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From Open Data to "Grounded Openness": Recursive Politics and Postcolonial Struggle in Hong Kong

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Abstract

This article maps the parameters of an emerging field of struggle around "openness" pertaining to digital data in the postcolonial smart city. Whereas colonial governance operated in relative secrecy with archives not quite available to ordinary citizens, what do we make of current institutions from government departments to banks flaunting their commitment to Open Data? Looking at data activism in Hong Kong, this article highlights the (post)colonial histories that have shaped the reception of Open Data in this context. More so, it explores the ways in which the techno-materialities of data infrastructures affect and reconfigure postcolonial struggle. Building on Kelty's discussion of "recursive publics" and Hui's account of recursivity, my notion of *recursive politics* underscores the mutuality of social history and techno-materiality. While recursive politics can contribute to technodiversity, I analyze how such politics weigh up against the political and ethical investments of postcolonial struggle.

Keywords

Open Data, data politics, smart city, recursivity, postcolonialism, Hong Kong

Colonial governance in Hong Kong used to operate in relative obscurity with archives not quite available to ordinary citizens. Right before the 1997 Handover of Hong Kong from Britain to Mainland China, the colonial regime resisted calls for a Freedom of Information Bill, and until today there is none (Weisenhaus 2014, 132).

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However, the recent initiative to turn Hong Kong into a so-called smart city implies that institutions from government departments to banks are flaunting their commitment to Open Data and rendering available unprecedented amounts of data. According to a standard that is well-recognized though rarely fully observed, Open Data refers to data that are accessible "at no more than a reasonable reproduction cost" and that can be freely reused and redistributed "without discrimination against fields of endeavor or against persons or groups."[1] This article maps discursive and technological constructions of openness of data in relation to postcolonial histories and struggles. That is, I explore the parameters of a field of struggle around data and openness that is shaped by after-effects and extensions of colonialism in Hong Kong (Hall 1996). In what ways do (post)colonial histories condition the reception of Open Data in Hong Kong, which forms part of smart city policy making? Moreover, in what ways do data-centric infrastructures and material practices, along with imaginaries of "openness," play a role in postcolonial struggles? For instance, for data activists, Open Data is associated with an expectation of transparency in governance. But what is the purchase of activist rallying cries for transparency in the postcolonial smart city when faced with datafication of everyday life? Finally, how do data activists' constructions of openness weigh up against conventional ethical and political investments of postcolonial struggle?

Hong Kong offers a remarkable case in considering the intersection of Open Data and postcolonial struggle, because the postcolonial history of the city manifests itself exactly through articulations of "openness" that have positioned Hong Kong as an "open," capitalist city, designed to be an exception to "closed" Mainland China yet nonetheless functionally integrated with it. Moreover, in the context of current political struggles that root in this history and that have intensified immensely since the Umbrella Movement in 2014, data activists simultaneously exploit, contest, and reimagine norms around the openness of data.

This article does not just explore the ways in which postcolonial conditions shape Open Data practices in Hong Kong, it also discusses the ways in which data-infrastructural materialities mediate and affect ongoing postcolonial struggle. To attend to these two lines of inquiry, I weigh two tendencies at the intersection of critical data studies and postcolonial critique, namely, *contextualization* and *conceptualization*. A *contextualizing* approach draws connections between (post)colonial histories, and particular technological conditions and situated practices. In contradistinction, *conceptualization* discovers parallels of historical colonialism in contemporary techno-material infrastructures and processes, which unfold at global scale rather than in particular places. Negotiating conceptualizing and contextualizing tendencies, I underscore the mutuality of social history and techno-materiality through my notion of "recursive politics." Building on Kelty (2008), Ruppert (2015), and Y. Hui (2019), I look at data activists and civic hackers forming "recursive publics." Such publics seek to shape techno-materialities, but they are also "configured by the sociotechnical arrangements of which they are part," including "software technologies, data formats and so on" (Ruppert 2015, 130). I tease out ethical and political implications of recursive politics for Hong Kong's postcolonial struggle.

My analysis draws from fieldwork with government agencies as well as data activism and civic-hacking collectives that were active in Hong Kong between 2014 and 2019. It pieces together various resources, including meeting notes, policy documents, manifestos, and statements, along with communication in Facebook and Telegram groups and on the developers' platforms Github and Hackpad. Moreover, I joined hackathons, where I started pitching my own projects to gauge the possibilities and limitations of the "openness" of data. Although I was primarily interested in public discourse, I also conducted personal interviews to verify my impressions and interpretations. Among the activist groups that I followed and consulted are Open Data Hong Kong, Code4HK, Keyboard Frontline, g0vHK, and the Station for Open Cultures. I also included into my study the Hong Kong data journalism branches of the online news outlet Initium Media, HK01, and Factwire, whose employees and projects at times overlap with the aforementioned collectives.

