"Don't Tax My Megabytes": Digital Infrastructure
and the Regulation of Citizenship in Africa

CLOVIS BERGÈRE[1]
University of Pennsylvania, USA

Across Africa, governments are increasingly taxing Internet access, sometimes targeting specific websites and social media platforms such as Facebook, Twitter, and WhatsApp. This raises questions about the digital infrastructure and how it mediates relations between states and citizens in Africa. Comparing recent efforts in Guinea and Benin with tax Internet data, this article argues that these taxes restrict and slow down access to a global resource. I also argue that the emergence of the digital addressing infrastructure represents a shift from disciplinary to control societies. This notion counters dominant narratives of digital media as necessarily democratizing forces in Africa by showing how African governments rework digital infrastructures to regulate populations. Ultimately, processes of interpretation and translation from above as well as from below need to be understood as enmeshed in specific historical-political arrangements of power, thus challenging both essentialized notions of media infrastructures and binaries that equate hybridity with resistance and meaning-making with the subversive.

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Le coût change pour les réseaux sociaux et les usages ludiques. Vous téléchargez de la musique, un film, vous faites des transferts WhatsApp d'images qui critiquent le gouvernement, qui critiquent vos amis, libres à vous de le faire, mais vous payez le prix qui est légèrement plus fort. (Wadagni, 2018, 0:23)

[The cost is changing for social media and recreational uses. You download music, a movie, you share an image on WhatsApp criticizing the government or your friends, you are free to do it, but you pay a slightly higher price.][2]

Clovis Bergère: Clovis.bergere@asc.upenn.edu
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[2] All translations from French to English are by the author.

On July 25, 2018, the Beninese government announced its intention to start taxing Internet data. In doing so, Benin was the latest to join a growing list of African countries—including Guinea, Uganda, Zimbabwe, and Zambia—instituting taxes and fees on Internet data. In justifying the tax proposal, Romuald Wadagni, Benin's minister for economic affairs and finance, made it clear that this was not to be a blanket tax on Internet access in general, but rather a targeted tax aimed at specific uses of the Internet which he and the Beninese government deemed "recreational" rather than legitimate and productive. That the category of recreational uses, now to be taxed, included "criticizing the government"—a blatant attempt at silencing opposition—contributed to the virulent response. Coalescing around the hashtag #TaxePasMesMo [#DontTaxMyMegabytes], a campaign quickly organized, strongly supported by international freedom of the press organizations such as Amnesty International. The local campaign and international pressure forced the Beninese government to, at least temporarily, back down.

Still, the proposal, which followed a model of taxation increasingly common across Africa, raises a number of questions that extend beyond its obviously discriminatory and repressive implications. How is it that governments across Africa that have historically struggled with collecting taxes are able to propose and implement taxes that are not only easy to collect but can target specific kinds of Internet users? What technologies enable these shifts in African governments' fiscal abilities? And what are the technical, social, and moral implications of the shift for the dispensation of power, constitution of subjectivity, and regulation of citizenship in Africa today? These questions are pressing given the centrality of taxation to the relationships between states and citizens (Mbembe, 2001; Roitman, 2005). As Roitman notes:

> Economic concepts and institutions, such as tax and price, are political technologies that serve to constitute "that which is to be governed." . . . Such political technologies are mechanisms that render aspects of social life both intelligible and governable. They are thus not simply instrumental methods for obtaining or assuring power; they are, rather, the very material form of power itself. (p. 3)

Considering taxes as "political technologies" that need to be understood as the "very material form of power itself" leads to another question: How do the new taxes on Internet data constitute their fiscal subjects—or "that which is to be governed," to borrow Roitman's expression? In other words, what can these taxes reveal about the changing contours of power and citizenship in Africa? To answer these several interrelated questions, I draw on research data from a digital ethnography conducted between December 2014 and July 2016. I also conducted interviews between May 2017 and May 2019 with Guinean bloggers, Web activists, government officials, and telecommunications company employees responsible for the operation and development of the Internet infrastructure. I compare this data with the recent tax proposals and public debates that ensued across West Africa and on social media sites—Twitter and Facebook, in particular— following the announcement of the proposed tax. This comparison highlights both the specificities of tax proposals and the similar ways in which a growing number of African governments are mobilizing the emergent digital infrastructure to collect taxes. My approach follows recent scholarship on infrastructure, particularly in anthropology, and views infrastructures as "socio-material assemblages" rather than simply built networks (Anand, 2017; Archambault, 2012; Fisch, 2013; Harvey, 2012; Larkin, 2013; Von Schnitzler, 2013, 2016).

