Airbnb, home sharing, and the social right to housing in Montreal

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From an air mattress on the founders' apartment floor to 6 million listings worldwide, the story of Airbnb, the world's largest short-term rental (STR) platform, is one of explosive growth. In cities around the world, that explosive growth has launched STRs into the centre of a public debate over the relationship between tourism, economic development, neighbourhood quality of life, and housing availability. Should housing be preserved for local residents, even if this means significantly restricting the short-term rental market? Or should residents be allowed to use their property as they see fit, either through part-time and sporadic home sharing or through dedicated STR commercial operations?

In this paper we use the case of Montreal to examine the short-term rental market and its interaction with the housing market and the social right to housing more broadly. We begin by discussing two competing perspectives on short-term rentals, one which sees it primarily as positive-sum "home sharing", and one which sees it as zero- or negative-sum commodification of housing. To adjudicate this debate with evidence, we present an empirical picture of Airbnb activity in Montreal, answering three simple but revealing questions: 1) How many Airbnb listings are active in Montreal, and how is this activity changing? 2) Who makes money on Airbnb in Montreal? 3) How much long-term housing has Airbnb taken off the market in Montreal? We conclude that the financial benefits of STRs are narrowly concentrated in a small number of hands in Montreal, while the entire city is suffering from the loss of nearly 5,000 rental housing units which have been converted to dedicated short-term rentals. Next, we discuss some of the broader social implications of the growth of the STR industry—in particular the emergence of a new business ecosystem reliant on short-term rentals and organic opposition to short-term rentals among housing activists in Montreal and other cities. We conclude by discussing how new regulations could help channel STRs more narrowly—and more productively—towards the idea of home sharing, and thereby protect the right to housing for city residents

Short-term rentals: home sharing or housing commodification?

The evidence is now clear; home sharing—and the sharing economy more broadly—are changing the social and economic character of urban life (Koopman et al. 2014; McNeil 2016;

Salice and Pais 2017). The precise nature of this change is still be debated, though. Proponents of STRs variously argue that these platforms facilitate peer-to-peer sharing which empowers the general population (Schor 2016), can promote a more equitable redistribution of wealth (Crommelin et al. 2018) and can provide accommodation in areas underserved by traditional accommodation providers (DiNatale et al. 2018).

At the same time, scholarship is increasingly linking Airbnb to a host of negative impacts on cities and neighbourhoods, beginning with quality of life issues—including noise, crime and traffic—and ensuing community backlash (Freytag and Bauder 2018; Füller and Michel 2014; García-Hernández et al. 2017; Jordan and Moore 2018; Lambea Llop 2017). Scholars have also found evidence that landlords are replacing long-term tenants with short-term holiday rental guests, leading to a decline in housing supply and hence housing affordability (Gurran and Phibbs 2017; Lee 2016; Schäfer and Braun 2016; Wachsmuth et al. 2017, 2018). Further studies have directly linked increases in Airbnb listings to increases in housing prices and rents (Barron et al. 2018; Horn and Merante 2017) as well as to gentrification and displacement (Gant 2016; Mermet 2017; Wachsmuth and Weisler 2018). Airbnb hosts have also been shown to discriminate based on race (Edelman et al. 2017), while host earnings have been found to be concentrated among white hosts even in majority-Black neighbourhoods (Cox 2017) and visible minority hosts have been found to charge less than their white counterparts (Kakar et al. 2018). In general, commercial operators appear to earn a disproportionate share of Airbnb platform revenue (Combs et al. 2018). Research on STRs has also begun to investigate the commodification of host's homes (Bialski 2017; Roelofsen 2018; Roelofsen and Minca 2018; Knaus 2018) and the labour practices of hosts (Schor and Attwood-Charles 2017).

As the impacts of STRs on cities have become clearer, local policymakers have increasingly begun to regulate the sector, both to internalize negative externalities and to subject STRs to the same regulatory regimes as hotels (Nieuland and van Melik 2018). Studies into STR regulations have examined the challenges of regulating STR platforms (Guttentag 2015; Gurran 2018), and evaluated the impacts of regulations on STRs in various cities (Schäfer and Braun 2016; Wegmann and Jiao 2017; Gurran and Phibbs 2017; Wachsmuth et al., 2019). The difficulty of enforcing STRs regulations was frequently found to be a major challenge for regulators (Guttentag 2015; Gurran, 2018; Leshinsky and Schatz 2018; Zale, 2016).