My discussion is divided into five sections. The first section illustrates contextualizing and the conceptualizing approaches through the case of Hong Kong. Contrasting these approaches in terms of their possibilities and limitations, I offer the notion of "recursive politics" as a third position. The four sections thereafter analyze different technological constructions and discursive articulations of "openness." "Exceptional Openness" details the reception of Open Data with reference to Hong Kong's designation as an "open" smart city, highlighting how (post)colonial histories have shaped this reception. The subsequent sections "Transparent Openness" and "Grounded Openness" explore the ways in which Open Data has become part and parcel of postcolonial struggle. I analyze experimental practices by data activists and emerging norms for openness that both exploit and contest the openness of the smart city. These sections demonstrate what I call "recursive politics." In the section "Open Commons?" I address the ways in which the techno-materialities mediating recursive politics reconfigure publics and communities. The conclusion critically reviews such reconfigurations in the light of ethical and political investments of postcolonial struggle.

From Contextual and Conceptual Approaches to Recursive Politics

The contextualizing approach considers data-centric practices and infrastructures beyond the West in the light of histories of colonialism (Arora 2016; Halkort, 2019; Milan and Treré 2019; Stevens 2019). Pleading for such contextualization, Stefania Milan and Emiliano Treré (2019, 323) proclaim that "the sociotechnical dynamics of datafication should be understood in relation to, and measured against" the histories of dispossession, enslavement, appropriation, and extraction that have shaped the modern world. Although there is much to say about the topic of data and information under colonial regimes (for instance, Abraham 2018; Stoler 2009), this article reflects the contextualizing approach in that I highlight how Hong Kong's colonial history morphed into neoliberal imperialism (Chan 2007; Chen 2010). Hong Kong befits Aiwha Ong's (2006, 7) account of the neoliberal exception, whereby "sovereign rule invokes the exception to create new economic possibilities, spaces, and techniques for governing

the population" (see also Tang and Yuen 2016). Hong Kong's status as a zone of exception became consolidated through the Sino-British Joint Declaration of 1984 that set the conditions for the city's return to China as a Special Administrative Region. The principle of "One Country, Two Systems" (*yiguo, liangzhi*) was first proposed by Chinese leader Deng Xiaoping and perceived by the Chinese authorities as potentially a long-term arrangement through which China would benefit from combining socialist and capitalist tendencies (Chan 2007; Ren 2010). Resulting from these Sino-British negotiations, the city's mini-constitution, the Basic Law, stipulates that Hong Kong can exercise "a high degree of autonomy" and that "the previous capitalist system and way of life shall remain unchanged for 50 years."[2] Drawing on the contextualizing approach, the question emerges of how logics of exception have shaped data practices in Hong Kong, that is, the ways in which Hong Kong's exceptional "openness" bears on Open Data policies and its further implication in postcolonial struggle.

Shifting from the contextual to the conceptual, a range of authors highlights the "coloniality" *inherent in* emerging forms of data power. At stake are technological operations that produce orders, exert control, and extract data and value, thereby constituting parallels between "data colonialism" and historical colonialism (Couldry and Mejias 2019; Thatcher et al. 2016). As Ricaurte (2019, 352) argues,

> Data centered economies foster extractive models of resource exploitation, the violation of human rights, cultural exclusion, and ecocide. [. . .] The pervasiveness of technologies and data regimes in all spheres of existence crowd out alternative forms of being, thinking, and sensing.

The extractivism, homolingualism, and abstractions of datafication that Ricaurte identifies incapacitate difference, while aiding cybernetic control (Couldry and Mejias 2019; Mezzadra and Neilson 2017; Rossiter 2017; Solomon 2016). Following philosopher Norbert Wiener (1985), cybernetic control tackles contingency and difference not by eliminating or ignoring them, but by integrating them into cybernetic calculation. The recursive cybernetic feedback loop "tirelessly integrates contingency into its own functioning" (Y. Hui 2019, 25), resulting in control. The critiques of the inherent coloniality of data power address the ways power works *through* data infrastructures, namely, through infrastructural protocols and dispositions (Easterling 2014). Although Open Data may seem to counter data power by empowering users, the conceptualizing approach raises the question of whether and how Open Data becomes integrated with extractivism, datafication, and control in the smart city in Hong Kong and elsewhere. "Openness" can turn into exposure, namely, vulnerability and inability to protect data as resource or property—demonstrating the extractivist coloniality of data power.

