#Map

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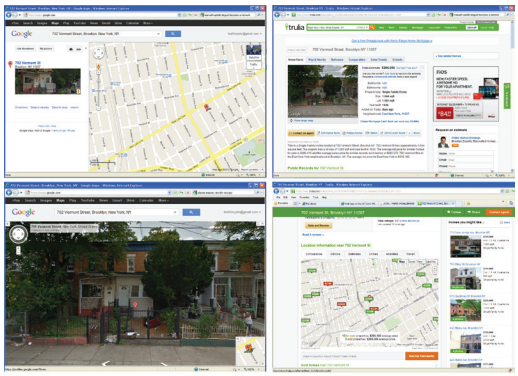
The house at 702 Vermont Street in Brooklyn doesn't stand out. It's one in a series of two-story brick houses that extends the length of its block in East New York. Like many of its neighbors, the house has a narrow, fenced front yard leading to a few stairs and a porch that has been enclosed and incorporated into the house. Trees partially screen its tan vinyl siding and blue cornice. After picking up the kids at Public School 213, you might drive right past it without noticing as you pulled up to the light at New Lots Avenue.

Open Trulia or another real estate app on your phone, though, and you'll learn a lot about the house, including the fact that while the current owner bought it in 2007 for $424,500 and the house is taxed based on an assessed value of $384,000, its estimated market price is $286,000. There's a good chance this house is underwater, mortgaged at a value that far exceeds its market value. Indeed, plug in the address at NYC CityMap, the GIS-based portal for municipal information and public records, and you'll see that when the current owner bought the house five years ago, Mortgage Electronic Registration Systems Inc. (MERS) recorded a primary mortgage of $339,600 and a secondary loan of $84,900. A year and a half later, the company assigned one of the mortgages to Countrywide Home Loans. This past June, it assigned another to Bank of America.

Having financed the full purchase price for this now devalued house, the owner is probably underwater by nearly $140,000. Having obtained no-down payment financing in this majority-minority neighborhood, the owner is also at high risk for foreclosure. The website RealtyTrac confirms that the owner of 702 Vermont entered pre-foreclosure on October 5, 2011, joining dozens of other properties in various states of foreclosure just in the immediate neighborhood.

Keep exploring Trulia or RealtyTrac and you'll have access to deep data not only on 702 Vermont Street but also on all of Brooklyn and many other locations as well. Spend time with CityMap and you'll work up a detailed profile not only of this house and its occupants but also of the entire city. Augmenting these data sets are others that allow you to map many other



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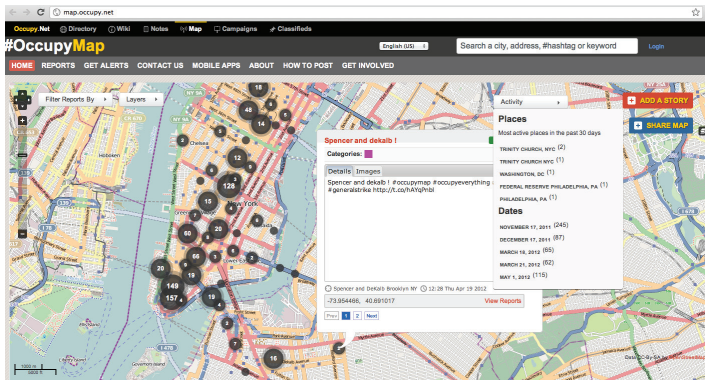

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demographic and financial data, including lending and foreclosure histories (Ritholtz 2010).

Through GIS-enabled commercial services such as Trulia, Zillow, and their rivals, geospatial information has become an integral medium for real estate development and capital investment in the built environment. Through satellite imaging, e-mail filtering, and other forms of data mining, federal, state, and municipal governments have used place-based information to govern at levels that range from waging war, to staffing schools, to removing abandoned bikes.

The data mining and dataveillance enabled by these geospatial information systems support forms of governmentality (Dean 2010) anticipated by Gilles Deleuze in his lyrical description of the control society (Deleuze 1992). But while much of the big story of urban coding lies in these macroscale datascapes, there is a counterpoint of activist tactics for intervening in data-mediated urbanization and social control.

