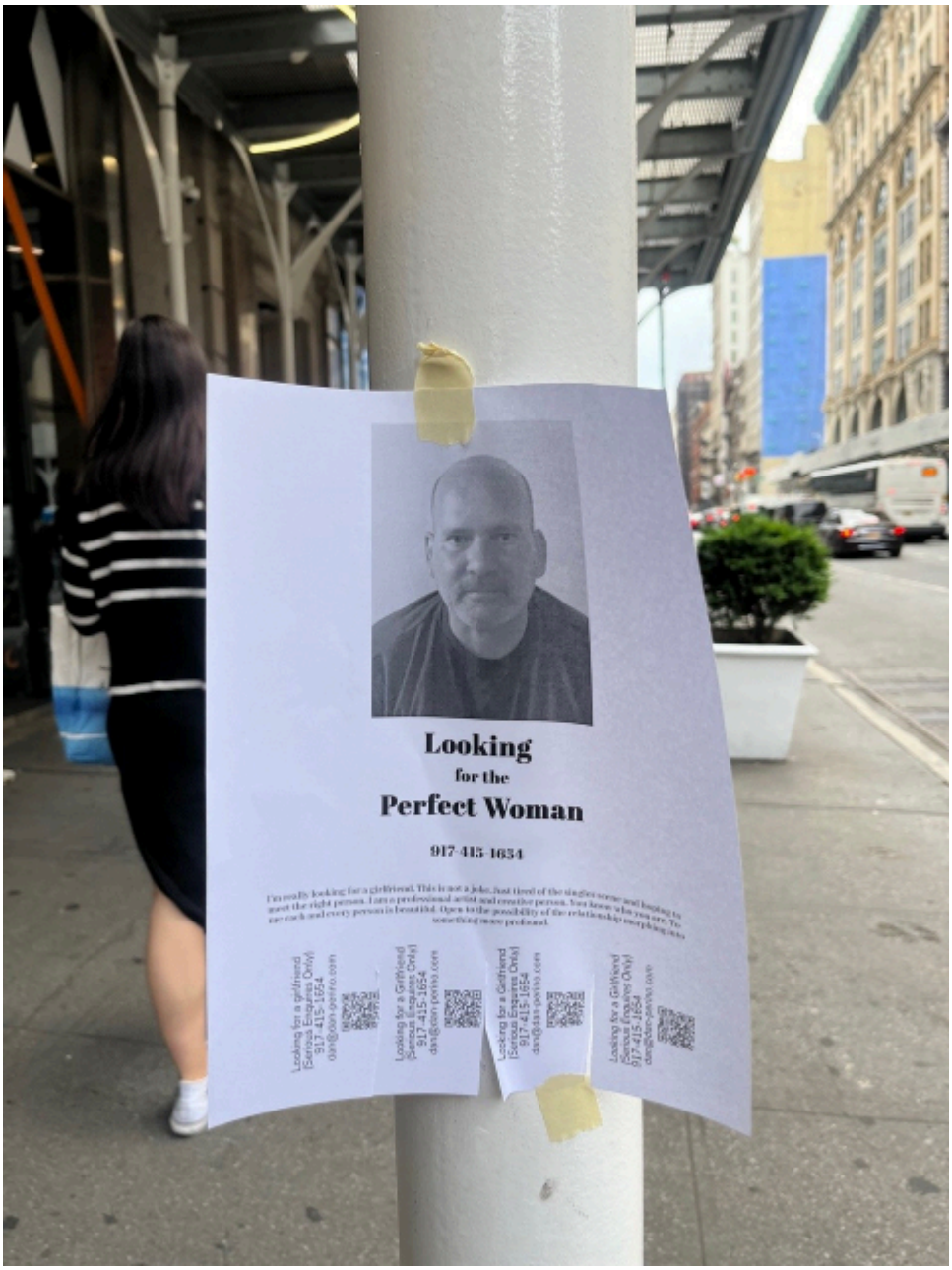
36 An interesting field of infrapolitical action revolving around QR codes concerns what, following Bolter & Grusin (1999), I may call the infrapolitics of remediation. Take the example of the counterinformation tactic deployed by Migrant Workers Alliance for