Underlying these empirical and political debates is the fact that the term "home sharing", along with the broader idea of the "sharing economy" carries with it a set of normative associations. Most literally, but also most significantly, home sharing implies that people are sharing their own homes—that this activity is undertaken by residents who are out of town for a week's vacation, or who have a spare bedroom that would otherwise go unused. Home sharing thus further implies a positive-sum utilization of surplus resources. Since the economic and social vitality of cities is

premised on the density and intensity of social interactions, lodging tourists in rooms and apartments which would otherwise have been vacant is clearly a net benefit for the city. And it is clearly a benefit for the home sharers themselves, who can use their STR income to help pay their mortgage or their rent, and who even have the possibility of forming new friendships with their guests (Carey 2018 has collected a number of such stories).

The STR platforms understand that the normative framework of home sharing is vital to their claims on public legitimacy, and for this reason take great pains to present their business activities as facilitating small-scale home sharing as opposed to large-scale commercial operations. So, for example, Airbnb's networks of hosts which it enrols in lobbying and public relations efforts on its behalf are called "Home Sharing Clubs". And, in response to our early research suggesting that Airbnb's platform was dominated by commercial operators (Wachsmuth et al. 2017), a company spokesperson responded that "the vast majority of [Airbnb hosts] are middle-class Canadian families sharing their homes to earn a bit of additional income to help pay the bills" (Powell 2017).

In contrast to these portrayals of STR platforms as home-sharing enablers, housing organizations and community groups are increasingly telling a different story—one of conflicts between neighbours and visitors, the hotelization of buildings, and the eviction of long-term tenants to free up their former homes for short-term guests. These groups, from cities including Los Angeles (Samaan 2015), Montreal (Desmarais 2016), New Orleans (DeDecker et al. 2018), and New York (New York Communities for Change and Real Affordability for All 2015), accuse Airbnb of facilitating the mass removal of housing by commercial operators who are operating full-time, de facto hotels in what used to be (or otherwise could have been) long-term rental housing. While tourists might benefit from a large supply of low-cost accommodations in the cities they visit, widespread commercial STR operations implies a negative-sum reduction in housing affordability and availability for local residents. It further implies that STR platforms are above all vehicles for the ongoing commodification of housing (Madden and Marcuse 2016), in the sense that they provide new opportunities for property owners to extract financial rents from their properties (Wachsmuth and Weisler 2018).

Establishing the facts is vital for understanding the social and public policy implications of this debate. If STR platforms are predominantly zero-sum or even positive-sum home sharing platforms, it would be plausible to understand them as beneficially expanding the social right to housing, by giving owners and tenants increased flexibility to manage spare residential space within their homes. Under this scenario, public policy should accordingly be permissive towards STRs. If, on the other hand, STR platforms are dominated by commercial operators converting long-term housing into dedicated STRs, we should understand STRs as a negative-sum restriction on the social right to housing, and an expansion instead of the right of rentiers to

further commodify housing, since STRs are effectively a vehicle for a small number of landlords to profit off the reduction of the city's supply of rental housing. Under this scenario, public policy should aggressively restrict STRs, targeting full-time, dedicated rentals in particular.

Airbnb in Montreal: an empirical picture

In order to adjudicate this debate with evidence, in this section we present an empirical picture of Airbnb activity in the Montreal region. Since Airbnb is by far the dominant platform in the STR market, an analysis of Airbnb itself serves as a reasonable proxy for the STR market more generally. Montreal is a mid-sized city-region, with 1.7 million residents in the central city and 4 million residents in the metropolitan area. It receives large ongoing tourist flows, and it is host to strong and well organized civil society movements fighting for affordable housing and tenant rights. It is thus a excellent case study for investigating how short-term rentals intersect with the social right to housing. The results in this section rely on a spatial-big-data analysis of all Airbnb activity in the Montreal Census Metropolitan Area (CMA) between 1 September 2016 and 31 December 2018. We combine canonical information about each listing (such as whether it is an entire home or a private room, where it is located, and who its host is) with estimates of daily activity and revenue for each listing supplied by the webscraping firm Airdna and 2016 Census data from Statistics Canada. The methodology is described in further detail in Wachsmuth and Weisler (2018) and Wachsmuth et al. (2018).

