



Food relief deliveries and urban topologies of pandemic risk in Toronto

Scott Prudham¹

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My first day making emergency food relief deliveries for a volunteer organization based in the Jane Street and Finch Avenue area of Toronto’s northwest took place in April of 2020 amidst the first wave of the COVID-19 pandemic. I drove north from my home through areas of the city chronically underserved by public transit on what is typically a chaotically busy four-lane street. On that day, however, traffic was light as public health restrictions had led to school and daycare closures, and many people were staying home, including from work. In those early days of the pandemic in Toronto—memorable in hindsight for the way grocery store shelves were stripped bare of toilet paper, pasta, and other staples—compliance with restrictions and recommendations was relatively widespread. Yet, as I was soon to see first-hand, many people did not have the option to stay home. They were instead compelled to go to work, travelling—frequently by means of public transit, including on scandalously overcrowded busses—if they wanted to keep their jobs. This of course elevated the risk of viral exposure for themselves, their households, and the neighbourhoods in which working from home was more exception than norm.¹

Such contrasts, from one neighbourhood to the next, sometimes from one block to the next, shaped an “urban topology” of pandemic risk in Toronto defined by the ways in which exposure risk and disease morbidity were constituted by uneven geographies of employment, but also food and housing security, income, wealth, racialized difference, and urban form. In what follows, I expand on these themes based on a series of food relief deliveries I made in Toronto over a period of 10 months, working for two different non-governmental organizations. After some comments regarding the basis of my observations, I reflect

¹ Reuschke, D., & Felstead, A. (2020). Changing workplace geographies in the COVID-19 crisis. *Dialogues in Human Geography*, 10(2), 208–212. <https://doi.org/10.1177/2043820620934249>

✉ Scott Prudham
scott.prudham@utoronto.ca

¹ Department of Geography and Planning and School of the Environment, University of Toronto, 5th Floor, 100 Saint George Street, Toronto, ON M6S 3G3, Canada

on some specific moments from my sojourns and set these in a broader context of urban socio-spatial inequality and the uneven geographies of the pandemic in Toronto. I then reflect on the notion of urban topology as a way of conceptualizing the spatiality of pandemic injustice.

Method

My decision to reflect on and write about these experiences came after I had already been out on some delivery runs. So, this initiative was actually not born of a research impulse but came about primarily as a way to ease my anxiety, and a growing sense of both alienation and something like helplessness brought about by the pandemic. Soon after the pandemic began, it was quite apparent that the impacts and risks were going to be geographically uneven and profoundly unjust, and that this would be manifest at numerous scales from the international to the neighbourhood. It was less clear what to do. Given a flexible schedule and my own car, making deliveries of some kind seemed an obvious way to proceed.

I first reached out to several long-term care facilities, but that came to nothing. I then connected with an organization called Volunteer Toronto (essentially an umbrella group matching volunteers with volunteering initiatives) and was paired with one and then a second organization specializing in emergency food relief. With one exception—a single delivery for a third group—I worked exclusively with these two food relief organizations between early April of 2020 and late February of 2021, at which point I had to stop for personal reasons.

Thus, while I did not set out with the intention to “do research”, I did keep records of the dates, times, and locations of my trips, and soon after my first delivery run, I began to take notes on what I was observing and experiencing. In total, I made 14 delivery runs. The norm was ten deliveries per trip, though a few instances involved more and some less.

I did not choose where I made deliveries. Neither was I offered a choice. While most of my trips took me to the north and northwest of Toronto, on at least three occasions, I was sent to more central, eastern, and northeastern parts of the city. This context matters because it explains some of how it is that I was generally quite unfamiliar with the neighbourhoods where I made deliveries.

It is important to state that not all of the deliveries went to people living in high-density housing, nor to people in circumstances that seemed (on superficial inspection) obviously dire. Some recipients—a decided minority—lived in (apparently) single-family detached or semi-detached homes, while others lived in smaller apartment complexes that by outward appearances looked to be relatively up-market. Other recipients lived in neighbourhoods that are not generally poor, heavily racialized, or particularly dense in their development patterns. Some lived in public housing; others did not. While I observed such differences, I cannot make any claims about the specific circumstances of the lives of any of the recipients. I considered it out of the question to interview any of them. What I think is fair to assume is that the people to whom I was making deliveries were quite likely experiencing some degree of difficulty

“getting by”. It is possible that some of them might have been exploiting the relief organizations for free food they did not need. But I am assuming such is not the norm.

Starting out in (and getting lost en route to) Westminster-Branson

My very first delivery went to someone living in Westminster-Branson, one of the 31 neighbourhoods officially designated by the city as a Neighbourhood Improvement Areas (NIA).² It is located in North York, one of the six constituent municipalities formally dissolved into the amalgamated City of Toronto in 1998.

I began by picking up the food from the organisation office where several volunteers worked, a cramped, anonymous space located in a shopping plaza in the Jane and Finch area. All masked, we navigated what were still new and awkward social norms of physical distancing and hygiene. One of the volunteers asked me my name, checked her records, and then handed me a list of delivery recipients with addresses and phone numbers for each. She also gave me a crude map indicating the sequence in which I should make the ten deliveries along with instructions for coordinating with each recipient. After I loaded sacks of practically identical staple items (i.e. pasta, rice, bread, cooking oil, soup, jam, etc.) into the back of my car, I called the first recipient to tell her I would be at her building in 15 min, asking if she would be willing to meet me in the lobby. She agreed.

Then I got lost. The details of how that happened are not relevant, but the fact of my misdirection certainly is. I have lived in Toronto for over 20 years. Even so, this and other deliveries on other days to follow took me to parts of the city relatively distant (in multiple respects) from my own home and neighbourhood in west Toronto, as well as from the areas of the city I frequent for working, shopping, and recreation.