Focusing specifically on what I term the *digital addressing infrastructure*—that is, the set of protocols and standards that locate where information is stored and regulate its flows across the Internet—I account for both its technical functions and the specific and often competing political, social, cultural, and moral imaginaries it contains (Larkin, 2008, 2013; Von Schnitzler, 2016). I explore in detail how the object of taxation is defined within the terms of the recent tax on Internet data in Guinea and then examine the technical functions of the digital infrastructure that support its implementation, comparing it with the proposed social media tax in Benin. The emergence of a digital addressing infrastructure constitutes a unique moment in the history of tax collection and fiscal relations in Africa when African governments are suddenly able to rework the global protocols and standards that regulate the exchange of information on the Internet to collect taxes in new and highly efficient ways. The significance of the change for power and citizenship needs to be understood as part of a longer history of tax collection that is shaped by colonial and postcolonial regimes of sovereignty and citizenship. From a theoretical point of view, historicizing Internet taxes decenters linear accounts of the emergence of digital technologies and their impact on practices of government—conceptualized as a shift from disciplinary to control societies by Deleuze, for instance—and invites us to account for the crisis of discipline from an African perspective. I build on Mbembe's notion of private indirect government, which I argue is currently being redistributed along privatized forms of governance supported by the digital addressing infrastructure that deepens African governments' fiscal capabilities and reach. In conclusion, I propose that emerging forms of resistance primarily animated by logics of diversion, bypass, and hacking also need to pay attention to infrastructural dimensions of change—the "very material form of power," to recall the earlier quote by Roitman (2005).

Digital Addressing Infrastructure

On January 25, 2016, the Guinean government adopted an article as part of a set of legislations known as L/2016/001/AN. Article 15, as it was identified, extended the provisions of the March 2015 law on telecommunications, known as L/2015/002/AN, to now also include a tax of all Internet data. Under law L/2016/001/AN, the new tax's target is specified as "DATA" (in full capitals in the legal document), which it further defines as "Internet access." Article 15 sets the tax at "five percent of the price of the Internet pass" (Assemblée Nationale de Guinée, 2016). Unlike in Benin, the Guinean data tax does not target specific websites. Still, it remains highly problematic. In fact, taxes that target Internet access and are linked directly to data consumption are illegal in many parts of the world.[3] When Hungary tried to introduce a tax similar to the one now implemented in Guinea, the European Union strongly condemned the move as a "terrible idea" that would limit Hungarians' access to the Internet, which the European Union's then spokesperson Ryan Heath described as a "global common resource." As organizations such as Internet Sans Frontières (2016) noted at the time, Internet access is a human right (see United Nations General Assembly, 2016), and laws such as the Guinean tax on data, while not denying access to this global resource entirely—as in the case of Internet "shutdowns"—do impose serious restrictions on Internet access, amounting to a generalized limitation perhaps best captured by the notion of a government-imposed Internet "slowdown." And despite the Guinean government's repeated attempts to minimize the impact of the tax on Guinean consumers' access to data—

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[3] In the United States, for example, direct taxation of the Internet is banned under the 2016 Permanent Internet Tax Freedom Act.

which, in a much-maligned comment, its finance minister described as "absolutely nothing"—the cost was immediately passed on to consumers by all three Internet service providers (ISPs) operating in Guinea.

The overall impact of the tax on Guineans' Internet consumption is hard to ascertain given that it is taking place within a broader context of rapid Internet expansion.[4] However, looking at the introduction of a similar tax in 2015 on short message service (SMS) equivalent to one Guinean franc[5] per message provides some indication of the impact of telecommunications taxes on consumption. In that case, the SMS tax resulted in an almost instantaneous decrease in SMS traffic. As noted in the 2016 annual report of the Autorité de Régulation des Postes et Télécommunications, the government entity in charge of regulating telecommunications in Guinea, SMS traffic experienced a "sharp reduction" directly linked to the introduction of the new tax.

Concerning the Internet data tax, my research indicates a slightly more complex picture. Most of the Internet users I spoke with in Guinea decried the price increase. Several, for instance, shared screenshots of the messages they received from their Internet service provider almost immediately after the introduction of the new tax as a way to denounce how the burden of the tax was immediately passed on to consumers. One user explained that the tax would mean longer gaps between her purchasing passes, effectively curtailing her Internet consumption because she would be spending longer periods off-line. Some users, however, noted that the tax felt "pain-free," as one avid social media user told me. For him, the fact that the tax went almost unnoticed was what distinguished this tax from previous ones. Nonetheless, the tax forced most Internet users to devise strategies to cope with the extra financial burden, essentially slowing down their data consumption to manage. This burden was felt most among cash-strapped youths who form the overwhelming majority of Internet users in Guinea, thus raising important issues of fairness and equity (Bergère, 2019).