Change (MWAC), a Canadian Toronto-based activist group that advocates for migrant workers' rights. In early 2023, MWAC launched an original QR code-based campaign for fostering public awareness around the social and environmental exploitation underlying global food chains. As the organization executive director (Syed Hassan) points out: "we are putting stickers up in restaurants [...] which read 'the secret menu and then a QR code'. So, when restaurant goers are there, they think 'hey this is the new restaurant secret menu!' But when they scan it, they come upon something that *looks like a menu*, but each menu item reveals the story of exploitation and abuse of migrant farmworkers."[28] MWAC counterinformation 'secret menu QR code' exploits the material affordances of QR codes (i.e., their being relatively inconspicuous and immediately indecipherable for the human eye) and draws on a typical customer enticement tactic (creating a hype around a mystery option or set of items) to subvert marketing protocols and flip consumers' expectations, presenting them not with a new set of menu options, but with the possibility of learning about migrants' labor conditions. In this unexpected reconfiguration, the QR code unlocks, for Toronto restaurant goers, the distant lifeworld of the exploited migrants and invites them to experience a form of empowerment that does not involve the immediate fulfillment of their consumer desire, but rather invites them to take action to make a change: at the end of the 'secret menu,' users may sign a petition requesting permanent immigration status for all workers.

37 Thiburce (2019, p. 347) describes a similar QR code-mediated form of counterinformation whereby Lyon skaters have subtly challenged "the political institutions that regulate the practices of public space." In response to the municipal implementation of an anti-skate measures—consisting of a complex system of metal objects embedded within the road surface and sidewalk to prevent people from skating and rollerblading throughout the city's streets and public places—Lyon skaters have developed a subtle tactic of opposition: placing next to the anti-skate devices orange stickers with QR codes redirecting smartphone users to a website with a list of good spots where to skate in the city.[29]

38 A different instance of infrapolitical remediation involving QR codes is exemplified by the interactive textual installation by aspiring actor and artist Dan Perino. As I was walking the streets of downtown Manhattan in Spring 2024, I noticed an intriguing textual artifact: serially stuck with paper tape on vacant walls, scaffolding tubes, and traffic light poles, an unusual retro-looking flyer decked with a middle-aged man's headshot announced a search for the "perfect woman" (Image 4).

Image 4



A “looking for the perfect woman” flyer in a street of downtown Manhattan.

Photo courtesy of the author, May 2024.

39 Perino, who had undertaken similar experiments in 2014, plastering New York City with personal ads (for a girlfriend) and flyers looking to land a role as actor in films or TV shows, achieved some notoriety on social networks, made the headline in a series of local and international magazines, and inspired a few copycats around the world.[30]

40 Only apparently banal, Perino’s textual construction reveals a layered assemblage of intertextualities. His early textual performances prompted a complex remediation chain, becoming a documentary (2015), a novel (2018),[31] and an autographed flyer that can be purchased online on the artist’s website for $125.[32] Besides resonating with his flyer-mediated girlfriend searching campaign from 10 years prior (and with the related media coverage), the 2024 ad assigned a key role to the QR code. Inconspicuously placed in the detachable section at the bottom of the page, a series of QR codes appears on the old-school tear-off tabs along with Perino’s cell number and a “serious enquiry only” cautionary note. Once scanned, the QR code redirects the user to the artist’s website, casting the personal announcement and its accompanying portrait within a different frame. Thus remediated, the flyer’s main text (“I’m really looking for a girlfriend”) is no longer or not exclusively a lovelorn appeal for female companionship. By juxtaposing the personal message with the apparatus of text and images appearing on the artist’s professional website, the flyer’s metapragmatic statement (“This is not a joke”) and its confessional key (“Just tired of the singles scene and hoping to meet the

right person [...] Open to the possibility of the relationship morphing into something more profound") disclose lines of interpretation that depart from a literal reading. As they land on Perino's website with its typical architecture of clickable hyperlinks ('bio', 'press coverage', 'visual art', 'performance art videos'), users are drawn to construe the flyer as a deliberate and reflexive elaboration on the fading genre of old-school personal ads, or as a parodic representation of the contemporary search for a romantic match (or an occasional hook-up), or even a critical metacommentary on the hypermediated and hyperconsumerist digital App-based dating market, framed through the vintage aesthetics of old-fashioned paper flyers. Through the textual enhancement afforded by the QR code addition, Perino no longer appears as an eccentric desperate middle-aged singleton (which he may be, after all!), for the QR authenticates him as a more sophisticated artist and perhaps even a better date.