After eventually finding my way, I parked beside a sprawling, drab, grey apartment tower. I called a second time and the same woman answered, but this time with an irritated tone. She explained that she had been waiting in the lobby of her building since 15 min after I called the first time, as we had agreed. Yet, it had taken me at least 30 min to drive there. I apologized and we hung up. I stepped out of the car, took a bag of food from the trunk, and walked toward the building entrance. As I did, an elderly woman exited the building and moved slowly toward me, stooped somewhat but moving with clear purpose, a sharp glare fixed on me. She asked me in a scolding tone where I had been. When I told her I had been lost, and apologized again, she asked if this was my “first time doing this”. “Yes”, I acknowledged, “it is”. She then responded “Ok, but maybe next time you need to bring a map”. Point taken.

² See <https://www.toronto.ca/city-government/accountability-operations-customer-service/long-term-vision-plans-and-strategies/toronto-strong-neighbourhoods-strategy-2020/>



Fig. 1 The intersection of Bathurst Street and Steeles Avenue in Toronto (image from Google Maps)

This encounter took place next to the intersection of Bathurst and Steeles Streets (see Fig. 1). In this part of the city, both roads are significant arteries, six lanes wide and typically rattling and rumbling with traffic all day long, though less so on the day in question. These are streetscapes whose design is something of a challenge to pedestrians, even more so to cyclists. They are emblematic of urban forms shaped by “automobility”, designed to serve motorised vehicles and thus part of what John Urry referred to as the broader “car system”.³

The area is characteristic in many respects of the city’s inner ring of post-World War II suburbs. There are numerous gas stations, fast-food restaurants, mini-malls, and convenience stores concentrated along the major axes, particularly at intersections such as the Bathurst and Steeles. Many buildings have expansive spatial footprints owing to their ample above-ground parking lots. Yet, while the parking lots are forms of car-centric development to be sure, this is also bus territory. According to census data, just less than 45% of residents in Westminster-Branson rely primarily on public transit, and generally not of the “rapid” kind (though there is an express bus route along Steeles Avenue running east–west). Toronto’s principal north–south metro subway line paralleling Yonge Street terminates 4 km southeast of this intersection and is accessible via a 40–45-min walk or a (hopefully) shorter bus connection.

There are trees, no doubt giving a modicum of shelter from the summer swelter and from Toronto’s persistent and biting winds that whip and swirl viciously around high-rises in winter. But most are still relatively young, dating to the rapid build-out of this area from the 1960s onward. As such, the trees remain minor features in a landscape dominated by boulevards and tall buildings, many of the latter high-rise apartment blocks with huge spatial footprints. Residential towers dwarfing young trees are in fact one of the ways that urban form in neighbourhoods such as this one

³ Urry, J. (2004). The ‘System’ of Automobility. *Theory, Culture & Society*, **21**(4–5), 25–39. <https://doi.org/10.1177/0263276404046059>

contrasts with what one encounters in many of the city's more "leafy" areas. For example, just south of my own neighbourhood, in Bloor West Village, and likewise to the west in Baby Point, there is a preponderance of single-family detached homes with ample yards and gardens located on streets shaded by majestic oaks and mature pines. The difference is not just an aesthetic one. Research in Toronto has indicated that peak summertime temperatures are markedly attenuated in neighbourhoods with extensive mature tree canopies, an important adaptive buffer against the emerging effects of climate change. Not surprisingly, greater tree canopy cover is strongly correlated with levels of neighbourhood affluence.⁴

When first developed near what was then the northern edge of the city, Westminster-Branson had a cutting-edge dimension to it, with dense clusters of high-rise apartment towers constructed in piecemeal and somewhat chaotic fashion (i.e. not as part of an integrated master urban development plan) amidst ravines leading to the nearby Don River. The area offered relatively affordable housing to immigrant families, many of East European and specifically Russian and Jewish heritage.⁵ While it has remained vibrant and lively, Westminster-Branson was also among the 13 "priority neighbourhoods" designated in 2006 by the City of Toronto for additional public investment "...to combat specific problems such as higher-than-average crime or a shortage of services." The more recent NIA designation subsumes and expands the original list using a broader assessment of need in five registers: economic opportunities; social development; participation in decision making; healthy lives; and physical surroundings.

Toronto's NIAs are situated in disparate locations across Toronto, and they differ from one another in important ways. But Westminster-Branson is like many in that it is home to a highly diverse population and is characterized by relatively high levels of neighbourhood deprivation. According to 2016 census data, 70% of Westminster-Branson residents list a first language other than English, with just under 70% of the population being first-generation immigrants. Just under half the population of the census tract is composed of visible minorities or people of colour. Median annual household income in Westminster-Branson was just over \$54,000 in 2016, compared to the city-wide figure of just more than \$65,000. Sixty per cent of households rented in 2016, and over 75% lived in apartment buildings of 5 storeys or more.

My first relief run brought some of these neighbourhood features into view. The building where I met my first disgruntled recipient is a 14-floor apartment tower with a large spatial footprint, including an open-air parking lot wrapped around two sides. I can not really claim to know much about the recipient. She is elderly, she needed food relief, and she struck me as being very sharp witted; I assume she has a wicked sense of humour based on the map comment. Judging by her accent, I am

⁴ See Greene, Christopher S., Pamela J. Robinson, and Andrew A. Millward. "Canopy of Advantage: Who Benefits Most from City Trees?" *Journal of Environmental Management* **208** (February 15, 2018): 24–35. <https://doi.org/10.1016/j.jenvman.2017.12.015>; Graham, Drew A., Jennifer K. Vanos, Natasha A. Kenny, and Robert D. Brown. "The Relationship between Neighbourhood Tree Canopy Cover and Heat-Related Ambulance Calls during Extreme Heat Events in Toronto, Canada." *Urban Forestry & Urban Greening* **20** (December 1, 2016): 180–86. <https://doi.org/10.1016/j.ufug.2016.08.005>.