Although the contextual and the conceptual approaches provide us with pertinent lines of inquiry, they both have certain limitations. A term such as "data colonialism" (Couldry and Mejias 2019) may fail to acknowledge ongoing inequalities (Segura and Waisbord 2019; see also Fuchs and Chandler 2019) and contextual articulations between different economic regimes or modes of power (Mezzadra and Neilson 2017, 13). There should at least be room to inquire how postcolonial scenarios—characterized by distinct

levels and combinations of disenfranchisement, subaltern status, and exploitation—intersect and combine with the power inherent in data and datafication. However, if we abide by contextualization only, the danger may be that we take for granted the agents of history, the subjects, and entities featured in our analysis. Technology becomes merely an instrument at the disposal of social power, inscribed with technopolitical function, and a facet of histories whose driving forces and rationalities we presumably already know. Such an analysis misses the ways in which techno-material operations cast effects that are not contained by human strategy and reconfigure social actors. To develop an approach that attends to contextual conditions as well as techno-social reconfigurations—and thereby the mutuality of social history and techno-materiality—I advance the notion of *recursive politics*. Critiquing Wiener's cybernetic control, Yuk Hui (2019, 226) contends that by inventing "another recursive process, another epistemology" is possible. Here, recursive feedback does not refer to control but to the motions of confluence of humans and techno-materialities, whom are entangled in techno-social trajectories of becoming. Recursivity underscores the historically produced nature of techno-materialities, along with the techno-material dimensions of situated practice, intervention, and being. Following Yuk Hui, recursive politics can be a source of technodiversity. Yet, this article inquires how "recursive publics" (Kelty 2008; Ruppert 2015) of data activists affect and complicate postcolonial struggle.

Exceptional Openness

What I call "exceptional openness" consists of data practices shaped by contextual logics of exception (Ong 2006) that root in colonial history and condition the current reception of Open Data in Hong Kong. Hong Kong's position as "open" exception vis-à-vis "closed" Mainland China granted the city certain legal rights and civil liberties that were absent in Mainland China's political system and culture. Yet, some rights were never as robust as could be and many have noted a decline in protection of rights and liberties or forestallment of up-to-date legislation to safeguard and enhance them (Lam 2012; Tang and Yuen 2016; Weisenhaus 2014, 101, 112, 145–147).

The colonial government initiated a Government Records Service in 1989, but departments within the government had no obligation to comply with the administrative advice. In 1995, the city acquired a Code on Access to Information, but this code was again inferior to a law and did not provide legal means to contest a rejected request for information. So even though Hong Kong was supposed to be an "open" city, critics argue that instead of transparency, a governmental culture of relative secrecy and disappearance of critically important documents has continued until today (Weisenhaus 2014, 149–51). As one of the most outspoken critics of information law, Former Director of the Government Records Service Simon Chu has cited recent instances of lack of transparency in construction and land development projects, a deadly ferry incident, as well as police behavior during the Umbrella Movement.[3] The latest example of public mistrust against the government, expressed through a struggle over access to data and information, pertains to police's usage of teargas during the protests in 2019. The police's refusal to release data about the composition of teargas led to

complaints from self-organized moms' groups and schools as well as independent efforts to measure traces of environmental pollution and an ongoing court case.

It is true that the Hong Kong government has taken on the task of rendering available unprecedented amounts of data as part of its smart city policy making. For instance, there has been a push for all government departments to formulate an annual Open Data plan in the context of smart city policy making. However, the conundrums of Hong Kong being open per "exception"—that is, as a result of economic strategy— are still reflected in the reception of Open Data.

Current Open Data initiatives coalesce with the desire to stage Hong Kong as a "smart city" and they are informed by the aspiration to participate in globalizing trends in entrepreneurial urbanism and neoliberal "good governance" based on standardized, bureaucratic, or technocratic procedures (Sharma 2013; Vanolo 2014). By consequence, data policies in Hong Kong have been preoccupied with a plurality of indexes, standards, corporate responsibility schemes, and international benchmarking schemes, such as by the Open Data Barometer, Organisation for Economic Co-operation and Development (OECD), the United Nations, and others. One problem with this preoccupation is that global standards for Open Data might privilege measurements of performance that easily transfer across contexts, such as quantity of data that is released, but overlook local needs such as in the cases cited above. "Small" but sensitive data cannot be compensated for with, however, much big data pertaining to the smart city's everyday operations. Moreover, the actual nature of Open Data initiatives remains contingent on the mandate for economic impact. Innovation industries exploit Open Data as a resource, reproducing the parasitical model of rent that Matteo Pasquinelli (2008) identified in Free Culture more generally. These industries influence what datasets become available and are prompted by the government for input on the development of Open Data sources (Birchall 2015; Huang 2015; Stevens 2019). In Hong Kong, not only do the subjects covered by a dataset matter (e.g., water pollution measurements vs. parking lot data) but so does the format as real-time data are often necessary to provide some kind of service via an app, but historical data facilitate long-term analysis that is required, for instance, to hold governments accountable.