41 Although apparently unrelated, these examples participate in a similar marginal infrapolitics of remediation, which, like the more typical forms of infrapolitical practices discussed by Scott (1990), takes advantage of loopholes and blind spots as spaces for political action, organized dissent, and aesthetic critical reflection.

Conclusion

42 QR codes are executable matrices, whose enactment depends on a network of machines and humans. In the aftermath of the Covid-19 pandemic, they have become coterminous with the contemporary conceptual construct of the 'Smart City'. Originally formulated as a digital interface to streamline the workflow within automotive manufacturing, QR codes are now mediating new forms of techno-surveillance whereby citizens' movement through national boundaries and beyond can be tracked and monitored. During the pandemic, many governments around the world, following East Asian examples, adopted QR code technologies to track their citizens' mobility and curb the spread of viral infection. The post-pandemic urban landscapes that I briefly sketched here are disseminated with QR codes meant to open or prevent access to physical spaces or digital information portals, suggesting how the newly emerged assemblages of digital and material infrastructures do not simply enable the circulation of information, humans, and commodities, but also play a key role in crafting novel social and political imaginaries. Suspended between dystopian visions of digital surveillance and fantasies of cyber-metropolitan lifestyles, the actual encounters with QR code-mediated infrastructures are, in fact, the theatre of technical glitches, techno-optimist compliance, and infrapolitical defiance.

43 The QR codes that have gradually saturated our contemporary infosphere are somewhat elusive and ambiguous objects: densely packed with data, to the human eye they appear as semantically empty squares; apparently inert, they enclose an invitation and sometime even an injunction to perform specific gestural routines, somewhat mysteriously (for the non-specialists) they bridge the visible with the unseen, humans' analog vision with machine algorithmic processing. Despite the opaqueness of their mechanism, their ambiguity primarily stems from their dual mode of interpellation, which blurs the difference between 'you may' and 'you must' and combines in one unique graphic artifact (a square filled with enigmatic patterns of white and black modules) infrastructures of consumer desire and statecraft surveillance.[33] At the same time, QR codes may also be remediated and integrated within unexpected forms of political activism, subversive trickeries, and playful artwork, in a process that recasts their social value and political significance. As illustrated by the examples of the "secret menu" stickers or "perfect woman" flyer, QR codes may be subtracted from automated routines of digital payment, package tracking, form filling, and governmental monitoring and become embedded within innovative and surprising forms of political action, aesthetic intervention, and critical metacommentary on the commodification of desire and attention within the contemporary information economy, hence conjuring a different image of the 'Smart City'.

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Notes

1 On the debates that surrounded the Station’s new design, see Galli (2010).

2 As Brusseau (2020, pp. 4-5) points out: “Yelp tells us what’s nearby and therefore what we are near. If we search Google Maps, then knowledge about our destination is ready for dissemination even before we leave. While that locating is occurring, other opportunistic gatherers contribute distinct data sets […]. LinkedIn tracks employment histories, Amazon compiles reading habits, Facebook scrapes vacation stories, Tinder chronicles romantic tastes, retailers catalogue shopping histories […]”.

3 In line with praxiological approaches—see Warnier (2001) for an overview—Barranco (2019) and Hoarau (2004) provide ethnographic analyses of how barcode scanning reconfigured work routines and established modes of interaction for supermarket workers or newsstand customers, respectively.

4 It should be noted, however, that waiters often use POS technology to process the customers’ orders.

5 New York City’s first wave of the coronavirus pandemic remains one of the deadliest in the world, having killed almost 23,000 residents, or 0.3 percent of the city’s population, in just three months (Hammond 2023).

6 On how official top-down municipal policies, business interests, and grassroots informal responses to the COVID-19 pandemic have rearticulated the uses of public spaces in early post-pandemic New York City, see Gregory (2022).

7 Modeled on the linguistic notion of “speech community,” Kockelman’s (2005) notions of “semiotic community” and “semiotic commons” hint at unrecognized micro-infrastructures (of gestural habits and semiotic competences) underlying larger political economic systems.