⁵ <http://towerrenewal.com/bathurst-and-steeles/>

guessing she is Caribbean-Canadian, perhaps first generation. If that is true, then she is somewhat unrepresentative of Westminster-Branson whose immigrant population is more heavily Filipino and East European. But her age, her skin colour, her building, and the urban development styles around Bathurst and Steeles all foreshadowed patterns I would see play out repeatedly in the months to come.

The delivery I made in Westminster-Branson was one of ten I made the first day. It took about 2 h to deliver the other nine. All of the deliveries were broadly along and around the Steeles Avenue corridor running in a westward arc back from the first stop in the direction of Jane Street. Most of the deliveries, though not all, went to residents of high-rise apartment towers, at least one of which was a Toronto Public Housing residence. Two went to residents living in dense clusters of row house dwellings within planned developments that were also TPH projects. One went to a single detached bungalow.

Confronting the nexus of food insecurity and pandemic urbanism in Toronto

In July of 2020, I was sent to a tower apartment building on Maple Leaf Drive, just east of Jane Street (again, to the north of my home). By this time, I had changed my approach when delivering to such residences. Ideally, I would call from a lobby phone so that a recipient could unlock the inner door to their building from within their own unit. Yet often this did not work for one reason or another, and I had to get in by surreptitiously following other people. Inside, I would encounter ubiquitous and disquieting warning signs announcing COVID-19 risks, telling visitors and residents alike to wear masks, to stay home if they felt ill, to keep a minimum distance of 2 m apart from one another, and to cap the occupancy of elevators at two people. Almost without exception the signs were written exclusively in English. Elevator trips were frequently delayed by the capacity restrictions which meant there was usually a queue of restless people waiting in the lobby. When I did take the elevators, there was almost always another person (and sometimes two, despite the signs) in the elevator with me.

The pandemic context made these encounters somewhat unnerving for me, and I assume all the more so for the residents. After all, I was obviously the outsider. Carrying one and sometimes two bags or boxes of food for residents, with a list of delivery names and addresses in my hand, marked me as someone making stops at various locations, including (it would be reasonable for others to assume) other high-density residential buildings. In short, in the midst of an unfolding global pandemic, I was a potentially potent vector of transmission, an agent of what geographer Anna Secor calls “novel proximities” characteristic of urban topological spatialities (see below).⁶

⁶ Secor, A. (2013). 2012 urban geography plenary lecture topological city. *Urban Geography*, 34(4), 430–444. <https://doi.org/10.1080/02723638.2013.778698>

There was more generally, and understandably, a palpable and heavy sense of unease in many of the apartment buildings I visited. People I encountered were mostly silent and avoided eye contact; they seemed nervous. Some did look with interest at my packages of food, particularly at the boxes which carried labels announcing them as food relief, but I had the sense that such deliveries were hardly rare in many of these settings. In fact, I often delivered to more than one resident of a given apartment building on a specific delivery run, as I was doing on this particular day. I also made return trips to many of the same buildings over time, sometimes to deliver to the same units, sometimes to others. I did not meet all the recipients of the deliveries. Some were not at home, or they did not answer their doors or their phones. In such cases, I often left the bags or boxes in hallways outside apartment units, or on the front steps of walk-up buildings, hoping no one else would make off with them. Of the recipients I did meet, a good number were elderly, and the vast majority were people of colour.

Food is, as has often been said, an intimate commodity.⁷ But the intimacy in these instances was awkward and uncomfortable. In the brief moments of direct engagement, with the recipients, I almost invariably experienced something like a sense of transgression, as though I had violated some unspoken norm of social conduct. The food I delivered was commodified, the items in the bags and boxes given to me filled with generic staple products available at any grocery store, concrete manifestations of a food system organized according to the principles of mass production on one hand and the ability to pay on the other hand (rather than, for instance, on the sanctity of the right to food as an aspect of citizenship).⁸ Yet in passing from the organizations through me and to their recipients, these generic items became something also like a gift, carrying with them a (false) familiarity forged from the overt vulnerability of people unable to make the current food system work for them in the absence of asking for help. Invariably the interactions felt (to me at least) awkward, forced, shameful, and suffocated by the utter inadequacy of what I was doing.

In the building on Maple Leaf Drive, I delivered two bags, both to elderly Black women. One of them walked with a cane and movement seemed an effort for her. The other was more nimble but also more wary; she asked me to leave the bag in the hallway outside her door and to step back before she would come out to retrieve it. Her wariness amplified the sense of inner conflict I had experienced on numerous delivery runs. On the one hand, I was the bearer of food relief. On the other hand, I was, as noted, a vector of transmission made potentially more potent by multiple social contacts spread across numerous neighbourhoods, many with people living in densely populated residential towers. I was quite possibly contaminating everyone I encountered, including those with heightened vulnerability due to their advanced age or comorbidities or both.

⁷ Winson. (1993). *The intimate commodity: food and the development of the agro-industrial complex in Canada*. Garamond Press.

⁸ On notions of food security and food citizenship, see Welsh, Jennifer, and Rod MacRae. "Food Citizenship and Community Food Security: Lessons from Toronto, Canada." *Canadian Journal of Development Studies / Revue Canadienne d'études Du Développement* 19, no. 4 (January 1, 1998): 237–55. <https://doi.org/10.1080/02255189.1998.9669786>.

Maple Leaf Drive runs through a neighbourhood called Rustic (also part of North York). Rustic is bounded to the north by the busy provincial #401 freeway running east–west across Toronto, to the south by Lawrence Avenue, and on the west side by Jane Street. Both Lawrence and Jane are busy and wide streets in this part of the city. The neighbourhood is also bisected diagonally by Black Creek Drive, a major corridor linking southwestern Toronto to the #400 and #401 freeways (see Fig. 2 below).