Although issues of access, rights, and equity are crucial to understanding the impact of the tax, it is also important to examine the technological infrastructure that made collecting such a tax possible in the first place. This is particularly important in the context of Guinea, where tax collection has historically been rather chaotic and patchy and has resulted in a situation where most Guineans are unable to state what taxes they are required by law to pay and where tax recovery rates—the percentage of due taxes actually collected—outside of ports of entry into the country such as the port of Conakry and airport can be as low as 40% (Aiko & Logan, 2014). The recovery rate falls as low as 16% for property and assets taxes. Difficulty with collecting taxes is a common problem in many West African countries (Chalfin, 2010).

In this context, how is the Guinean government able to collect the new data tax? Although the number of Internet passes sold annually in Guinea is hard to ascertain, the Autorité de Régulation des Postes et Télécommunications estimates that over three million mobile phones are connected to the Internet in a country whose overall population is estimated at around 12 million. Collecting taxes from over three million devices creates the potential of a bureaucratic nightmare and an impossible task for a notoriously underfunded and inefficient administration. To understand how the government is able to collect the tax requires looking at the technical infrastructure that regulates data access over the Internet in Guinea.

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[4] See Sorensen's (2014, p. 25) historical institutionalist approach.

[5] At the time of writing in early 2019, one Guinean franc is equivalent to US$0.00011.

As noted above, the tax on Internet data in Guinea is set at 5% of the cost of the Internet pass. Although this may present the tax as a sales tax, it is important to note that taxes on Internet access are notoriously hard to define. In the United States, for instance, there is no agreement on their definition; they fall under the category of sales tax in a few states and are considered telecommunications or service taxes in many others. They are also banned under the terms of the 1998 Internet Tax Freedom Act, except in a few states where historical tax regimes were grandfathered as part of the act's adoption. In Guinea, as in most African countries, Internet data is prepaid, purchased up front through a pass rather than through a monthly subscription. Access to Internet data is almost exclusively linked to a specific amount of data—ranging from 30 megabytes to 20 gigabytes for the more expensive passes—rather than unlimited data, as is common for monthly subscriptions. The more data a user purchases, the higher the tax. Given that access to the Internet is widely recognized as a human right, it is clear that an Internet tax that is paid in addition to a value-added tax needs to be distinguished from other kinds of sales tax. This distinction is made clear under the terms of the Guinean law, which includes the tax under the provision of the broader telecommunications law.

How is the tax itself levied? Given that the Internet in Guinea is accessed almost exclusively via smartphone, I focus on the mechanisms of tax collection for this type of access. The process is quite easy from the Guinean government's point of view, because it is almost entirely automated and carried out on its behalf by the country's three Internet service providers: the French telecom giant Orange, Verizon affiliate NTM, and the U.S.-based Cellcom.[6] Every time an Internet pass is purchased—typically done by calling an automated service from a smartphone—a passcode is sent by the ISP to the device. Once the code is keyed into the device, it is activated and access to a specific amount of data is granted. This routine exchange of information and funds between the consumer of data and her or his ISP is made possible by globally valid protocols that regulate the flow of binary code among the relevant devices, wireless transmitters, servers, and computers involved.

Of most importance for the exchange at play here are the international mobile subscriber identification (IMSI) number and its key—both of which are stored on a subscriber identification mobile (SIM) card, a small physical object inserted into a smartphone or Internet-enabled device. Each IMSI number is entered into a home location register, a central database that contains details of each mobile phone subscriber that is authorized to use the network. This enables several related functions, including multimedia and voicemail services, lawful interception functions that grant official bodies such as the Guinean government and police the capacity to intercept and monitor activity associated with a device, and a billing activity by the center that keeps track of usage.

As Tina Freyburg and Lisa Garbe (2018) have noted in their work on Internet shutdowns, "The connection of an ISP to the rest of the network presents a bottleneck that is relatively easy to cut off or seize control over" (p. 3901). In addition to making shutting down the Internet possible, the autonomous systems that form this bottleneck also make it possible to easily collect a tax linked to data consumption. All the Guinean government needed to do was to formally instruct the three ISPs to start collecting the tax. The ISPs were then immediately able to write a simple line of code that creates a rule mobilizing the technical

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[6] This reflects the Guinean market at the time of writing in May 2019.

systems to automatically calculate, add to the billing cycle, and collect the 5% tax—instantly passing on the extra cost to consumers.