Consider 702 Vermont Street. There's little in Trulia or CityMap to call your attention to this particular property. But look for Brooklyn on the #OccupyMap, an online crowdmap affiliated with the Occupy movement, and you'll find it fast. 702 Vermont lies in a big circle on this map, because it's a hot spot in Occupy Our Homes and other forms of populist resistance to the foreclosure system operated by big banks and MERS. Click on the circle and you'll find a series of reports generated over a couple of days last December as activists used Twitter and spin-off apps such as TwitPic, TwitVid, and Telly to geotag ideas, information, photos, and videos relating to a march and rally protesting bank foreclosure on this property and others in the neighborhood. You'll see photos that tag vacant foreclosed houses as potential sites for occupation, pictures of crowds marching, quotes from the rally, video of speakers, and footage of the march culminating at 702 Vermont. You'll join OWS tweeter DiceyTroop and others as they walk into the house to which a counterpublic has laid claim with a candle to symbolically warm it for the threatened family. You'll see the 99% bat-signal projected on vinyl siding, followed by the link to a livestream that broadcast a subsequent confrontation between occupiers and the police. "Our homes are under attack, we've come to take them back," the crowd chants, under a colorful canopy of umbrellas and balloons.

Figure 1: 702 Vermont Street as seen from Google map view, street view, and Trulia.

Figure 2: #OccupyMap allows users to contribute a wide variety of data.

HYPERCITY

It would be naive to think that we could account for the architecture of 702 Vermont Street without factoring in the ways that it is conditioned by the data networks that encompass it, and something similar is true of the city that encompasses the house and its occupants. By georeferencing discussions and information streams generated in Twitter and other social media, the #OccupyMap creates a counterpublic (Warner 2002) operating in a vast hypercity.

The result is a new ecosystem created by a continuous feedback loop between physical places and online spaces. Built of granite and asphalt but also algorithms and information, this multiply mediated urban realm encompassed Zuccotti Park and other key sites of Occupy activity but also the many dispersed locations indexed by the map as well as the network of online venues supporting discourse, dialogue, representation, and interaction among occupiers and other interested parties (Massey and Snyder 2012). Beyond simply orienting a user, the #OccupyMap and other crowdmaps like it engage viewers as active participants, agents in a collaborative construction of place and space.

A little-noticed dimension of the Occupy movement was its creation of distinctive counterpublics through the interplay between interactions online and in city streets. Extrapolating from the work of anthropologist Jeffrey S. Juris, we can recognize in Occupy a pattern of aggregation similar to that of a flash mob, in which previously unconnected individuals come together quickly based on instant messaging and similar real-time communications (Juris 2012). Social media engaged many thousands of people who had no preexisting connection to social change organizations and activist networks. These virtual spaces, even more than city parks, became points of encounter where previously unrelated individuals aggregated to form popular assemblies.

Focusing on Occupy Boston, Juris suggests that while the alter-globalization protests of the 1990s drew on preexisting networks of people to create "temporary performative terrains along which networks made themselves and their struggles visible," the Occupy movement combined these network logics with a new set of aggregation logics. "Rather than providing spaces for particular networks to coordinate actions and physically represent themselves," he writes, "the smart mob protests facilitated by social media such as Facebook and Twitter make visible crowds of individuals aggregated within concrete locales" (Juris 2012, 260-61).

Similar aggregation logics operated in other online venues, including the 99 Percent Project, a Tumblr blog that allowed people to post photos and signs about the impact of debt in their lives. Political scientist Stephania Milan has characterized Occupy protests as "cloud protesting," comparing the movement to "a cloud where a set of 'soft resources' coexist: identities, narratives, and know-how, which facilitate mobilization," much as social media hosted via cloud computing gives individuals the tools for "producing, selecting, punctuating, and diffusing material like tweets, posts and videos" (Milan 2012).