In Rustic, also an NIA, almost half of the population lists a first language other than English and 54% are first-generation immigrants (as of the 2016 census). The largest proportions of the immigrant population are from Central and South America, the Philippines, Somalia, and Jamaica. Median household income in Rustic in 2016 was just under \$45,000 and the poverty rate was 32%. About 62% of Rustic households rented in 2016, with 55% of households living in apartment buildings of 5 or more storeys. Just less than 40% of residents relied on public transit to get to work in 2016.

As I returned to my car in the building's stark, exposed outdoor parking lot, it struck me with particular intensity (perhaps because of the wariness shown by the second recipient) how wide are the gulfs that separate me from most of the people to whom I delivered these bags and boxes. I have no experience with needing emergency food relief. To be sure, I was actually quite poor when I was a graduate student, living below poverty level for several years (which is fairly common among graduate students in North America, more so now than it was even then). Even so, I always had secure access to food and housing. Also, I knew I could draw on help from friends and family if I needed it. I have never known hunger as a direct existential threat. Nor have I experienced what I assume for most of the recipients was at least some degree of humiliation that attends reaching out for food relief, then having it dropped off by someone who is not only unfamiliar, but different in some



Fig. 2 A view of the neighbourhood of Rustic, in Toronto (image from Google Maps)

combination of skin colour, dress, speech, age, and in level of privilege (which, to be clear, is partly defined and sustained in terms of the aforementioned differences).

My own neighbourhood (Runnymede-Bloor West Village) is quite unlike most of those into which I ventured on relief runs. I own my home, a semi-detached dwelling, with a deck in the yard, a garden behind that, and a detached garage beyond. Most of the buildings in my neighbourhood are single-family dwellings, some detached, some semi. I and many of my neighbours can bike to work along relatively safe and quiet streets (at least by Toronto's admittedly abysmal standards). I can walk in less than 15 min from my home to any one of four grocery stores. I have a secure job with a good salary and relatively ample benefits. My neighbourhood is decidedly more middle class, not least due to the effects of intense gentrification during the last 15 years or more; median household income was over \$112,000 in 2016, just less than double the city-wide figure and over twice the corresponding amounts in both Westminister-Branson and Rustic. There is a lower proportion of immigrants (23%) than in either of those two neighbourhoods, and only 21.5% of households rent. The 2016 census suggests that literally no one in the census tract lives in a building of five storeys or more. The population is overwhelmingly white (84% in 2016). I can guess with some certainty that emergency food deliveries are a rarity on my street and those surrounding it.

Uneven Toronto and the COVID pandemic

The contrasts I have noted reflect Toronto's uneven social geography more broadly. An important 2010 report issued by the University of Toronto's City Centre characterized this unevenness as Toronto's "three cities".⁹ According to the report, and as the title suggests, Toronto can be understood not as one but three distinct cities whose fortunes have diverged since the early 1970s. The first city—comprising 19% of Toronto's census tracts and 17% of its 2006 population—witnessed over 20% growth in real per capita income from 1970 through 2005. The second city—comprising 39% of Toronto's census tracts and 38% of its 2006 population—experienced somewhere between 20% growth and 20% decline in real income over the same period (i.e. essentially stagnation). The third city—comprising a further 39% of Toronto's census tracts and 43% of its 2006 population—witnessed a decline in real per capita income of more than 20%. Other contrasts stand out. In the third Toronto, half of residents in 2006 lived in apartment buildings of five stories or more, compared to 30% in the other two of Toronto's cities. In Toronto's third city, 61% of residents in 2006 were immigrants and 66% were visible minorities compared with 28% and 31% respectively in Toronto's first city and second cities. While the report is now somewhat dated, there is no evidence that the trends toward increasing material and racialized polarization and deprivation in Toronto have changed even if there has been some spatial rearrangement.

⁹ Hulchanski, D. J., Bourne, L. S., Egan, R., Fair, M., Maaranen, R., Murdie, R. A., & Walks, A. R. (2011). *The three cities within Toronto: Income polarization among Toronto's neighbourhoods, 1970–2005*. Cities Centre Press, University of Toronto.

How has this kind of underlying unevenness shaped or constituted the pandemic in Toronto? The following table shows summary data for the ratio of cumulative COVID-19 incidence rates by self-reported racialized groups in comparison to the overall incidence rate in Toronto up to the end of September 2021. There are clear differences, notably lower rates among those who identify as white and East Asian populations in relation to other racialized groups (Table 1).

Cumulative incidence rates by income group (as measured by household income) as a ratio of overall incidence rates in the city of Toronto, again up to the end of September 2021, are summarized in the following table for all age groups (Table 2):

The ratio for income groups in relation to overall incidence rates in Toronto for those aged 30–59 years is as below (Table 3):

At the city-wide level, it is clear that cumulative incidence rates have been higher overall among racialized groups and among lower income populations (and, to state the obvious, these are not mutually exclusive categories).¹⁰ For example, among those aged 30–59 living in households whose annual earnings were \$150,000 per year or more, the cumulative incidence rate of COVID-19 in Toronto up to the end of September 2021 was less than half (46%) of the overall rate in the city to that point in time. Looking at the summary data for reported racialized groups, the incidence rate among people who identify as Latin American in origin was more than three times the incidence rate in the population overall.

The data in the tables, however, do not capture the spatial unevenness of cumulative incidence rates across the city. Yet, by the summer of 2020 (if not sooner), it was already apparent that rates of COVID-19 infection and serious illness were distinctly higher in some neighbourhoods than in others. A map of cumulative rates per 100,000 population in Toronto by census districts between January 21, 2020, and February 18, 2022 is shown in Fig. 3.

Census tracts more darkly shaded are those where the cumulative case rates have been higher and conversely more lightly shaded areas are those where cumulative case rates have been lower.