How many Airbnb listings are active in Montreal, and how is this activity changing?

During the year 2018, there were an average of 22,640 Airbnb listings active each day in the Montreal CMA. (We define an active listing as a listing which can be viewed on the Airbnb website on a given day, regardless of whether it was reserved, available for a reservation, or temporarily blocked.) As Table 1 indicates, Airbnb listings are disproportionately concentrated in the central city; 90.2% of all listings in the region are in the City of Montreal, while 51.7% of listings are in the Ville-Marie and Plateau-Mont-Royal boroughs. Figure 1 shows the spatial distribution of these listings, while Figure 2 shows their growth over time. Figure 2 demonstrates both significant variation in listing activity over the course of the year, and an underlying pattern of growth. In 2018 the number of active listings peaked on August 4, when there were 24,070 active listings, and was at its minimum on February 4, when there were 21,570 active listings. Meanwhile, the number of average daily active listings in the Montreal CMA has grown in the last year by 12.9%, from 20,050 in 2017 to 22,640 in 2018.

	Average daily active listings in 2018	Year-over-year growth rate	% of 2018 active listings which are entire homes
City of Montreal	20,410	12.0%	70.4%
Ville-Marie	5,580	15.1%	79.8%
Le Plateau-Mont-Royal	6,120	9.1%	68.7%
Rest of CMA	2,230	22.1%	60.4%

Table 1. Active Airbnb listings in the Montreal region

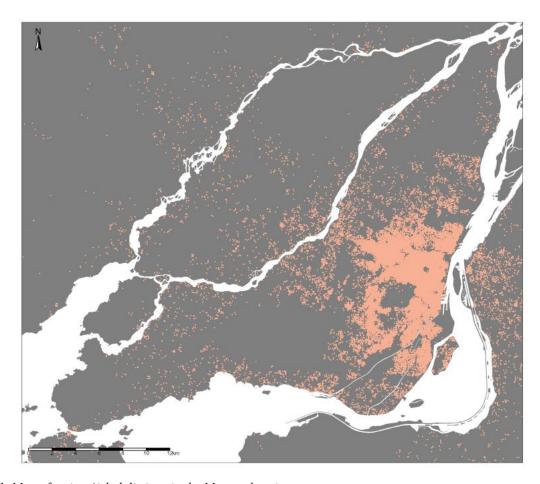


Figure 1. Map of active Airbnb listings in the Montreal region

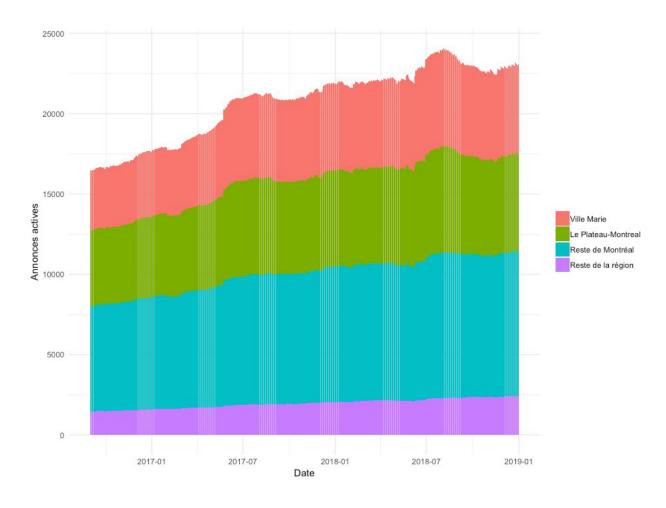


Figure 2. Growth of active Airbnb listings in the Montreal region, 2016-09-01 to 2018-12-31

A substantial majority of Airbnb listings in Montreal are entire homes (69.4%), as opposed to private rooms (29.7%) or shared rooms (0.9%). In general, areas closer to downtown have a higher proportion of entire-home listings, and areas further from downtown have a higher proportion of private rooms. The percentage of active listings which are entire homes has risen steadily over the last several years, from 65.6% in 2016 to 67.2% in 2017 to 69.4% in 2018. In other words, Montreal's short-term rental market has become increasingly dominated by entire-entire-home rentals.