CROWDMAPS

Though Milan and Juris don't address them, we could add crowdmaps to the list of cloud tools that activated aggregation logics in the Occupy movement. Online maps populated by user-generated content were published at key Occupy-related websites, including Take the Square, US Day of Rage, OccupyWallSt.org, and Occupy.net. Most used Ushahidi, free open-source crowdmapping software developed in 2008 in Kenya to support disaster relief and response efforts. By compiling data into a common geospatial framework, these crowdmaps visualized Occupy participants and camps as discrete elements that aggregated to form a global phenomenon. They associated people, texts, images, and videos with particular places, constructing hypergeographies of action and potential. Animated time line features encouraged users to visualize themselves and local events as part of a process of "#globalchange."

The most robust of these crowdmaps was the #OccupyMap, hosted at Occupy.net and built by the Tech Ops working group of the New York City General Assembly, the ad hoc polity established by OWS in lower Manhattan. As we have seen, the #OccupyMap provided a web interface for reporting events such as marches, rallies, and police interventions, with easy media embedding and compatibility with the Ushahidi app on iOS and Android mobile devices. It also populated automatically from Twitter: any tweet from a location-enabled device that included the hashtag #occupymap generated a geotagged report that could incorporate photos and videos via the Twitpic and Twitvid apps.

By spring 2012, the map had aggregated some 900 entries from New York City into a database that could be sorted geographically, temporally, by medium, and by event type—all viewable via map, time line, and photo interfaces. By pulling together disparate events and data across space and time, the #OccupyMap created a counterpublic integrated through its use of online media to contest state and corporate control of urban places—and of the advantages of power and value that accrue to corporate and state data aggregators.

This and other Occupy crowdmaps were most compelling rhetorically at larger scales. Viewed at national scale, the red placemarker icons on the user map at OccupyWallSt.org suggested a crowd of hot air balloons that had landed—or were preparing to take off—all across the country. In places they clustered so tightly as to create red contours marking an otherwise invisible topography of radicalism. Zoom in, though, and you found a set of landscapes distinct from those visible in city streets. In counterpoint to the intense attention paid to Liberty Plaza, these virtual geographies redefined the public of Occupy Wall Street as a dispersed set of agents linked more by online communication channels than by proximity.

OPEN-SOURCE URBANISM

The #OccupyMap shows that crowdmaps had a more than rhetorical power, though. Tracing the recent microhistory of 702 Vermont Street shows how Ushahidi allowed occupiers to recode the city. Crisis-mapping expert and

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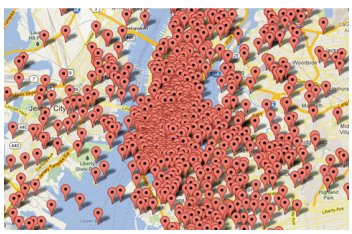

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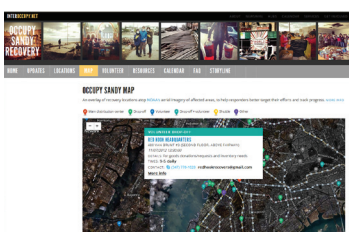

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Figure 3: Occupy Wall Street user-generated "attendee" map.

Figure 4: @OccupyPOPS, "Twitter bot" that coordinates weekly mini-occupy movements.

Figure 5: Occupy Sandy user-generated maps.

former Ushahidi staffer Patrick Meier suggests that live crowdmapping affords publics a tool for georeferenced "sousveillance," a form of inverse surveillance or dataveillance in which mobile technologies allow individuals and subaltern groups to generate their own data sets and transcripts (Meier 2011). Dispersed technologies and bricolaged constellations of open-source software enable alternatives to GIS: ad hoc and off-the-shelf or jury-rigged mapping and geocoding practices that Andrew Turner calls "neogeography" (Turner 2000).