How does this uneven spatial pattern of incidence rates correspond to other forms of socio-spatial unevenness at the neighbourhood scale? Table 4 profiles and compares cumulative case rates in several of the neighbourhoods where I made multiple deliveries between April 2020 and February 2021. The table also includes some socio-economic and demographic indicators for those neighbourhoods as of the 2016 census. The neighbourhoods include Westminster-Branson and Rustic. In addition, I have included Weston, west across Jane street from Rustic and slightly to the south, bounded on its west by the Humber River; Black Creek, located to the north of the intersection of Jane Street and Finch Avenue; Glenfield-Jane Heights, located south of the Jane and Finch intersection; and Flemingdon Park in Toronto's east side. I have also included my own home census tract neighbourhood, Runnymede-Bloor West Village, for comparison.¹¹

¹⁰ Data on cumulative incidence rates by racial and income groups come from <https://www.toronto.ca/home/covid-19/covid-19-pandemic-data/covid-19-ethno-racial-group-income-infection-data/>

¹¹ All data available from <https://www.toronto.ca/city-government/data-research-maps/neighbourhoods-communities/neighbourhood-profiles/>

Table 1 Ratio of COVID-19 infection rate per 100,000 population in racial groups in relation to overall rates through September 2021

Arab, Middle Eastern, or West Asian	2.10
Black	1.66
East Asian	0.45
Latin American	3.05
South Asian or Indo-Caribbean	1.87
Southeast Asian	1.9
White	0.41

Table 2 Ratio of COVID-19 infection rate per 100,000 population of individuals grouped by household income in relation to overall rates through September 2021

\$0–\$29,999	1.54
\$30,000–\$49,999	1.64
\$50,000–\$69,999	1.24
\$70,000–\$99,999	0.88
\$100,000–\$149,999	0.68
\$150,000 or more	0.49

Table 3 Ratio of COVID-19 infection rate per 100,000 population of individuals 30–59 years old grouped by household income in relation to overall rates through September 2021

\$0–\$29,999	1.36
\$30,000–\$49,999	1.94
\$50,000–\$69,999	1.39
\$70,000–\$99,999	0.94
\$100,000–\$149,999	0.67
\$150,000 or more	0.46

Figure 4 situates the census tracts listed in Table 4 within Toronto. In the upper left of the image are the four neighbourhoods in the northwest of the city aligned along Jane Street. Runnymede-Bloor West Village is to the south with Westminster-Branson visible in the north central portion of the city. Flemingdon Park is to the east.

Even if it is quite clear that cumulative incidence rates have varied widely at the neighbourhood scale in Toronto (see Fig. 3), there is not enough data in Table 4 to make rigorous inferences about the coincidence of neighbourhood-level differences in incidence rates on the one hand, and indices of material deprivation, racialization, and urban form on the other. Yet the data are certainly suggestive. Reinforcing these impressions, the City of Toronto includes the following summary language as a note to accompany maps of COVID incidence rates by census tract:

Living and working conditions that put some people at higher risk for COVID-19 include being essential workers who cannot work from home, lack of paid sick days, job insecurity, crowded housing, taking crowded public transportation and barriers to health care and other services. Racialized and immigrant communities are more likely to work in low-wage, front-line and essential work, and many neighbourhoods with high rates of COVID-19 have a high percentage of people at higher risk. Systemic racism and discrimination are important drivers of these inequities. The COVID-19 pandemic has also had

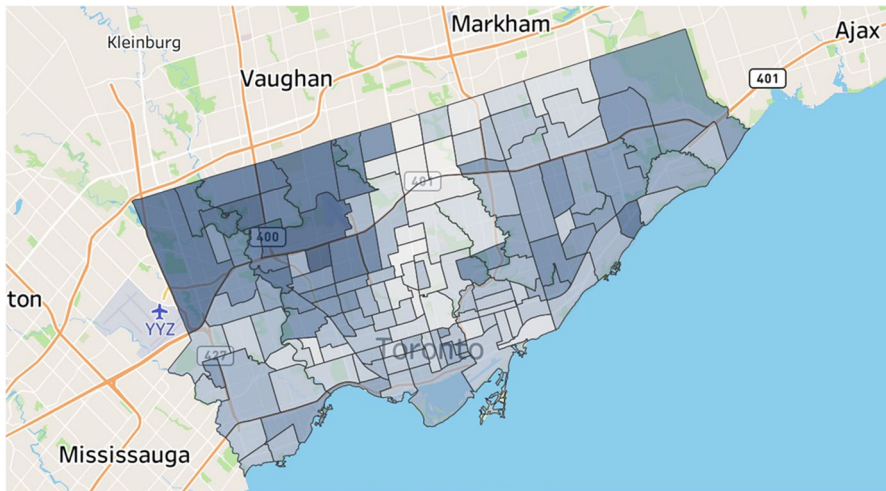


Fig. 3 Cumulative rates of COVID-19 infection by census tract in Toronto, January 21, 2020–February 18, 2022

important negative socio-economic impacts and has led to deeper inequities, challenges and barriers.¹²

Furthermore, analysis completed by the City of Toronto in July of 2020 (admittedly now somewhat dated) strongly points to differentiation at a local scale, with higher rates of COVID-19 infections among people from low-income neighbourhoods and from neighbourhoods that are more racially diverse. Specifically, the census tracts with the highest proportion of people living at or below the low-income threshold had the highest COVID-19 infection rates, while the census tracts with the lowest proportion of residents living at or below the low-income threshold had the lowest infection rates. The authors of the report also noted higher incidence rates in neighbourhoods featuring:

...the highest percent of people from racialized communities, newcomers to Canada, people with lower education levels, unemployed people, and people who live in crowded households compared to the group with the lowest percent of each.¹³

Urban topologies of pandemic risk

The suggestion that health status is significantly determined by social factors is not new, nor is it a novel observation that social determinants of health are spatially uneven. Both are well-established themes in spatially differentiated epidemiological analyses and medical and health geography scholarship. Moreover, it is a logical fallacy to suggest that individual COVID-19 risks (of infection, serious illness, or

¹² <https://www.toronto.ca/home/covid-19/covid-19-pandemic-data/covid-19-neighbourhood-maps-data/>

¹³ This report, from Toronto Public Health, is available at https://www.toronto.ca/wpcontent/uploads/2020/07/956b-SDOHandCOVID19_Summary_2020July1.pdf.