Yet, as the Beninese proposal shows, in addition to providing an easy and efficient mechanism for collecting taxes, the digital addressing infrastructure also expands states' fiscal capabilities in new ways that allow them to target specific data content. The historical significance of the change is clearly illustrated by the case of the targeted taxes as proposed in Benin and currently implemented in Zambia, Zimbabwe, and Uganda. In these cases, in addition to the process described above, the government singles out several websites identified via their unique uniform resource locator, also known as a URL or Web address. Devices requesting information from these websites, identified by their Internet protocol (IP) addresses, are charged a higher tax. Describing the technical work involved in orchestrating the collection of such a tax, a computer engineer working for the Ugandan government and speaking on condition of anonymity explained:

> It hasn't required any new technology or external assistance to implement the "tax-or-block" system. Local telecom engineers only had to write new rules onto existing systems that already handled customized products like zero-rated services and the popular social bundles. . . . In the case of the social media tax, the engineers wrote a new rule requiring that the request be run through the charging system. When a user pays the tax, the mobile money system itself communicates with the charging system, sending information including the phone number and period of validity for their tax payment. So, when a request for access to any of the taxable apps is sent to the charging system, that phone number is checked against information sent in from the mobile money system. If everything checks out, the request is served. If there is no record of tax payment or the payment has expired, the request is denied. (Namubiru, 2018, para. 3–4)

When I asked a technical manager working for one of Guinea's telecom company what the process had been for implementing the tax there, he confirmed: "It was very easy; all that was need were a few lines of codes in the charging system and the taxes are immediately rerouted to a separate account and into the government's pockets" (personal communication, May 31, 2019, Conakry, Guinea).

Although the technicalities of the process through which access to specific amounts of Internet data is granted, denied, kept track of, and taxed might seem somewhat irrelevant, it is important to remember that technical processes are never neutral and apolitical. They are value-laden and contested and reflect the interests of their architects and regulators (Bijker, Hughes, Pinch & Douglas, 2012; DeNardis, 2009; Foucault, 2002). Although scholars have drawn on these notions to decry the lack of non-Western representation in Internet governance (Budnitsky & Jia, 2018; DeNardis, 2009), the process explored here is of a slightly different nature. This process is perhaps best captured by the notion of infrastructural translation, which Larkin (2013) explains as follows:

> A technical system originates in one place, growing in response to particular ecological, legal, political, and industrial techniques native to that area. But as it grows into a networked infrastructure, it must move to other places with differing conditions, technological standards, and legal regulations, elaborating techniques of adaptation and translation. (p. 330)

Colonial Power and the Physical Addressing Infrastructure in Africa

What I call the digital addressing infrastructure—the numbers and protocols that regulate the flow of information across the Internet—has its origins in the West, where it was devised to respond to specific sets of conditions, particularly the need to facilitate the flow of information among growing numbers of users. As widely documented, these protocols reflect the competing interests and values of their individual, institutional, and corporate architects, mostly notably California-based techno-utopians, libertarians, and the security concerns of the U.S. military (Abbate, 2000; Turner, 2006). Yet, as these global standards and protocols move to Guinea, Benin, or Uganda, they interact with widely different sets of conditions, technological standards, and legal regulations, which results in multiple processes of adaptation and translation. In other words, as the digital addressing infrastructure spreads across Africa, it is reworked by African actors, including governmental actors that embed their interests and values as they interact with it. In a context where the ability of governments to efficiently collect taxes has steadily declined (Mbembe, 2001, p. 68), the digital addressing infrastructure presents a unique opportunity that is increasingly understood and mobilized for the purpose of taxation and identification more broadly. When I asked a high-ranking government official with responsibility for advising the Guinean president on the Internet infrastructure what Guinea's priorities were with regard to digital technologies, he explained:

> For us, it comes under the goal of "SMART Guinea," which is first and foremost about "SAFE Guinea." So we started by securing our cities, installing remotely controlled safety cameras in Conakry, and then it's been about e-taxes and e-customs. For instance, I, myself, was able to buy my car registration tax on my smartphone, using digital money. It's really a revolution. By dematerializing our services, we have never seen recovery rates such as these before. (personal communication, June 6, 2019, Conakry, Guinea)

While the shift has clearly found traction among African governments, which see in it new opportunities to render their populations legible, it is also widely felt on the ground. A young Internet user noted in one of our many conversations on digital technologies in Guinea: "But you know how it is here, there are no [street] addresses so it is always prepaid, since everyone has a cell phone with a number, it's your identification" (personal communication, March 3, 2016).