While online activists relied on corporate media such as Facebook and Twitter to reach a broad public, many made a point of using open-source software, sources, and methods such as wikicoding. Occupy websites became spaces for the elaboration of what Christopher Kelty calls a recursive public, "a public that is vitally concerned with the material and practical maintenance and modification of the technical, legal, practical, and conceptual means of its own existence" (Kelty 2008). In the physical realm, Liberty Plaza and other occupied spaces functioned as offline analogues of a wiki. Participants without much prior affiliation built new worlds and organized themselves to maintain them while avoiding hierarchy and formalization whenever they could. At these "wikicamps," open-source urbanism operated at a scale simultaneously local and global (Castells 2011). Through their distinctive collocations of physical place and virtual space, Occupy camps and hot spots such as 702 Vermont became part of what Saskia Sassen terms "translocal geographies" of trade and politics (Sassen 2012). The New York camp was built with knowledge, ideas, and resources from Spain and Argentina, from Chiapas and Cairo, as well as from local coalitions.

FUTURE CITIES?

Since the clearance of Zuccotti Park and most other Occupy wikicamps across the United States, activists have continued to explore the ways that digital media can reshape our public spaces and public spheres. One example is a course project at the New School that emerged from a multiday, multicity "hackathon" sponsored by the working group Occupy Research. @OccupyPOPS is a script that cross-references check-ins on social media sites Foursquare and Twitter with the New York City government database of privately owned public spaces and then automatically tweets a call to temporarily occupy a particular POPS at a specific date and time (de Klerk 2012). Created by Christo de Klerk, @OccupyPOPS mobilizes virtual spaces, physical places, and social networks to reshape urban public space and the regulations that govern it. The intention of the project was as much to call attention to the Occupy movement as it was to heighten awareness of underutilized privately owned public spaces. Other New York–based projects addressing the issues foregrounded by Occupy include #whOWNSpace (http://whownspace.blogspot.com) and the Public School (http://thepublicschool.org/nyc), as well as preexisting initiatives such as Not an Alternative (http://notanalternative.com/). Projects such as these test the capacity of geotagged social media, deep maps, and crowd mobilization to change the ways we see, appropriate, and inhabit our cities.

Crowdmaps such as the #OccupyMap conjure emergent "cloudy" publics aggregated through social media across new geographies and modalities of space. They also recode the time of urbanism. It's easy to romanticize the flash mob, but the real- and near-real-time interactions sustained by text alerts, Twitter, crowdmaps, and the like support rapid interaction among geographically dispersed participants.

Occupy activists mobilized this capacity in a new direction following Sandy, the "superstorm" that hit the Caribbean and the mid-Atlantic and northeastern United States in October. By creating the crowdsourced Occupy Sandy Map of the New York City metropolitan area and a site dedicated to Occupy Sandy Wayfinding in the Rockaways, occupiers suggested that crowdmaps might continue to build translocal coalitions like those that sustained their wikicamps a year earlier. Complementing the disaster management activities of the Federal Emergency Management Agency, these efforts suggest that urban coding could promote an expanding range of translocal counterpublics and civil societies.

One promise of crowdmaps and other online media is to help individuals and collectives build civil societies beneath and beyond the nation-state. If translocal connections such as those that distinguished the Occupy movement thicken and expand, they have the potential to open up territories of action and belonging distinct from those that currently frame civic participation. As the relationships between physical and virtual, urban and online, public and private evolve, we may find new potentials for citizenship and ownership alike. The feasibility and character of these media will depend not only on the size and scope of their data sets but also on the particular relationships they enable between data clouds and the cloudy territories of individual subjectivity and everyday life.

Finally, the time logs and ongoing evolution of #OccupyMap and its successors are likely to promote distinctive ways of seeing and practicing history. Occupiers #JEZ3PREZ and ATCHU recently called on their fellow occupiers to resist consolidating their records into an archive, on the grounds that "to create an OWS archive risks perpetuating the archival practice of fabricating history from a hegemonic perspective" (#JEZ3PREZ and ATCHU 2012). They called instead for an "anarchive" based on a potlatch and anarchist ethos: a dispersed set of objects and records sustaining "open space in which history is allowed to take place." Might the #OccupyMap be one such realm? ◆

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