Table 4 Cumulative COVID incidence rates and selected neighbourhood characteristics for chosen census tracts

Census tract	Cumulative case rates per 100,000, January 21, 2020, to February 18 2022	Poverty rate	Per cent identifying as racialized	Per cent living in 5+-storey apartments	Per cent living in unsuitable housing
Westminster-Branson	14,379	27.2	44.9	75.8	17.8
Rustic	10,421	32.4	59.6	54.5	20.5
Weston	16,707	30.7	60.8	57.5	19.3
Black Creek	16,704	33.5	80.9	55.3	26.6
Glenfield-Jane Heights	15,657	27.4	76.6	34	23.1
Flemington Park	13,235	35	79	81.9	28.4
Rummymede-Bloor West Village	5958	8	16	0	2.9

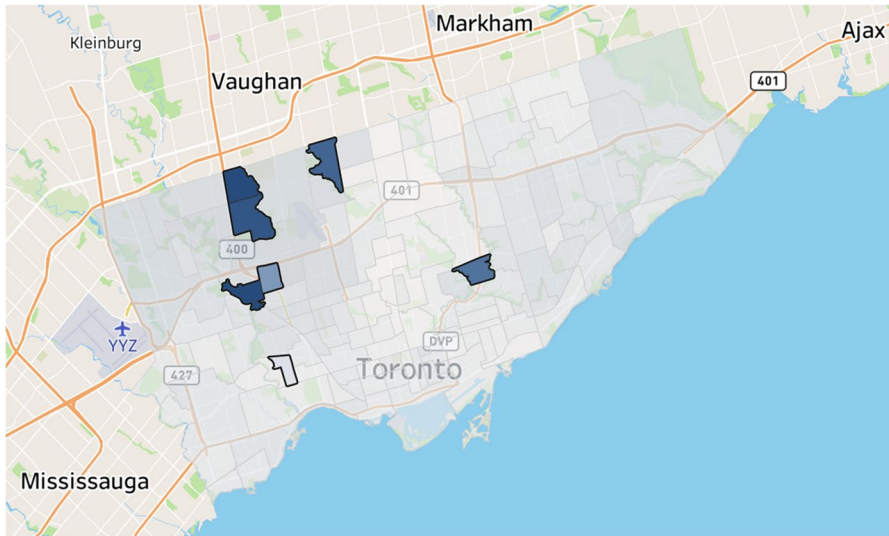


Fig. 4 Map of selected census tracts identified in Table 4

death) are a product of the neighbourhood alone. Yet the novelty of these observations is not really what is at stake, nor are the nuances of what shapes any given individual's risk of infection or worse. Rather, it is the stark underlying spatially differentiated racialized and class inequalities of the pandemic at the neighbourhood scale and the direct and indirect impacts this has had and continues to have for so many people.

Moreover, if the brutal facts of socio-spatial unevenness in urban pandemic risks are not strictly speaking novel, my experiences and observations making emergency food deliveries prompted me to consider how to best conceptualize the spatialities at play. How is an uneven urban landscape of pandemic risk best understood in relation to the combination of urban socio-economic inequalities; neighbourhood-scale differences in urban form and urban capitalist development patterns; and the coronavirus itself? These various factors cannot be readily grasped using a language of dependent and independent variables when it comes to the relationship between an ostensibly separate “society” and “nature”, whichever is assumed to be acting on the other (for one thing, while the origins of the virus itself remain debated, much of the debate surrounds political economic forces—including habitat conversion, the juxtaposition of urbanization and industrial agriculture, and the wildlife trade—that have animated its emergence).¹⁴ Nor is it viable to assert or assume any naïve objectivism in making claims, including an implied or explicit assumption about the independence of subject and object. The very categories of social analysis I have deployed,

¹⁴ For discussion of some of the specific urban political ecologies of COVID-19, see Connolly, C., Ali, S. H., & Keil, R. (2020). On the relationships between COVID-19 and extended urbanization. *Dialogues in Human Geography*, 10(2), 213–216. <https://doi.org/10.1177/2043820620934209> and Gandy, M. The zoonotic city: urban political ecology and the pandemic Imaginary. *International Journal of Urban and Regional Research* (online early version). Accessed March 22, 2022. <https://doi.org/10.1111/1468-2427.13080>. Though not about COVID-19, it is also worth engaging with Davis, Mike. *The Monster at Our Door: The Global Threat of Avian Flu*. New York: New Press, 2005.

whether by race, income, housing status, or other criteria, are non-obvious, subjective, and subject to debate. And to state the obvious, I am clearly not an independent and disinterested observer. I live in Toronto, and in a part of it much unlike most of the places I went to deliver food. That matters. It shaped what I took note of, but also what I did not. It matters in part because some of what has inspired me to write this was a sense of shock in directly confronting some of the brutal injustices prevailing in a city where many, like me, live lives of relative privilege.¹⁵

While it is possible to say that no one contracts COVID-19 without being infected by the virus, the patterns I have described strongly indicate that pandemic risk is socially produced by processes that are spatially uneven, socially unjust, and dynamic. Perhaps, as one of my colleagues suggested in reading an earlier draft of this narrative, conventional accounts and theories of the logic of uneven development, including specifically uneven urban capitalist development, are adequate to explain these dynamics. Certainly, radical geographers have long emphasized, for example, that urban development at various scales of analysis does tend to be both constituted by and productive of profound racialized and classed injustices. However, intimate encounters with the uneven urban landscape of pandemic risk that I experienced as a volunteer suggest that the spatiality of the pandemic itself—in Toronto at least—needs to be conceptualized in terms of an urban *metabolism* through which the virus and socio-spatial unevenness in urban development at the neighbourhood scale co-produce an “urban topology” of pandemic risk.