The attention for norms of "good governance" that prevail in the absence of legal rights render Hong Kong a zone not just of exception but *example* (Neilson 2014). However, the fact that Hong Kong during the latest year of measurement was ranked 24th out of 94 on the Global Open Data Index by the Open Knowledge Foundation may not refute critique. Instead, it could signify the index's inability to speak to actual use and impact in terms of efficacy and rights (Gray and Lämmerhirt 2016). Tellingly, the Open Data portal by the Hong Kong government does not frame access as a right but rather as a service that the government can discontinue or constrain at its discretion. The individual remains positioned as a User rather than Citizen.[4]

A related problem of the neoliberal smart city is exclusive corporate access to, and ownership over, data. Although increasingly possessing large amounts of data, private governance actors and service providers do not make their own proprietary datasets open and available to the public. Admitting the government's inability to reclaim data

even from its own partners in the private sector, Hong Kong's smart city blueprint by the Office of the Government Chief Information Officer (2017, 133) states explicitly that "some private companies are reluctant to release their datasets on commercial consideration." The problem has existed with regard to transportation data, which the companies in charge of public transportation were reluctant to share because a transportation app would show passengers alternative options. Private and intellectual property protections have distinguished Hong Kong as "exception" from Mainland China, but consequently corporate privilege remains hard to challenge. The proprietary character of corporate data and the black-boxed nature of their processing may not appear to contradict the articulation of being an "open" society.

Last, in recent years, the concern over political rights has intensified in Hong Kong and sparked the Umbrella Movement of 2014, which involved occupations of several central spaces of the city lasting up to seventy-nine days. In 2019, the proposal for an extradition bill with Mainland China unleashed months of protests and police repression, bringing the city on the verge of chaos and resulting in a reinvigorated demand for universal suffrage. Given both movements' inability to get concessions, it has become increasingly apparent to many in Hong Kong that sovereign state power continues to determine the limits of Hong Kong's rights and liberties. The subjection to sovereign decision renders a second logic of exception relevant, in coalescence with Ong's. This is Agamben's (1998) "state of exception," whereby state power can decide to either uphold or withdraw rights, hence exposing the subject to repressive, coercive, and/or exploitative treatment.

Cross-border data mobilities, enabled by increasing infrastructural integration between Hong Kong and Mainland China, can give way to Agamben's logic of exception. Such data mobilities make part of the Greater Bay Area plan, executed by the Hong Kong government with support from Beijing and in collaboration with Macau and cities in Guangdong Province. They complicate territorial legislation in practice and, with that, the "One Country, Two Systems" principle. Despite legal incompatibility between the two "systems," there is weakened control over cross-border transfer of user data because the relevant provisions to protect personal data are not yet in force. Practical concerns voiced by the industry stakeholders and discussions over the definition of "personal data" have not been resolved (see also Tsui and Hargreaves 2019).[5] Under such conditions, repressive state power can make its comeback through data infrastructures. For instance, the tender for a new digital identity system in Hong Kong went to Ping An, a Mainland Chinese company with facilities across the border in Shenzhen. Worries have risen about the possibility of a backdoor, especially given that the company is at the forefront of surveillance in other places, including Tibet. During the 2019 wave of protests, specific actions targeted smart city applications to prevent state surveillance, such as the dismantling of smart lamp posts, even though the government contended they measured only environmental factors. Protesters furthermore refused smart-card usage for public transportation out of fear of tracking. Various ways of hiding from surveillance cameras throughout the urban landscape continued even after facial masks were banned through an emergency decree (which was later declared unconstitutional in court).

Transparent Openness

Despite the above critique of the formal Open Data initiative, imaginaries and techno-materialities of Open Data constitute a field of postcolonial struggle in Hong Kong (see also Meng et al. 2019). The openness of data is associated with contestations over governance transparency and, more so, political representation.