Yet the move from a physical addressing infrastructure to a digital one cannot be characterized as a simple substitution or replacement, where IMSI numbers and IP addresses suddenly replace systems based in street names and house numbers, as the proponents of the "leapfrogging" narrative would have it (Donovan & Martin, 2014). A digital addressing infrastructure is a very different political technology than a physical addressing infrastructure. Rather than a process of displacement or substitution, the relationship between the digital and physical systems of location is better described as one where the difficulties for tax collection purposes created by a nearly nonexistent physical addressing infrastructure provides the historical context for the emergence of the digital infrastructure. This historic and legal context creates a specific need for the Guinean government to shape its digitalization agenda and priorities. This agenda is reflected in the government's focus on tax collection, as opposed to, for instance, economic development, access, or education. As a Web activist in Labé explained:

> This is similar to what happened in Kenya with the digital money transfers. Initially, the lack of postal addresses created a deficit; individuals could not be identified, located on a specific territory. There were many shadow zones. Now, with SIM cards, digital data enable the localization of individuals on this territory and automatically it sidelines the need for physical addresses. . . . And in Guinea, it's an incredible tool, and the government realized it was an incredible tool for collecting taxes. (personal communication, June 3, 2019, Labé, Guinea)

To understand the implications of the infrastructural shift for the ways that power is materially realized, it is necessary to at least briefly review the specificity of the physical addressing infrastructure as it emerged in Africa and the conditions in which the processes of translation and adaption are taking place. The modern, officially organized, and regulated system of marking directions using street names and house numbers emerged in Europe in the 18th century, with Paris, Madrid, and London as early adopters (Alderman, 2003; Rose-Redwood, Alderman, & Azaryahu, 2017). From its inception, the physical addressing infrastructure had less to do with navigating city space or distributing mail. Rather, it was conceived and developed by urban authorities as a way of rendering the urban terrain and its populations administratively legible for both military intervention and tax collection purposes (Denis, 2015; Rose-Redwood, 2012; Rose-Redwood & Tantner, 2012; Scott, 1998). Despite significantly increasing the state's capacities for control and regulation of populations, the physical addressing infrastructure in Europe emerged in a context of rising modern techniques of government similarly based on systematic enumeration and quantification, such as statistics, measurements, and medical records. As noted by Appadurai (1993), the emergence of these regimes of government created little friction between the state and citizens in Europe because it corresponded to a historical moment when a modernist commitment to systems of classification was increasingly shared by "officialdom with ordinary people" (p. 347).

In Africa, the emergence of modernist systems of classification and enumeration followed a very different path, reflecting the colonial regime of domination and ordering of power. The street addressing infrastructure was introduced by the colonial authorities, and as such reflected its interests and values rather than any shared commonsense approach to location. As Roitman (2005) notes, it was a technique for classification or "reordering" that served to "fix" the communities and their subjects to render them taxable from a practical point of view (p. 130). In addition to the logic of enumeration and legibility for the purpose of governmental management, street-naming and house-numbering practices across colonized Africa also followed a type of reasoning marked by rupture and the separatist logic of the colonial state. For instance, in early colonial cities, such as late 19th-century Dakar or Conakry, street naming and house numbering were reserved for the European quarters. As political technologies of colonial power, street names and house numbers served to delineate the European city from the "native town" (Bigon, 2009). Denied names, the streets of the native town were also invariably denied an integral part in the city (Bigon, 2009, p. 436). Ultimately, colonial efforts to develop an addressing infrastructure based on the metropolitan model failed even within the planned European parts of the colonial cities they occupied, largely due to the lack of financial resources, lax control, and corruption that characterized the colonial authorities in West Africa (Bigon, 2009).

The result is a situation in which the vast majority of the urban population in Africa today (and about half of urban residents worldwide) live in houses that are not locatable using the modernist addressing system based on house numbers and street names. This situation has been described as a "worrisome

predicament" by international bodies in charge of development that invariably note the impact of the lack of addressing infrastructure on African states' capacity to raise taxes (Farvacque-Vitkovic, Godin, Leroux, Verdet, & Chavez, 2005, p. 2). This is not to say that official forms of identification do not exist. However, the process for obtaining official identification papers can be very complicated, costly, and time-consuming. In Guinea, for instance, the process involves contacting the *chef de quarter* ("neighborhood chief"), who has the legal authority to issue a certificate confirming whether one is indeed a resident of the neighborhood. The process can take weeks and costs around 5,000 Guinean francs (roughly equivalent to the price of a kilogram of rice or a whole fish in a Conakry market). The address obtained is typically simply the name of a neighborhood and the subdivision—or *secteur*—in the neighborhood where one resides. The address does not include a street name or a house number. As such, it serves little purpose for tax collection and makes it nearly impossible to ascertain exactly where someone lives. This postcolonial addressing infrastructure provides the political context and historical conditions through which the Guinean—and, by extension, the Beninese—government makes sense of, translates, and adapts the emergent digital infrastructure.