I use this phrase to capture a way of thinking about the spatiality of an urban and political ecology of pandemic risk in Toronto that emerges from and is co-constituted by the uneven geography of the city as well as by the virus. This unevenness includes racialized contrasts in levels of relative affluence and deprivation (including as indicated by food insecurity itself), but also linguistic and other cultural differences, immigration status, employment, different kinds of built environments, access to green spaces, transportation geographies, and other social infrastructural influences that together help to define and contrast distinct neighbourhoods within this and other cities in a broadly capitalist political economy. These factors help to define neighbourhoods, not only shaping the differentiated experiences of living and working in them, but also moving through them and between them. And in important respects, these forms of socio-spatial unevenness constitute the pandemic—what *it* really is—in ways that defy conventional narratives and accounts of individual risks and exposures, national contrasts in infection rates, and even aggregate portrayals of socially uneven pandemic fortunes (e.g. along race and class lines). To be sure, what Marx termed the “annihilation of space by time” in capitalist modernity, whereby circulation and exchange collapse and redefine distance, and where all that

¹⁵ In writing this, I was inspired to look back at a piece written some time ago by Andrew Sayer which still holds purchase in elaborating rigorously on these and related themes, including, how “we” make observations about society and how it is organized (including spatially), but also how the “relations” between nature and society are understood and the implications of insisting that society is internal to and part of a broader nature. See Sayer, Andrew. “Epistemology and Conceptions of People and Nature in Geography.” *Geoforum* 10, no. 1 (January 1, 1979): 19–44. [https://doi.org/10.1016/0016-7185\(79\)90012-5](https://doi.org/10.1016/0016-7185(79)90012-5).

is constant is change, is at play.¹⁶ Yet so too is the chaotic heterogeneity of urban spatiality itself.¹⁷ The pandemic (and more specifically the virus) is not merely introduced into or overlain with a prior spatial unevenness. Rather, the pandemic emerges from and actively re-articulates this unevenness. The unevenness is both internal to the pandemic and at the same time re-defined by it. The phrase “urban topology” helps encapsulate a relational account of pandemic risk that recognizes it as an ontological coupling of human and more than human agencies (which is not, as I replied to my colleague, a point of emphasis in conventional, more humanistic accounts of spatially uneven capitalist development)¹⁸ within a chaotic and heterogeneous spatiality of unevenness that transcends proximity understood in conventional Cartesian terms.

My most direct inspiration for this line of thinking comes from a 2013 paper by Hinchliffe et al., though the notion of topological spatialities is not theirs.¹⁹ Reflecting on the dynamics of novel animal-borne pathogens in intensive confinement agriculture, the authors of this paper argue that the spaces of pathogenic risk need to be understood as integral to its emergence, and thus for “...an alternative topological ‘mapping’ [as opposed to a topological one]...through which disease is understood as relational; that is, both integral to, and always part of, an entangled interplay of environments, hosts, pathogens and humans.” In their rendering, the distressed animal bodies pressed together by confinement, the specific spaces of enclosure, the various technologies, and practices of managing intensive agricultural systems, along with the pathogens themselves, produce novel spatialities of risk.

I see parallels even as I recognize and insist on the limits of such parallels, notably any casual equivalence between the recipients of food relief (or other residents) in Toronto and livestock. Such an equation would be grotesque, clearly. But analogy is not necessarily so. My forays into various parts of Toronto where food relief is necessary (at least for some residents), and the coincidence in most instances between these neighbourhoods and high rates of localized disease propagation suggest the potential of thinking along broadly similar lines when it comes to the urban spatialities of COVID-19 risk. Clearly, the pandemic operates via a geographical logic such that individual vulnerability to infection and the risk of developing serious symptoms are determined by more than mere linear proximity to other infected bodies or by the physical juxtaposition of relatively “diseased” spaces with relatively “disease-free” ones. To be sure, linear proximity and risk dispersion along a gradient of distance are part of the pandemic’s spatial logic; we do indeed experience greater risk when we are physically close to others who are infected, all other things being equal. Except all other things are profoundly not equal! Moreover, and perhaps more to the point, what processes determine who is placed in proximity to

¹⁶ Marx, K. (1973). *Grundrisse: foundations of the critique of political economy* (rough draft). Penguin Books.

¹⁷ Massey, D. B. (2005). *For space*. SAGE.

¹⁸ Though see Smith, N. (2008). *Uneven development: nature, capital, and the production of space* (Third edition.). University of Georgia Press.

¹⁹ Hinchliffe, Steve; Allen, John; Lavau, Stephanie; Bingham, Nick and Carter, Simon (2013). Biosecurity and the topologies of infected life: from borderlines to borderlands. *Transactions of the Institute of British Geographers*, 38(4) pp. 531–543. <https://doi.org/10.1111/j.1475-5661.2012.00538.x>

whom (work, transportation, housing, etc.)? Geographer Anna Secor refers to what she calls the production of “novel proximities”, as a way of describing and thinking about distance that does not rely on a spatiality of fixed relative locations.²⁰ This suggests that it is important to think about inequality and injustice in relation to a dynamic networked model of spatial integration and dispersal giving rise to clusters or pockets, as well as to the various settings in which these clusters and pockets occur. This way of thinking about pandemic risk as (in part) an endemic property of particular spatialities invites us to consider not only the vulnerability of individual (human) bodies as they are made permeable by viral propagation, but also, as geographer Bruce Braun has phrased it, the ways these vulnerabilities are shaped by the “enfolding” of bodies within and as part of urban spaces, spaces that are themselves inescapably both social and ecological.²¹ Moreover, in thinking about landscapes of risk, as Hinchliffe et al. write “...disease is not...characterized so much by its presence or absence, but by the degree to and manner in which it is expressed.”