The API (Application Programming Interface) of the Legislative Council's (LegCo) own website provides access to datasets pertaining to questions raised by LegCo members and transcriptions of the discussions. In this articulation, Open Data facilitates "transparency," whereby data are to evidence what exists "out there" and possess a referential capacity (Halpern 2014, 46–51). Ordering data through the acts of capturing, structuring, aggregating, and visualizing contributes to ordering society and eradicating irrationalities, inefficiencies, and corruption. It renders society governable but also governors accountable (Ananny and Crawford 2016, 2–3; Bratich 2016, 178; Sundaram 2017). Hence, data activists and journalists use LegCo records for text mining and visualization with the aim of turning large amounts of data into digestible information and increase transparency and civic engagement. Voting records of motions in the LegCo allow for visualizing politicians' voting behavior and cluster patterns. Another dataset, released by the Financial Services and Treasury Bureau, concerns budget spending by the government. Deploying such data, Code4HK and Open Data Hong Kong held a "Hack the Budget Hackathon." More recently, g0vHK civic hackers have started a search engine to retrieve data from the records of budget meetings of the Finance Committee in the LegCo. There has also been an attempt at maintaining a database of politicians' individual profiles out of fear of retroactive censorship and disappearance of public information, for instance, on Wikipedia.

Data activism also involves contentious assessment of openness. Activists in Hong Kong argue that Open Data is not "truly" open and they read political motives in lacking technical conditions. The complaints have addressed technical issues such as the release of data in PDF format, which is not machine-readable, the use of empty passwords preventing automated extraction, and unclear schemas for datasets. Also criticized are unreasonably high fees for certain datasets and required registration when requesting datasets, whereby the expectation is that one belongs to select professional sectors. Generating outright derision, the Open Data portal was used for reputation management. The Police Department opted to contribute a dataset consisting of thank-you letters by its supporters in the wake of the Umbrella Movement and the controversy surrounding the use of teargas against protesters.[6]

As part of the contestation over openness, civic hacktivism aims at freeing "locked" data and recovering "hidden" data, which by itself becomes a form of activism, consisting in the act of "opening" data. This means rendering information into machine-readable data for further analysis and reuse by means of, for instance, scraping websites and decryption. Another issue is the creation of databases or the linking of existing ones: Accessinfo.hk assists in requesting documents from government departments and makes them available through its website. In addition, because the website publicly displays all communication with government departments regarding rejected

requests, it renders transparent some of the limits of openness. Moreover, if hackathons are about deploying data, "accessathons" involve gathering the data in the first place. For instance, there was a data rescue to retrieve press releases by Hong Kong's former pro-Beijing Chief Executive Chun-ying Leung for yet undefined, future purposes. In another instance, digital editions of newspaper articles were collected with the specific intention of spotting changes in the content later on, which could indicate retroactive self-censorship.

Highlighting the value of openness as transparency, Stefan Baack (2015, 5) contends that "'Open' refers to a higher degree of transparency (by sharing raw data) and the openness of political decision-making processes for public participation." Yet, we ought to register the postcolonial dimension of the struggles around openness in Hong Kong. The introduction of norms and standards precedes forestalled legislation regarding access to data and information, threatening to make the development of a more rights-oriented approach seem redundant. A related issue is that in dealing with the Open Data portal, the aforementioned positionality of the user conditions and delimitates aspirational citizen-subjectivities: there are no general rights to Open Data and at times one is expected to be a professional. Furthermore, "transparency" forms just one concretization of an openness that primarily serves economic rationalities, as demonstrated by the setup of the Open Data portal.

Nonetheless, openness as transparency supports a postcolonial quest for the fulfillment of a degree of popular self-determination in the context of semi-democratic representation. Central to current political struggles in Hong Kong is the election of the highest office, that of Chief Executive of the territory, which happens via a committee formed mainly on the basis of functional constituencies in which the pro-Beijing business elite is overrepresented. In addition, only half of the members of Hong Kong's LegCo are chosen by means of a popular vote, while the functional constituencies again determine the other half. Last, mechanisms of certification of candidates in recent years have led to controversial disqualifications. In data activism, the strong focus on behavior of policy makers and state agencies, which I illustrated above, seeks to redeem accountability and transparency. Open Data practices become integral to postcolonial struggle in that they generate the interplay between two notions of representation. First, Open Data probes "what is" and provides evidence for what exists "out there." Representing transparently "what is" translates into political consensus too, whereas obscurity translates into democratic-representational deficiency. Even, obstructions such as the PDF format have not been considered merely technical errors but political agencies enlisted to preserve state authority. Hence, second, transparent openness probes democratic representation, that is, the government's performance in "truly" representing Hong Kong's interests. Jacques Rancière (2009, 31) defines the community of sense in terms of "a frame of visibility and intelligibility that puts things or practices together under the same meaning, which shapes thereby a certain sense of community." Transparent openness can forge a community of sense in which data-centric epistemological discourse is able to consolidate political consensus. In practice, though, transparency is often considered compromised and the representation of the community of Hong Kong flawed.