Digital Fiscality and Postcolonial Forms of Control

Writing a "postscript on the societies of control," French philosopher Gilles Deleuze (1992, p. 3) proposed that, since the end of World War II, we have seen a generalized crisis of disciplinary societies. For Deleuze, following Michel Foucault's groundbreaking work on the history of penal systems, disciplinary societies are the regimes of power that emerged during the 18th and 19th centuries and culminated at the turn of the 20th century. These regimes organized social institutions—school, family, factory, prison, hospital—along what Deleuze calls the logic of enclosure. For Deleuze, disciplinary societies sought to "concentrate; to distribute in space; to order in time; to compose a productive force within the dimension of space-time whose effect will be greater than the sum of its component forces" (p. 3).

Since World War II, disciplinary power and enclosure as an ordering of power and government has increasingly been replaced and displaced by an entirely different logic, which Deleuze (1992) calls the logic of control (p. 4), explained as follows:

> Enclosures are molds, distinct castings, but controls are a modulation, like a self-deforming cast that will continuously change from one moment to the other, or like a sieve whose mesh will transmute from point to point. In the societies of control . . . what is important is no longer either a signature or number, but a code: the code is a password. . . . The numerical language of control is made of codes that mark access to information or reject it. We no longer find ourselves dealing with the mass/individual pair. Individuals have become "*dividuals*," and masses, samples, data, markets, or "*banks*." (p. 5, emphasis in original)

The distinction between enclosure and modulation, signature and code, individuals and "dividuals"—in other words, between regimes of discipline and control—is useful in making sense of the shift from a physical addressing infrastructure to a digital one. Whereas street names and house numbers sought to fix, to enclose the native town from the colonial quarters first and from taxable subjects—identified through their physical address—later, IMSI numbers and IP addresses operate as codes or passwords that

grant or deny access to information in a process that is entirely automated by computers and digital technologies. IMSI numbers and IP addresses operate as mechanisms of control that give "the position of any element within an open environment at any given instant" (Deleuze, 1992, p. 7) rather than trying to fix and contain (Roitman, 2005). Although digital addresses are primarily concerned with the movement of information across digital networks, they are also increasingly used to locate users geographically in physical space. Indeed, being identified through the geolocalization capabilities of their smartphones is a very real concern for Web activists in Guinea (personal communication, May 2016).

The movement from physical address to geolocalization has important consequences for thinking about fiscal relations, power, and citizenship in Africa today. It is also important to grapple with the limitations of the applicability of Deleuze's argument to the African context. In other words, it is necessary to account for the shift from disciplinary societies to ones of control from an African perspective. Despite the noted rejection of linearity and historical telos, Deleuze (1992) seems to give us just that: a linear account of a historical shift from regimes of discipline to regimes of control. Although he notes the somewhat messy and confused transition from one to the other, he still is clear that disciplinary societies are "finished" and those of control are our "immediate future" (p. 4). Assumed here is a sense that enclosure as a logic of power was indeed able to dominate and that it is being replaced with another singular mode of domination— that of control. This reflects Western accounts of modernity that are characterized by a high level of connivance and "shared" common sense between the people and the state, to recall Appadurai's (1993, p. 318) point.

However, enclosure as a generalized mode of power has a slightly different genealogy within the postcolonial African public sphere. And the specific historical experience of enclosure today bears the experience of control as it moves from the Western world to Guinea or Benin. At stake here is the fact that enclosure as a logic of administration saw its purest expression with the colonial sphere, where separation— apartheid—operated as the logic of government and domination well beyond South Africa, as famously noted by Mahmoud Mamdani (Chatterjee, 2011; Mamdani, 1996; Mitchell, 1988, 2002). Yet the native town was also always a site outside of that enclosure and its disciplinary reach (Fanon, 1968; Simone, 2010). This both created a hotbed for everyday resistance to the forces of enclosure and placed enormous limitations on enclosure as a logic of government. It created the conditions that led to the colonial order's crisis and corruption, planting the seeds for the bifurcated mode of power that has characterized the postcolonial experience (Bayart, 2009; Bayart & Warnier, 2004). In many ways, African subjects under colonial and postcolonial conditions of power experienced the crisis of disciplinary societies described by Deleuze not only earlier than Western countries but concurrently with the very advent of disciplinary power—that is, from the start. As noted by Mbembe (2001), this created the conditions for postcolonial regimes of fiscality that have resulted in the delinking of tax collection from relations of exchange and reciprocity. Whereas in the West or precolonial Africa, the ability to collect taxes formed the basis for reciprocity and obligations in the form of protection, wage distribution, or safety, the gradual dismantling of state authority in Africa, under the joint forces of economic globalization and the dismantling of internal cohesion, has resulted in a situation where state authority has increasingly become disassociated from public authority and privatized. According to Mbembe, under these conditions:

Taxation is transformed into an extended category for which no consent is required and
no demand tied to any precise idea of public utility or common good. Raising taxes ceases
to be one aspect of the state monopoly of coercion and becomes rather one aspect of the
loss of that monopoly and of its dispersion within society. In other words, there is no
longer difference between taxation and exaction. (p. 84)

Mbembe's concern for the privatization of state power and the resulting delinking of tax collection
from relations of exchange and reciprocity is clearly echoed by citizens in Guinea and Benin who protest
Internet taxes. One of the most widely shared tweets following the announcement of the Internet tax in
Guinea read:

Ou alors taxez moi MAIS assurez le minimum derrière. Un droit pour un devoir.
#TaxeDeSuivisme #GouvernementPicoreurDeMénages #Guinée

[Or just tax me BUT back that up with clear assurances. A right for a duty.
#FollowershipTax #GovernmentPeckingInHouseholdsPocket #Guinea]

The protest here is not about the state's ability to use digital technologies to collect taxes per se
but about a specifically Guinean experience of control in a context where fiscal relations are characterized
by one-sidedness rather than reciprocity. When asked, most Guineans are deeply committed to the
development of the nation, which they all agree will require an ability to collect taxes (Aiko & Logan, 2014).
The emergence of a capacity to effectively collect taxes is a generalized context of the reorganization of the
state–citizen relationship along private rather than public lines. Writing in the mid-1990s, before digital
technologies were widely available in Africa, Mbembe (2001) noted the reordering of power and what he
described as the "ongoing struggles for the codification of new rights and privileges":

The outcome of these profound movements may well be the final defeat of the state in
Africa as we have known it in recent years. But it might equally well be a deepening of
the state's indigenization—or, more radically, its replacement by dispositifs that retain the
name but have intrinsic qualities and modes of operation quite unlike those of a
conventional state. (p. 68)

It is probably too early to call the various possible outcomes laid out by Mbembe. However, it
seems clear today that digital technologies, rather than sounding the death knell of the authoritarian
postcolonial states in Africa (as has sometimes been claimed or hoped), interact with broader processes of
fiscality that are at the very heart of state–citizen relations.

The focus on tax collection here both echoes and complements recent scholarship that examines SIM
registration campaigns, Internet shutdowns, and digital censorship as examples that counter essentialist notions
of the Internet as a "liberation technology" and raise fundamental questions about citizen surveillance, equity,
and state repression (Donovan & Martin, 2014; Freyburg & Garbe, 2018; Gangadharan, 2017; Grinberg, 2017;
Rød & Weidmann, 2015). By dramatically extending African states' capacities to collect taxes in a broader
context of the privatization of the commons, digital technologies—and the digital addressing infrastructure

described here in particular—deepen African states' reach and "indigenization"—that is, its growth along forms of domination that rest on new capacities to use code to locate and target fiscal citizens without the need of legitimate exchanges and publicly accountable reciprocity. Within this system of postcolonial power, controlling access to the digital infrastructure—the ability to code and recode the flow of information across the networks—is increasingly becoming the prime locus through which the "interplay of rights, transfers, and obligations—that is the very definition of postcolonial citizenship—rests" (Mbembe, 2001, p. 84).

What is important here is not to counter dominant narratives that represent digital technologies as necessarily democratic and liberating with equally reductive accounts of the Internet as solely oriented toward control and surveillance. The #TaxePasMesMo campaign in Benin was successful in resisting the government's efforts to tax social media sites. Along with other digitally mediated campaigns, including the #TaxeDeSuivisme campaign in Guinea, this provides an example of digital platforms as locations from which to address power and mount protests. As the Beninese case shows, digital technologies can play a significant role in mobilizing both local action and international support through organizations such as Amnesty International, which intensify pressure on governments. The key is to move away from dichotomous understandings of digital technologies as either resistant or controlling to account for the historical specificities of the digital infrastructure as it comes together and emerges in Guinea and Benin.

Conclusion: Digital Citizenship and Ontological Politics

As the digital addressing infrastructure becomes ubiquitous in Africa, it is reworked by African governments for the purpose of tax collection—something that has often eluded them in the past. As regulators of the digital infrastructure within their national boundaries, states across Africa, such as Guinea, Zimbabwe, Uganda, and Benin, are able to mobilize a complex technomaterial assemblage that includes digital technologies, wireless networks, and large international corporations to collect taxes—a "surveillant assemblage" to borrow Donovan and Martin's (2014, para. 9) term. The historical significance of the change needs to be assessed against a broader history of taxation that sits at the heart of relations of citizenship and the constitution of subjectivities in Africa. Moreover, digital infrastructure is unique compared with other infrastructures that not require large investments for maintenance (Anand, 2017) and can be recoded to automatically perform complex, time-consuming tasks such as raising taxes. As infrastructures, they reflect broader changes in the logic of government and the dispensation of power in Africa. This shift can be characterized using the terms proposed by Deleuze as a shift from disciplinary societies to societies of control.