Who makes money on Airbnb in Montreal?

Airbnb hosts are earning unprecedented revenue in Montreal, but a smaller and smaller share of operators are earning a larger and larger piece of the pie. In 2018 hosts across the city earned \$203.8 million (CAD), which was a 13.9% increase in revenue over the previous year, outpacing the 12.9% growth rate in active listings. This revenue was not evenly distributed, however. Among the Montreal region's 17,010 hosts, the median host earned \$3,120, while the average

host earned \$11,990. This large disparity indicates that revenue is concentrated among a small share of high-earning hosts.

One way to measure host revenue inequality is to look at how revenue is distributed among higher- and lower-earning hosts. What we find is that Montreal has extremely high concentration of revenue among top-earning hosts, and that in the last year the share of host revenue going to the top hosts has continued to increase. The top 10% of hosts in the region earned 65.7% of all Airbnb revenue last year, a substantial rise from the 62.5% they earned in 2017, and a number which increases to 69.8% in Ville-Marie. Meanwhile, the top 1% of hosts (just 170 hosts) earned fully 33.3% of all revenue in the Montreal region (an increase from 29.6% in 2017). These numbers are considerably higher than any other city in Canada, and represent an increasing concentration of income when compared to previous years. The share of host revenue earned by entire-home listings is much higher than these listings' share of total listings. While 69.4% of listings are entire homes, 91.0% of host revenue was earned by entire-home listings. Unlike other indicators of revenue inequality, however, this share has remained mostly constant over the last two years.

The top five Montreal hosts each earned more than \$1.5 million in the Montreal region last year. (There were hundreds of additional hosts who earned more than \$100,000.) Three of them are well-known accommodation firms (Sonder, Nuage, and GroupeDacoh), while the remaining two are anonymous hosts identified only by a first name ("Mike" and "Alejandro"). All five have seen strong growth in revenue in the last year, and between them earned 7.2% of all the Airbnb revenue in the region, despite representing only 0.03% of revenue-earning hosts. Put differently, these five hosts earned on average more than 244 times the average Montreal host last year.

While the concentration of platform revenue among a small number of hosts implies that Airbnb is dominated by commercial operators rather than part-time home sharers, it is possible that some of the top-earning hosts are simply homeowners who travel frequently and are thus able to engage in frequent and lucrative home sharing. A different way, therefore, to measure commercial operators is to look at hosts who operate multiple listings at the same time. This is a conservative measurement because an Airbnb landlord could only have a single listing which they manage full-time, and because landlords are free to open multiple Airbnb accounts in order to hide the true size of their holdings. We identify "multilistings" as situations where a single host operates two or more entire-home listings, or three or more private-room listings. If a host has two or more entire homes on Airbnb, they are by definition a commercial operator, since they cannot be only renting their principal residence. And if a host has three or more private rooms on Airbnb, they are likely to be a commercial operator as well, since few Montreal residents are likely to live in a four- or more bedroom apartment and rent out all of the remaining

rooms. Multilistings thus provide a minimum estimate of the extent of commercial activity on the Airbnb platform in Montreal.

Multilistings are pervasive across the Montreal region. They account for 31.7% of all listings, but earn 65.2% of all revenue. Multilistings are particularly concentrated in Ville-Marie borough, where they account for 50.4% of all listings and earn 79.6% of all revenue. Entire homes are much more likely to be multilistings than private rooms are, which indicates that, in the absence of any regulatory control, Airbnb hosts in Montreal are assembling collections of apartments and converting them to short-term rentals. The proportion of both listings and host revenue accounted for by multilistings is steadily rising in Montreal: on September 1, 2016, less than 40% of Airbnb revenue in the region was earned by multi-listings, but that figure is now 65.2%.

How many homes has Airbnb taken off the market in Montreal?