Grounded Openness

It is perhaps emblematic of the postcolonial "zone of exception" where capitalism has introduced some privileges, that repression is associated strongly with the state. Meanwhile, other forms of power, such as the extraction and exploitation via data infrastructures, can remain relatively overlooked. Whereas the previous section shows how "transparency" probes state power, the question remains: what is the purchase of transparency as a rallying cry in the smart city? Raising this critical question implies the concerns introduced by the aforementioned conceptualizing approach, focusing on the coloniality of data power itself, which works through data infrastructures. More so, I mobilize my notion of recursive politics to highlight the ways in which data activists seek to shape techno-materialities in search of "another recursive process" beyond cybernetic control as well as the techno-material dimensions of their situated practice and being.

The promise of transparency and accountability through Open Data is, in some ways, incompatible with smart city investment in data-driven innovation. This is so because the material-aesthetic organizations and infrastructural dispositions underlying data-driven innovation undermine transparency as conventionally understood (Hoyng 2017). As Amoore (2018, 12) argues, such infrastructures are calibrated to serve data-driven "almost seeing" through "a bundle of experimental algorithmic techniques acting upon the threshold of perceptibility itself." While facilitating decision making and action, a clear picture of complex and dynamically adaptive Artificial Intelligence (AI) systems is often unavailable even to designers. Hence, the discourse of transparency is rather unsuitable for AI systems, which are not objects of study that can be scrutinized as such, but rather "relational achievements among networked humans and non-human agents" (Ananny and Crawford 2016, 11). Open Data initiatives do not remain outside or in opposition to these effects of datafication and data-driven innovation in the smart city; in fact, they are supposed to support them. When Open Data mixes with datasets extracted otherwise, they end up being decontextualized in untraceable ways (Cairn 2018), benefiting data industries that undermine borders and legislation (Sadowski 2019). Under these conditions, "openness" can turn into exposure, namely, vulnerability and inability to protect data as resource or property—demonstrating the extractivist coloniality of data power.

To the extent that recursive publics of data advocacy and civic-hacking groups remain preoccupied with the state, they fail to recognize such shifts in operations of power. They even risk advancing the globalization of a corporation-friendly standard of openness if they merely target the state to confiscate public data, without questioning the partitioning of "public" and "private" in neoliberal governance in the first place (Bates 2013). However, while such critique holds for data activism in Hong Kong during the early years, over time, those involved have grown more critical of disadvantageous partitions of the "public" and "private" themselves, or in fact their integration enhancing repressive state power. In light of such critical engagement, I argue that data activists are involved in recursive politics to intervene in historically produced data infrastructures and techno-materialities.

Among Hong Kong's data publics, alternative imaginaries of openness have emerged that account for the question of Open Data's bearing on (dis)empowerment. For one, during a meeting of the Station for Open Cultures and g0vHK in April 2019, the term "open washing" was used to criticize institutions for releasing datasets that are mostly useless and might have the sole purpose of boosting the number of "open" data records. Rather than transparency or empowerment of the public, the goal of such open washing was to join a governance hype or to appear to satisfy calls for support for the government's smart city initiative and, ultimately, to be listed favorably on aforementioned Open Data rankings. Moreover, instead of demanding Open Data per se, a second notion has emerged that any data are only effectively "open" to the extent that it enables "open decision" or "open participation." Having data available is not sufficient, as openness does not merely constitute a technical standard or objective condition, but a political valence that hinges on efficacy. Openness involves qualitative, normative-critical assessment as to whether released datasets are actually enabling users.[7] Such emerging, alternative normative visions contend that data can only be *open* when it is *grounded* too, namely, integral to sociotechnical relations that make it possible for data publics to affect and move things. Echoing this understanding, an Open Data Hong Kong hackathon carried the slogan "data with a purpose." Although the purpose remains deliberately undetermined, the slogan also suggests that there must be a purpose to data, somewhat undermining the belief that data are "objective" and "raw," meaning unprocessed and simply "given" rather than taken (Kitchin 2014). These emerging, normative visions account for criticism by scholars that openness by itself does not make for accountability or efficacy (Schrok 2016).

Open Commons?