8 Under certain circumstances, QR codes may function as an “architectural dispositif,” that is, as Thiburce (2019, p. 343) points out “an object that aims to program an action and inscribe a way of doing things in the materiality of the object […].”

9 The adoption of an admittedly unsystematic methodology and the choice to work with heterogenous data is deliberate. As Anna Tsing (2005, p. x-xi) points out, it is impossible to gain a full ethnographic appreciation of global connections through traditional ethnographic methods.

10 According to the ANT approach, agency is understood in line with the semantic notion of instrumentality, thus not as connected to the role of agent (imagined as a willful human individual subject). In this perspective, agency is distributed, impersonal, and multifaceted and can be understood as anything that affects and modifies a state of affairs. Not only non-humans also have agency, but agency arises from networks of relationships and from chains of causation and affectedness. For discussion of the divide between intentional notions of agency as a prerogative of human agents and impersonal and delegated views of agency, see Donzelli (2007).

11 The Prefect (Prefetto) in Italy is a high-ranking official acting as the local representative of the central government. The Prefect's main responsibilities include order and public safety, civil protection, coordination of the police forces, oversight of the regular conduct of the electoral process, suspension or removal administrators.

12 Very little public communication was provided about the new turnstiles regulation, except for a press release, dated on July, 10, 2024, by Trenord (the Lombardy regional railway service): https://www.trenord.it/en/news/trenord-informs/notices/closing-of-the-turnstiles-at-milan-central-station/.

13 The exchanges (originally in Italian) have been selected, translated and anonymized by the author.

14 Understood as "conduct of conduct" (Burchell *et al.* 1991, p. 2), governmentality is a form of rule that is no longer applied to territory (like prior notions of sovereignty) but is targeted at governing the behavior and the experience of individual human beings.

15 The modules are in turn the encoded representation of a grid of rows and columns of numbers representing data.

16 In my work on the role played by the International Monetary Fund (IMF) in the standardization the genres of political discourse in a remote highland region of Indonesia, I (Donzelli 2019) have argued that the subsumption of local ways of speaking within a neoliberal translinguistic pragmatic standard is key for disseminating new (IMF-compatible) forms of political and economic rationality. In her study of contemporary supply chain capitalism, Anna Tsing (2013) foregrounds the role of standardized practices of assessment for the rearticulation of contemporary capitalist modes of production based on control over inventory rather than labor. "Capitalism," argues Tsing (2013, p. 39), "is a system of commensuration," which relies on translation for the extraction of value through chain-like sequences of product assessment aimed at purifying the commodity from the non-capitalist "gift-like social relations" (Tsing 2013, p. 23) that went into its production.

17 I am grateful to one anonymous reviewer for pointing this out. For a semiotic analysis of the concept of affordance, see Beyaert-Geslin (2012); Basso Fossali (2017); Thiburce (2019).

18 Although QR code reading apps for camera phones have been available since the early 2000s with the 2002 launch of the J-SH09 phone, produced by SHARP for the Japanese market, it was only in the early 2010s that QR code began to gain traction in consumer settings with the diffusion of smartphones containing built-in QR code readers. Notably, the first iPhone equipped with an inbuilt QR code reader was the 2017 iOS 11 (Nguyen 2022, p. 7).

19 According to a Prime Minister's Decree issued on March 9, 2020, travelers had to complete a self-certification in two copies where they had to attest that the purpose of their trip was related to "proven work requirements" or "situations of necessity". The form (downloadable from the Ministry of Interior website) was also mandatory for all Italian citizens or residents in Italy who intended to travel to a Schengen or non-Schengen foreign country and for passengers of any nationality arriving in Italy. The form had to be handed over to the Airport Border Police staff at the time of departure.

20 A second Decree (dated March 22, 2020) established a new self-certification template, which, in addition to the previous requirement of declaring one's negative Covid-19 status, introduced the novel mandate of specifying residence, domicile, starting and destination addresses. A pdf sample of such self-declaration form to fill in and sign can be found at https://www.aeroportoditorino.it/to-live/documenti-covid/2022/allegato-4_eng_self-declaration-to-enter-italy-from-abroad_01mar22.pdf (last accessed on July 17, 2025).

21 Starting from July 2021, Italy gradually enforced the implementation of digital Covid QR-code certificates. This so-called Green Pass was in fact a controversial normative technology, which determined access to a wide range of public spaces and social activities, from workplace and education to leisure and public transport (Marelli 2023).