A final question about STRs in Montreal concerns their impacts on local housing supply. Given that there are thousands of Airbnb listings apparently being operating on a commercial basis in the region, it is highly likely that many of these were formerly long-term rental housing, or would otherwise be used as long-term rental housing if they were not on Airbnb. Even with detailed estimates of the daily activity of Airbnb listings, it is difficult to directly count how many homes have been converted from long-term rentals to short-term rentals. One listing rented 120 nights a year might be the home of a frequent traveller, while another similar listing might be a dedicated commercial operation. To know for sure, we would need to ask the hosts, but Airbnb hosts are anonymous. Still, entire-home listings that are frequently rented are a useful proxy for understanding Airbnb-induced housing loss, as housing units that are frequently or very-frequently used for short-term rentals are unlikely to function as long-term rental housing for local residents. We define "frequently rented" as listings that were available for rent at least half the year (so 183 days or more) and were actually rented at least 90 of those nights. In the last 12 months, there were 4,450 frequently rented entire-home (FREH) listings in the Montreal region, constituting 21.8% of all Airbnb listings. Furthermore, there were 220 clusters of private-room listings operated by individual hosts within a single apartment building, and which therefore are almost certainly entire units converted into de facto hostels—what we elsewhere call "ghost hotels" (Wachsmuth and Shillolo 2019). These 220 clusters comprise 880 private-room listings, and we estimate that they collectively removed 280 housing units off the market in Montreal (since many clusters span multiple housing units in a single building). Adding the frequently rented entire-home listings to the private-room ghost hotels suggests that Airbnb has taken approximately 4,730 homes off the long-term rental market in Montreal, and facilitated their conversion to full-time short-term rentals.

These homes converted to STRs constitute a higher percentage of total housing units in the central city, particularly in the Ville-Marie and Plateau-Mont-Royal boroughs, than surrounding parts of the regions (Figure 3). While this pattern has not shifted in the past 12 months, it has intensified; a large amount of central city areas saw an increase in the percentage of total housing units that are FREH listings. FREH listings have increased at a much faster rate than other listing types in Montreal. Region-wide, the number of these listings increased by 21.1% last year, compared with a 12.9% growth rate for all listings. The result is that there are now significant portions of Ville-Marie and the Plateau-Mont-Royal in particular which have 5% or more of their housing stock either full-time on Airbnb or at risk of being converted to full-time.

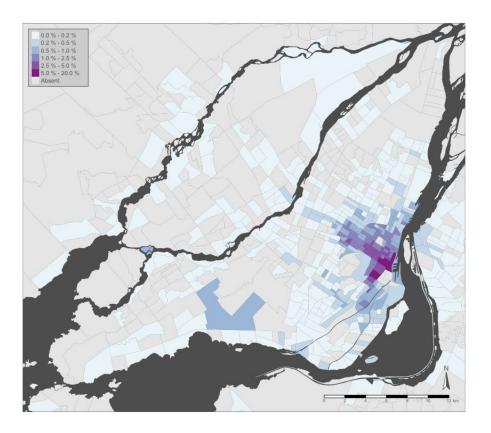


Figure 3. Estimated percentage of housing units converted to dedicated Airbnb rentals in 2018, by census tract

The consequences of commercialized home sharing

The previous section provided an empirical analysis of Airbnb in Montreal which demonstrated that the STR sector is dominated by commercial operators rather than home sharing, and that it is having significant negative impacts on housing availability, particularly in the central-city neighbourhoods of Ville Marie and the Plateau-Mont-Royal. We now explore in the next two

sections two consequences of these facts: the emergence of a new business ecosystem centred on Airbnb, and organic community opposition to STR. While business innovations and housing-focused social movements would seem to have little in common, we argue that they are related outcomes of the specific structure of the STR market. If this market were in fact mainly a platform for small-scale and sporadic home sharing, there would be little opportunity for firms to profit off the market, and little motivation for social movements to oppose the market. It is precisely because the STR sector is in fact dominated by commercial operators that there are both expanded opportunities for profit-making and expanded reasons for opposing this sector in the name of the social right to housing.