However, the specificities of postcolonial forms of control need to be accounted for. In particular, it is necessary to assess the rise of new fiscal abilities within the broader context of privatization of governance in Africa (Mbembe, 2001). This assessment has a key implication for the constitution of fiscal subjectivities and citizenship in Africa today. Infrastructures conceived as sociomaterial assemblages rather than mere built networks are central to the constitution of citizens' subjectivities (Anand, 2017; Larkin, 2013; Von Schnitzler, 2013, 2016). By taxing SIM cards rather than individuals, African fiscal subjects who often carry several SIM cards to navigate the hyperflexibility of Internet passes and reduce their costs also find themselves fragmented as fiscal subjects, or "dividuals" rather than individuals, to recall Deleuze's distinction. In addition, the technical ability to target specific kinds of Internet users, as illustrated by the Beninese case, is built into the digital addressing infrastructure, offering new ways for African governments to link taxation to moral projects and

forms of domination that distinguish among citizens in new ways. The constitution of fiscal subjectivities becomes conditional on compliance with government-sanctioned uses of the Internet and operates according to a "tax-or-block" model, which increasingly blurs the lines between taxation and exaction (Mbembe, 2001, p. 85). It is, however, important to remember that infrastructures are highly "unstable objects" (Larkin, 2008; Von Schnitzler, 2016). As such, they are also constantly contested, and their meanings are always in the process of being constituted. As Nikhil Anand (2017) explains:

> Mobilized by both their semiotics and their material affordances, . . . infrastructures call out and enable forms of everyday management that are reducible neither to the political rationalities of administrators or politicians nor to the material technologies that engineers mobilize in the city. Instead they are unsteady accretions of different and dispersed social and material relations. They are brought into being out of a multiplicity of historical forms and techno-political relations that, while bound together, seldom fully cohere. (p. 18)

Just as the "native" quarters during colonial times were both the epitome of segregation, apartheid, and enclosure and simultaneously the crucible of resistance to and demise of the colonial order, the meanings and affordances of the digital infrastructure are also multiple, unstable, and fought over. Online protests that organize around a hashtag such as the #TaxPasMesMO campaign that happened in response to the Beninese government are an obvious example. As illustrated by this case, the digital infrastructure becomes a location from which to address power, often to interrogate it about its use of that infrastructure. Divergent historical forms and the reworking of the digital infrastructure as well as its affordances are at play here. Crucially, as forces of domination increasingly shift from being animated by a disciplinary logic to a logic of control, forms of resistance also morph.

In the digital era, resistance increasingly operates according to the logic of virus rather than duplication, hacking rather than sabotage, bypass rather than head-on collision. In Guinea, for instance, one of the main revenue losses for the government has been the hijacking of the digital infrastructure for the purpose of rerouting international telephone calls, which, once diverted through alternative digital channels, become free and unburdened of tax (Autorité de Régulation des Postes et Télécommunications, 2017, p. 21). In Zimbabwe, Uganda, and Zambia, where social media taxes have been instituted, the use of virtual private networks (VPNs) to virtually tunnel information away from shared, public, and thus taxable networks has been one of the main forms of resistance to the tax. These forms of everyday resistance (Bayat, 1997; Scott, 1985) respond to African governments' mobilization of the digital addressing infrastructure by deploying alternative computer codes to divert, bypass, and reroute the flow of information away from its control. It is clearly important to avoid the traps of associating digital control with total control and to celebrate these forms of resistance that operate through the logic of contagion as the "new weapons" (Deleuze, 1992, p. 4) for countering the forces of dominance within control societies. Digital practices encompasse both computer viruses and viral campaigns—intrusion in the case of hacking or diversion in the case of technologies of bypass such as VPNs and rerouting. However, it is also important to reframe public debates about the intersections of digital technologies, taxation, and citizenship to focus on the infrastructural shifts under way and their long-term implications for the constitution of subjectivities and citizenship in Africa today. This is the work of what Annemarie Mol (2002) calls "ontological politics," which,

she explains, has "to do with the way in which problems are framed" (p. viiii). As 20-year-old Guinean Twitter user La Voix Peuhle commented in response to the new Internet tax:

> Peut-être que la "taxe sur l'air respiré" serait en phase d'élaboration #Guinée#CorruptGuinea #Pauvreté
>
> [A "tax on the air we breathe" might be in preparation #Guinea #CorruptGuinea #Poverty]

What La Voix Peuhle makes clear is that the new Internet taxes are not just an additional form of taxation; rather, as Roitman (2005) explained, what is at stake is the "very material form of power itself" (p. 3).

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