22 Deleuze (1990, p. 3), elaborating on Foucault, outlines a progression from "societies of sovereignty," whose main goal was "to tax rather than to organize production, to rule on death rather than to administer life," to disciplinary societies, to societies of control.

23 If properly standardized, QR codes allow high degrees of interoperability (across devices, data format, communication protocols). Furthermore, the possibility of producing multilingual QR codes affords catering to a global audience by providing content in multiple languages. Whenever a consumer scans a multi-language QR Code, they are automatically redirected to a language-specific website, based on the device's language setting (see Adarsh 2022).

24 Interestingly, in a gradual manner and several months later, Italy adopted the Chinese model, implementing on October 15, 2021, a national digital Covid certificate (called Green Pass), which became a mandatory requirement to access the workplace, for both public and private sector employees. As an alternative to the Green Pass, workers were allowed to present a negative swab test, or proof of recovery from the disease. Earlier in the summer (in July), the Green Pass had been made a mandatory requirement for accessing leisure-related venues, followed (in September) by schools and public transportation (Marelli 2023).

25 The name PeduliLindungi is based on the fusion of the words *peduli* (“care”) and *lindungi* (“protect”).

26 Originally coined by Bolter and Grusin (1999), “remediation” refers to the incorporation of one media into another. In this perspective, new media always refashion the use and perception of older media in endless interdiscursive chains in which older media at once determine and are determined by newer media and by their related ideologies of immediacy and mediatedness.

27 It should be noted that the distinction between mandatory and optional logics is in practice rather blurry. Not only citizens are increasingly treated as consumers and the governmental apparatus is increasingly represented as a service provider (Donzelli 2019), but the very optionality of promotional offers is debatable. Refusal to participate in QR code-mediated rewards programs comes with a price: not taking advantage of the prize or promotion offered. The enticement model underlying most contemporary market strategies is ultimately a soft obligation. As Elmer (2003a: 232) points out “consumers consciously offer their personal information in exchange for perceived personal benefit (be it a ‘prize’, rebate, or exclusive service).

28 Interviewed on Toronto City News February 2024, https://toronto.citynews.ca/2023/02/03/qr-code-secret-menu-migrant-farm-workers/ (last accessed, September 4, 2024).

29 Interestingly, in both cases, the clandestine use of QR codes as counterinformation devices entails the bare display of the QR code with minimal back-up of verbal material to explain its procedural use.

30 https://www.reddit.com/r/berlinsocialclub/comments/1czp0vt/who_is_this_dude_posting_this_crap_around_berlin/?rdt=53331 (last accessed, September 4, 2024).

31 https://www.amazon.com/Looking-Girlfriend-Novel-Dan-Perino/dp/1729213790 (last accessed, September 4, 2024).

32 https://www.dan-perino.com/flyers (last accessed, September 4, 2024).

33 On the semiotics of enunciative modalities, see Pierluigi Basso Fossali, Marion Colas-Blaise, and Julien Thiburce (2022).

List of illustrations

Title	Image 1
Caption	Milan Central railroad station, July 19, 2024.
Credits	Screenshot by the author.
URL	http://journals.openedition.org/signata/docannexe/image/5594/img-1.png
File	image/png, 2.3M

Title	Image 2a and 2b
Caption	A vertical pole at a bike sharing station in Jakarta with visual signage (on one side) and extensive verbal guidelines (on the other).
Credits	Photo courtesy of the author.
URL	http://journals.openedition.org/signata/docannexe/image/5594/img-2.jpg
File	image/jpeg, 373k

Title	Image 3
Caption	A QR code (coupled with minimal verbal material) enabling access to the LTC shopping mall, during the Covid-19 Pandemic, Glodok, Jakarta.
Credits	Photo courtesy of Veracious, Creative Commons license, https://creativecommons.org/licenses/by-sa/4.0.
URL	http://journals.openedition.org/signata/docannexe/image/5594/img-3.jpg
File	image/jpeg, 339k

Title	Image 4
Caption	A “looking for the perfect woman” flyer in a street of downtown Manhattan.
Credits	Photo courtesy of the author, May 2024.
URL	http://journals.openedition.org/signata/docannexe/image/5594/img-4.jpg
File	image/jpeg, 257k

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