The rise of a commercialized STR sector has generated a wave of new businesses. Some of these are the commercial operations themselves—firms or simply individuals running anywhere from a single listing to several hundred listings on a full-time basis in what used to be, or otherwise could be, housing for local residents. At the low end of the commercial operators are individuals investing in a single property—this is frequently a condominium that might, before the emergence of STR platforms, have been turned into a long-term rental property. Indeed, Montreal like other Canadian cities has relied on new condominium construction for a large proportion of its new rental housing stock, since new purpose-built rental developments have been scarce for the last thirty years, and our evidence suggests that a significant amount of this new condominium construction that otherwise would have entered the long-term rental market has instead become dedicated short-term rentals.

One Montreal-based commercial operator who was relatively small-time but in the process of "massively scaling up [his] operation" described in personal correspondence with us some of the considerations of managing multiple properties as full-time Airbnb rentals. "When managing multiple buildings, it is good practice to isolate your buildings into separate Airbnb accounts. This enables you to 1) split the risk—if you get bedbugs on one building, you don't tarnish all your reviews, and 2) provides a good exit strategy since you are now able to re-sell the building plus the [operating company] plus the Airbnb account as a cash generating asset." This statement implies, first of all, that our estimates of the extent of commercial operators on Airbnb are likely to be substantial underestimates, since we are forced to trust that each Airbnb operator only operates a single host account. But more significantly, he describes the extent to which the Airbnb account connected to a property has become a financial asset in its own right, since it generates cash (and has a record of transactions to prove this fact) and can be bought and sold along with the property itself.

This commercial operator is now earning hundreds of thousands of dollars each year from his Airbnb listings in Montreal, but he is not close to the largest operator in the region. That honour belongs to the real estate firm Sonder, which had 198 Airbnb listings active in Montreal at the

end of 2018. We estimate their 2018 revenue on Airbnb to be over \$5 million. Sonder is now an international firm based largely in San Francisco, but it originated in 2014 in Montreal as Flatbook, a firm which subletted student apartments on STR platforms (Lindeman 2015). After moving to San Francisco, the firm raised \$85 million in financing in the summer of 2018, and now has over 350 employees and leases more than 2,200 apartments (Silcof 2018). While Sonder offers its own booking engine for renting its holdings, 80% of its listings are booked through other STR platforms including Airbnb (Martineau 2019). As they have shifted from managing others' properties for them, Sonder now pitches themselves to in the language of urban development economics directly to property owners—"Lease to Sonder. Redefine highest and best use" (Sonder 2019)—and has plans to open a boutique hotel of its own in downtown Vancouver (Pablo 2019). Not only is Airbnb big business, businesses relying on Airbnb are becoming big business, and Montreal's Sonder has emerged as one of the biggest.

Alongside dedicated commercial operators such as Sonder, a profusion of firms have sprung up to support STR operations, in Montreal and elsewhere. These include services offering full management of others' Airbnb listings, cleaning services specializing in STRs, and even corner stores and coffee shops installing "smart boxes" to facilitate automated key exchange. To most travelers using the platforms this infrastructure remains relatively invisible; the professional cleaning service moves on to the next STR before the guest arrives and the management company may not identify itself as such to the guests it manages. In Montreal, management services such as Monsieur Concierge and Airsorted (a venture-capital-backed firm) offer to run your Airbnb for either a predetermined fee or a percentage of revenue. Commissions are typically in the range of 25% of total revenue. Airsorted ca declares: "Le ménage, la lessive, les clés. On se charge de tout".

The key feature of these intermediary firms is that they allow a much wider range of Airbnb hosts to professionalize their operations. No longer does the family going out of town for the weekend have to worry about when their guest is planning to arrive or coordinating a complicated key drop. Someone away for a full month does not have to worry about finding a guest visiting for that entire period; instead, they can hire a cleaning service and key manager and allow three or four (or ten) different groups to stay at their home during that month. Most significantly, however, these intermediaries make it feasible to own a dedicated, full-time Airbnb operation without needing to work full-time at managing that operation—to use Airbnb to become a passive rentier. One revealing fact from our data analysis is that more than a third of active Airbnb hosts in Montreal respond to guest inquiries in under five minutes on average, and more than one quarter respond in under one minute. These response times are only feasible through the use of automated bot response services. STR intermediary services can make life easier for small-time home sharers, but more importantly they supply the economic infrastructure essential to the commercialization of STRs.