An urban topology of pandemic risk along the lines I am suggesting here, inspired by these and other scholars, therefore requires at least two points of emphasis when engaging with the spatiality of COVID-19 in Toronto: (i) relative proximity must be understood in terms of the myriad social and ecological processes that both produce and define it (e.g. work, commuting, travel, schools, health care, family networks, weather, air quality) in individuals and communities rather than as static properties fixed in a grid; and (ii) dynamic notions of place itself must be mobilized as a driver of pandemic risk based on the specific arrangements of (social) humans, non-humans, and their respective ecological imbrications, built environments, urban infrastructures, the broader socio-ecological processes that help to transform these places (including, for example, urban capitalist rent curves, the international flows of immigrants to a country like Canada and a city like Toronto, the urban contours of climate change, etc.), and the virus and its variants.²²

Weston-Pellam Park (the Junction)

In February of 2021, one of the last days on which I volunteered to deliver emergency food relief, I worked for an urban food bank based in the Dufferin-Dupont area of Toronto. It was the only time I volunteered for this organization. In this instance, I was asked to deliver a single package of food. I was instructed to pick up the package at the food bank and then to take it to someone living in an apartment building located on Osler Drive, midway between Dupont Street (to the south) and Davenport Road (to the north). The building is in a census tract called

²⁰ Secor (2012).

²¹ Braun, B. (2009). Thinking the city through SARS: bodies, topologies, politics. In: Ali, S. H., & Keil, R. (Eds) *Networked disease: emerging infections in the global city* (pp. 250–266). Wiley-Blackwell.

²² Obviously, I have said little about the broader political economic and ecological transformations of urban spaces at the neighbourhood scale, nor about the dynamics of viral evolution at various scales. I assert these here in the interests of efficiency and emphasis and accepting that some readers may find this inadequate.

Weston-Pellam, and it would take me about 10 min to bike to it from where I live. I refer to this location as part of the Junction. I mention these colloquial aspects because I thought I knew this area and I thought I knew where I was going, but as it turns out, I did not. Gentrification's progression via capitalist rent gaps has a way of breaking census tracts and neighbourhoods up into contrasting pockets that can lead to startling juxtapositions of privilege and deprivation, ones that may remain obscured by summary data for census tracts, but also unknown even to "local" residents unless circumstance brings them into focus. This delivery gave me a stark demonstration of these dynamics.

I parked my car on a side street near the intersection of Dufferin and Dupont Streets and walked to the food bank. It was a bitterly cold day in Toronto. Looking back at weather records, the high is reported to have been -4 , the low -10 °C. Certainly, the temperature was closer to the latter when I got out of my car, the cold compounded by a harsh wind. Even so, there was a long line of people stretching around the corner from the food bank and half-way along the adjoining block, waiting to pick up food. Numerous volunteers combed the line, checking in with those of us in it, determining among other things, whether we were volunteers or direct food relief recipients. When I got to the front of the line, there were more volunteers, including outside at a table, helping to assemble food packages, and checking off names on lists. A young woman chatted with me in a friendly, casual way as she prepared my delivery before handing it to me. I walked away marveling at her good cheer and wondering how long she would be out there; I wanted nothing more than to get back in the car.

Once in it, I called the recipient and told her I would be at her building shortly. I asked if she could let me in. None of what she said in response was understandable to me. I tried asking again, with the same result and so simply told her I was on my way. I drove to her building and parked outside. Along the way, as I crossed the railroad tracks (cliché yes, but there it is) on Osler Drive, the neighbourhood changed suddenly. I have a good friend and colleague who lives on the south end of that block amidst now-trendy restaurants and cafes. I have been to his house many times. I ride my bike along Dupont Street on my way to campus several times per week. But literally a matter of steps further north up the street was a very different and unfamiliar (to me) setting, with early and mid-twentieth century semi-detached and row houses left largely untouched by the gentrification that has transformed the south end of the block. The apartment tower I was sent to is visible from a distance as it rises above the surrounding houses and a small park on the north side of the tracks, set back from the street, and accessible via a private lane.

The buzzer used to call residents from outside did not work. I called the recipient again on my phone to tell her I was there, and to ask again if she could let me in. She became very agitated, yelling into the phone at me, and though I still could not understand her, it was clear she would not come down. Instead, I waited until someone else came out, and I went in. Inside, I encountered by far the most decrepit, dirty, and seemingly dysfunctional building I visited on any delivery run. The halls were lined with refuse. There was a powerful smell, stale, dank, and unpleasant. I walked up three flights of stairs and found the apartment in question. I knocked

on the door. An elderly woman not wearing a mask opened the door just enough to speak with me through the opening, and for me to hand her the food. I could see behind her a jumbled mess strewn about the apartment: broken furniture, torn fabrics, other materials, and food waste. The smell from the unit was worse than the one in the hall. She looked to be in very poor health. After taking the food, she spoke again. She seemed confused, agitated, and perhaps even afraid of me. I wished her a good day and left.

Walking back to my car, I experienced something I can only describe as disbelief, however naïve that may seem. It was a shock to confront the immediate, brutal reality that people in an affluent nation and city live like this, and that they do so in such close proximity to my neighbourhood (measured in Cartesian terms). How I felt and the fact that I live nearby are unto themselves irrelevant except in as much as they highlight the degree to which topological spatialities of racialized material deprivations are in part defined, reflected, and reinforced by contrasting urban forms and infrastructural differences at a highly localized scale, in effect fracturing the city. These inequalities and injustices have been re-articulated in the production of an uneven urban socio-spatial landscape of pandemic risk in Toronto. Knowing these things as abstractions is one thing. Emergency food deliveries in the context of the COVID-19 pandemic, however, disrupted a spatiality of daily life that is for me (and clearly, I am not alone) defined by pockets of privilege. The disruption brought home an immediate, concrete realization that what clearly has been and remains a global pandemic is also profoundly and definitively a neighbourhood-scale phenomenon.

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