The notion of "grounded openness" evokes a community of sorts. Arguably, it is the previous postcolonial struggles that have enabled critical data scholars and activists to rethink norms of digital data from the perspective of cultural rights and community ownership. While the critique of colonialism has inspired the notion of data colonialism, struggles against colonialism have inspired imaginations of "data justice" (Dencik et al. 2019). This notion integrates the debates about digital data with existing social justice frameworks and, more importantly, with struggles by marginalized groups globally against structural forms of inequality, oppression, and domination. Likewise, "data sovereignty" draws on popular self-determination as people's right to autonomous self-governance (Snipp 2016, 39) and encompasses "the management of information in a way that aligns with the laws, practices and customs of a nation-state" *or* the group or tribe (Lovett et al. 2019). The Indigenous example furthermore allows a critique of issues such as "epistemicide" (Santos 2014; see also Milan and Treré 2019) through datafication and of dominant, West-centric rights discourses that privilege the individual or the citizen at the expense of different, subaltern identities and groups as such.

As analyzed before, in the case of Hong Kong, a predominant focus of data activism addresses the question: to what extent does the government represent the interests and

the will of the people of Hong Kong? This focus integrates data activism and Open Data practices with postcolonial struggle. However, data activist groups themselves are not composed of the community "as such," or representatives thereof. They are recursive data publics that exist through the very infrastructures they act with and intervene in. Mediating techno-materialities reconfigure and refract the agents of postcolonial struggle. In light of such material reconfiguration, evocations of community in data activism require critical scrutiny. A name such as "Code for Hong Kong" suggests a representational claim to acting on behalf of the larger social body of "Hong Kong" and the "social good." Code4HK, unlike its peer organizations in the United States and elsewhere, has been decidedly anti-government and gained a particularly large following during the Umbrella Movement, to the extent that anonymous actors launched an app in its name, allegedly loaded with spyware to surveil protesters. Similarly upfront about localist (P.-K. Hui and Lau 2016) commitments, the website of g0vHK displays a countdown alluding to the time left before the expiration of the "One Country, Two Systems" agreement and hence Hong Kong's ultimate integration with Mainland China.

Even though data activism has been (with varying intensity) connected to the larger struggle over a degree of local self-determination and fighting for "local" interests, these groups, as recursive data publics, are not independent from power but "structured in response to the historically constituted layering of power and control within the infrastructures of computing and communication" (Kelty 2008, 9). Furthermore, they are not decidedly "local" either but rather cosmopolitan in orientation, manifesting "a hybridization of perspectives, organization forms, and tactics" (Segura and Waisbord 2019, 418), borrowed from other regions of the world. From the perspective of postcolonial critique, it becomes important to note that data publics are bound to act somewhat single-handedly and risk excluding others. As many participants are fully aware, these processes raise questions about agency and the ability to act "for" or "as" Hong Kong, that is to say, in its name. One further point is that by drawing on the authority that data-centric representation commonly enjoys, recursive data publics might contribute to what some have called "transparency tyranny" or "transparency imperialism" (see also Ruppert 2015). Such representation conceals its constructed nature, while disavowing what falls beyond the binary construction of marked "transparency" and "secrecy" (see also Birchall 2015, 2016). Doing so could deepen the marginalization of those voices that are overlooked and neglected, especially because recursive data publics consist of the relatively vocal and resourceful "superalterns" (Kelty 2008), such as students and professionals. Finally, recursive publics operate by multiplying datasets that are habitually decontextualized and recontextualized, "free" and "open" to be used by anyone. As Barbara Prainsack (2019, 3) contends, "the conflation of commons and 'open access regimes'—namely resources that are not owned by anyone—obscure the fact that the very possibility to govern a resource in a fair and equitable way requires that someone owns it." The abundance and "open-ended" potential of data as resource does not take away the ethical and political stakes of using data "about" and "belonging to" any given community.

However, it should be noted that the recursive politics of the data publics do not revolve around the principle of representation of a (preexisting) community per se,

despite the stated investment in locality. Rather, recursive politics is oriented onto the values of experimentation, participation, and transformation. For instance, the practice of "forking" involves participants splitting off to initiate new projects, driven by creative impulse or different views and investments. Forking originally referred to the computational duplication at the level of an operating system and subsequently came to define open-source activities of duplicating and sharing, before it turned into a metaphor for self-organization (Tkacz 2015). Although the formulation is not unique to Hong Kong, it carries particular meaning in relation to local political culture. For instance, the now defunct Code4HK used the term to describe the sharing of scraped and "freed" resources, and participants considered it a method that allowed for pluralism and antagonisms among themselves: when encountering disagreement, one could just start a parallel project, making use of the same data resources. Forking thus fuels a belief in the possibility of participation and heterogeneity in the context of a semi-democratic political system. More recently, Station for Open Cultures has used the slogan "Fork the movement," which calls for reorganizing Hong Kong's social movements in the aftermath of the Umbrella Movement and connecting them with civic hackers. The aim is to overcome the divide between data advocacy groups and civic hackers on one hand, and local social movements, on the other (cf. Meng et al. 2019).