Housing activists against STRs

While academic researchers have increasingly begun to document evidence of the problematic impacts of STRs on housing availability and neighbourhood quality of life, in Montreal as in many other cities it was community organizations who were the first to raise concerns with the rapid proliferation of STRs. To raise awareness and counter triumphalist sharing-economy narratives of innovation and economic development sometimes associated with STRs, local groups have used a variety of tactics including public forums, graffiti and sticker campaigns, and policy reports to raise public awareness and to put pressure on politicians to regulate the STR sector. These groups have tended to range from supportive to indifferent towards small-scale home sharing, and instead have targeted commercial operators opening de facto hotels in residential neighbourhoods and the STR platforms—Airbnb above all—facilitating this activity.

In Montreal, one of the most prominent organizations resisting Airbnb has been the Comité Logement du Plateau Mont-Royal (CLPMR). The group, broadly tasked with defending renters' rights and increasing the amount of social housing, is based in the renter-heavy but increasingly expensive central-city Plateau Mont-Royal neighbourhood. In the fall of 2016, before the recent increase in scholarly attention to the problems caused by Airbnb, CLPMR released a report highlighting the rapid increase in the number of Airbnb operations in the neighbourhood and attendant issues with noise and security (Desmarais 2016). In ongoing public advocacy work, CLPMR argues that Airbnb harms resident's quality of life through noise and neighbourhood nuisances, increased housing costs and reduced housing supply, and eviction risks; they characterize the service as "un outil de la gentrification" (CLMPR 2019).

Working with other Montreal based housing organizations, including the Comité Logement du Ville-Marie and Front d'action populaire en réaménagement urbain (FRAPRU), CLMPR has campaigned to bring awareness to the scale of the STR issue in Montreal and to increase pressure on policymakers to regulate short-term rentals in the public interest. Using familiar language from urban social movements, they argue that STR platforms threaten Montreal residents' "right to the city" (Renaud and Roberge 2019). CLPMR argues for a ban on short-term tourist rentals including Airbnb (CLPMR 2019), and to this end has done many things, including hosting a citizen consultation, amplifying the voices of residents affected, releasing reports on the numbers of and impacts of Airbnb and providing information about how those affected can fight back against short-term rentals and working with government to encourage stronger regulations.

CLPMR's activities in Montreal place them in the company of housing organizations in cities around the world which have mobilized against STRs. Another notable example, and a useful

point of comparison for CLPMR, is Jane Place Neighborhood Sustainability Initiative in New Orleans. Although New Orleans has a history of intensely racialized poverty and disinvestment which sets it apart from Montreal to some extent, it shares some important similarities with Montreal—it is a popular tourist destination with historically low housing costs, and has struggled in recent years with gentrification. (Another thing the two cities share is that in each city Sonder is the largest Airbnb operator.) Jane Place is both a housing provider (a community land trust) and an advocate for housing rights. The organization has linked the proliferation of STRs to an increase in housing costs and a prioritization of tourists over residents, along with the displacement of African American communities from central-city neighbourhoods with high job accessibility (DeDecker et al. 2018). While the group does not go as far as the CLPMR in advocating for a ban on short-term rentals, it calls for a tightening of regulations on STRs, including a 'one host, one home' policy. In the words of Breonne DeDecker, the Program Manager for Jane Place, "We need to be placing the housing needs of residents in front of the property values of speculators" (Perkins 2019).

In addition to releasing reports and lobbying the city's government, community groups in New Orleans have engaged in creative and visible protest tactics including holding a mock funeral parade for "affordable housing" and "real neighbors" (Litten 2016). In response to this pressure, the New Orleans municipal government has taken recent steps to strengthen its STR regulations, following many of the guidelines recommended by Jane Place (Adelson 2019). In Montreal, likewise, pressure from community groups and activists has helped encourage the Plateau Mont-Royal and Ville Marie boroughs to introduce new regulations of short-term rentals limiting them to specific commercial streets (Corriveau 2018), and to remove lock boxes from public property suspected of being used by illegal short-term rentals (Vézina 2019).

Conclusions: How should cities respond to the growth of short-term rentals?

Montreal presents a stark case of short-term rentals contributing to the increased commodification of housing. Contrary to the optimistic ideas of sharing-economy proponents, our evidence suggests that the STR sector cannot reasonably be described as "home sharing", but instead is increasingly dominated by commercial operators who are profiting off the conversion of local rental housing into de facto hotels and the erosion of local renters' social right to housing. In the face of these facts, how should cities and higher-level governments be responding, in Montreal and in the many other cities confronting similar challenges?

In Montreal, the prevailing regulations on STRs are set and enforced by the Quebec provincial government. They are designed primarily to facilitate the collection of tax revenue, treating STRs like any other hotel or tourist accommodation (CBC News 2017). But inadequate

enforcement of zoning and safety regulations allow STRs to operate like hotels without complying with the applicable rules. STR operators can flaut zoning by-laws and locate in residential neighbourhoods which city officials never meant to see high traffic commercial activities. A lack of adherence to the health and safety codes required of hotels puts tourists and visitors at risk and makes it cheaper for STR operators to convert formerly residential buildings. While two Montreal boroughs (Plateau Mont-Royal and Ville Marie) have introduced additional regulatory requirements limiting STRs to specific streets and (in the case of Ville Marie) requiring them to be at least 150m apart (Corriveau 2018), these regulations will be difficult and expensive to enforce in the absence of good-faith cooperation from Airbnb and the other STR platforms. Unfortunately, such cooperation has not been forthcoming, either in Montreal or any of the other dozens of cities we have studied.

How can cities foster the potential positive-sum benefits of home sharing while preserving quality of life and housing affordability for residents? In our opinion, three useful principles are: one host, one home; no full-time entire-home rentals; and mandatory data sharing. To begin with, regulators should insist that short-term rentals are "home sharing" arrangements—that hosts are actually sharing their own primary residences. This would enable residents to rent out their home when they leave for a weekend, or occasionally rent a spare bedroom to visitors. A "one host, one home" requirement would prevent the proliferation of large-scale commercial operators and the hotelization of entire buildings and streets. Likewise, hosts should not be permitted to rent their homes to short-term guests for large amounts of the year. Neighbours and neighbourhoods should not be subjected to constant streams of often disruptive visitors. While different cities have set different thresholds of nights, often between 60 and 120 nights per year, some threshold is important for limiting STRs to actual home sharing.

Finally, platform cooperation is the sine qua non of any effective public-interest regulation of STRs. This means, at a minimum that platforms must share data with regulators to allow the latter to enforce regulations effectively. More ideally, platforms should be held responsible for proactive enforcement of regulations. So, for example, if a city bans STRs within a certain geographical area, Airbnb should refuse to allow listings to be created in that area. The evidence suggests that even the most stringent regulations will struggle to reduce the impact of STRs on housing availability if regulators do not have access to data and platforms do not engage in proactive compliance. For example, New York City's STR regulations are some of the strictest in the entire world, effectively banning all entire-home STRs, but they are widely flouted by STR hosts and the platforms themselves. New York City passed new regulations in 2018 requiring the platforms to share data about their hosts and booking with the City, which Wachsmuth et al. (2019) estimated could return 8,700 housing units to the long-term rental market by Airbnb. In the absence of cooperation from Airbnb (which has in fact sued New York

to prevent the law from taking force), these 8,700 homes continue to be occupied by tourists rather than residents.

The bottom line is that cities around the world face similar incentives and constraints with respect to short-term rentals. While the idea of home sharing is a nice one, the reality is that commercial operators of short-term rentals have used the Airbnb platform to erode residents' access to affordable housing, and Airbnb has facilitated this activity even as it promotes a misleading rhetoric of home sharing. Urban social movements have risen to the challenge and are opposing this commodification of housing and drawing attention to its negative consequences. But ultimately policymakers will need to rise to the challenge as well, and implement regulations which ban commercial STRs and insist on accountability from the platforms, in order to restore thousands of lost housing units and shore up the social right to housing.

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