The transformation of social movements also resides in techno-social becoming. After all, forking is not just a metaphor but a techno-social practice that involves data, tools, and platforms, signaling the publics' implication in techno-materialities. Recursive data publics do not simply use data, but they also *are* data; they do not simply deploy tools but also *consist of* their materiality. For instance, the platform Collaction, which is used by g0vhk.io and the Station for Open Cultures, has seven thousand registered users and seeks to mobilize volunteers and donors for community projects. The platform monitors trends and provides somewhat personalized recommendations to introduce projects to its users. Whereas Collaction seems to support the dynamics of forking, another project, Ourland.hk, seeks instead to reinforce the socially lived sense of locality through a "nearby" function that selects local news and updates about community activities. The argument is that though Facebook is widely used in Hong Kong, its geo-localization overlooks the more minute scale where social engagement and belonging often play out. Such projects give us a sense of techno-social becoming through recursive politics and of technodiversity, yet this does not take away the fact that they can be problematic in terms of political and ethical investments of postcolonial struggle.

Conclusion

This article has mapped discursive and technological constructions of openness as part of postcolonial histories and struggles, highlighting logics of exception pertaining to Hong Kong's status as a Special Administrative Region of China. As openness creates a field of struggle, I explored the ways in which data-centric imaginaries and practices have become integral to postcolonial struggle but also transform such struggle. By negotiating contextual and conceptual tendencies at the intersection of critical

data studies and postcolonial critique, I proposed the notion of *recursive politics*, which allowed me to consider techno-materiality as contextually situated and historically produced, yet not simply instrumental and subservient to social agendas.

Following my conception of recursive politics, recursivity is the source and locus of technodiversity and underscores an experimental material politics that identifies (indirect and social) consequences of technology and responds to them in a recursive process of techno-social becoming. Through emerging normative imaginaries around "openness," users learn to recognize the violence inherent in exposure, exploitation, and extractivism, as they engage in technological practices and design. Contentious, alternative norms, such as "grounded" openness, help tweak techno-social trajectories of becoming by establishing "another recursivity," as Y. Hui (2019) calls it, namely, a feedback loop in which publics manage to affect techno-materialities rather than merely being integrated into networks that control or determine them.

Recursive politics, however, remain problematic in terms of ethical and political investments of postcolonial struggle. For instance, should postcolonial struggles challenge "transparency tyranny"? And, could data-centric representation support a dissensual politics of aesthetics that evokes new "trajectories between what can be seen, what can be said, and what can be done" (Rancière 2009, 49)? Moreover, recursive data publics do not comprise of postcolonial, subaltern subjects but rather, they are superaltern subjects (Kelty 2008). Finally, there is a parallel between the openness of the smart city and its data-driven innovation economy, on one hand, and activist practices that similarly decontextualize and recontextualize data that are "open" and "free" to be used by anyone, on the other.

My analysis suggests that the techno-material operations of recursive publics contradict, to some extent, notions of locality, community, and "people." Rather than being composed of the community as such, recursive publics feature human-technological entanglements, the temporality of recursivity, and the experimental and participatory dynamics of forking. This does not delegitimize data activism per se. Yet, we need to critically consider evocations of community in data activism and in claims to data justice, data commons, and data sovereignty, especially in the context of postcolonial struggle when Open Data can reinforce histories of marginalization.

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Notes

1. See https://okfn.org/opendata/ (accessed March 24, 2018).
2. See https://www.basiclaw.gov.hk/en/basiclawtext/chapter_1.html (accessed December 2, 2019).
3. See https://theinitium.com/article/20161004-opinion-simonchu-records/ (accessed December 1, 2019).
4. See https://data.gov.hk/en/terms-and-conditions (accessed May 5, 2019).
5. See www.pcpd.org.hk › news_events › speech › files › GSMA0623 and https://www.pcpd.org.hk/english/news_events/speech/files/HKGCC_11Dec2017.pdf (accessed November 30, 2019).
6. See https://data.gov.hk/en-data/dataset/hk-hkpf-data15q2-appreciation-form-public-letters (accessed June 1, 2017). This dataset was first pointed out to me during the Open Data Day Hong Kong, February 25, 2016.
7. Personal interview, April 10, 2019, Hong Kong; Fieldnotes, "Open Data Day 2019," March 2, 2019, Hong Kong.

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