Commonplace

In the open: TXTmob and Twitter

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In The Open

In this series, we explore how open-source thinking, design, and infrastructure have shaped or catalyzed products that are ubiquitous today. For our first case study, we will look into the collaborative roots of Twitter in the open source code of TXTmob. We foreground this retrospective glance with an original account of its creation by TXTmob founder Tad Hirsch and an excerpt from Sasha Costanza-Chock's Design Justice *(The MIT Press, 2020), which you can purchase here, or read the OA edition here.*

From the Street to Silicon Valley: A few reflections on TXTmob and Twitter

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Thanks to Sasha for highlighting this history and to Quincy and the Knowledge Futures Group for inviting me to participate in this discussion. I thought it might be helpful to provide a little background on TXTmob's design and use, and on the ways that it differed from what eventually became Twitter.[1]

TXTmob was an activist project conceived in the summer of 2004 to support street protests during the U.S. presidential nominating conventions. I initially developed the project with the Bl(a)ck Tea Society, an ad-hoc group of activists that organized demonstrations at the July 2004 Democratic National Convention (DNC) in Boston. At the time, activists were increasingly concerned with the advent of so-called "Miami Model" policing, which involved militarizing large areas around potential protest sites to dissuade mass expressions of public dissent. In response to aggressive police tactics, organizers developed a new model of distributed protest. Rather than target a convention center or other symbolically significant site with a large demonstration, organizers called for loosely coordinated actions to take place all over the city. Realizing this vision required lots of people sharing real-time information as they moved around the city. As Sasha notes, this was no mean feat in the days before smartphones. TXTmob was designed to address this need by enabling users to quickly, easily, and anonymously share text messages with each other.

Several hundred people used TXTmob during the DNC. Afterwards, I worked with the a31 Coalition, the New York Comms Collective, and other organizers planning protests during the Republican National Convention in New York. We reviewed the DNC protests, which lead to several software changes including improvements to account creation and signup. That August, several thousand people used TXTmob during the RNC to organize actions, report on police and delegate movements, and express solidarity with demonstrators. TXTmob continued to be developed and used by activists around the world for several years. It also gained a broader audience of non-activist users in the United States.

Although I wrote the software and led TXTmob's development, I don' t claim exclusive authorship over its design. TXTmob grew out of collective efforts of the activists who conceived, supported, and used it. It embodied activist priorities, and as such, differed substantially from what ultimately became Twitter.

TXTmob delivered messages by exploiting little-known SMTP to SMS (email-to-text message) gateways. Using these gateways eschewed mobile phone service providers' preferred methods for bulk messaging and thus avoided partnerships or contracts with telecommunications companies or third-party vendors. This "clunky hack" allowed the service to send thousands of messages for free and without explicit cooperation from service providers — important considerations for an activist service that would likely be used to support civil disobedience, unpermitted demonstrations, and direct action.

As Sasha observes, relying on SMTP-to-SMS gateways limited TXTmob's messaging capacity. As such, Twitter designers rejected this approach in favor of direct engagement with service providers — a necessary condition for the massive scale that Twitter would ultimately achieve. Of course, TXTmob was never intended to grow in this manner. While Twitter is centrally concerned with expanding its user base and consolidating activity on its platform, the goal in developing TXTmob was to provide software and occasional technical expertise that allowed activists to manage independent campaigns. Several months after the RNC, I released the TXTmob source code under an open source license to enable other activist organizations to host their own TXTmob-like services without my approval or involvement. As it happened, publishing the software in this manner also enabled Odeo engineers to review the code while developing Twitter.

TXTmob and Twitter also took very different approaches to privacy. Twitter is in the business of collecting, analyzing, and extracting value from data about its users. In contrast, TXTmob placed a premium on protecting activists from police surveillance

and retaliation. TXTmob collected very limited user data, left control over personal information in users' hands, and separated message archives from users' data to obscure which individuals sent or received particular messages. It turned out that these were not idle concerns as I was eventually subpoenaed by the City of New York to supply records pertaining to 2004 RNC protests. Happily, much of the requested data did not exist and in any case I successfully fought the subpoena with the help of pro-bono lawyers.

Comparing TXTmob and Twitter highlights the contingent nature of technology production and emphasizes the role that social context plays in shaping design potential. As TXTmob morphed into Twitter, the site of production shifted from activist collectives to a startup technology company. Now, this move from the street to Silicon Valley was probably necessary to create the global-scale financial behemoth that Twitter has become. But it also imposed a new set of restrictions on what forms the technology might take. Simply put, there are limits to what profit-seeking organizations can and cannot do. Generally speaking, they are required to act in ways that maximize profit, promote growth, and centralize control — which can lead to designs that sacrifice individual autonomy and public good for economic gain.

The broader point is that technologies — and, indeed, all products — embody the needs, values and aspirations of designers and of the social context in which they operate. This is why it's important to recognize that the ways media platforms are currently configured are neither inevitable nor invariable. Those of us who do not feel well-served by the current crop of media services may be heartened by a reminder that such systems can and indeed have been organized quite differently. It is perhaps just as important for designers to recognize that the market is not the sole site of technical innovation. Those of us who find our desires and values incompatible with market logics can and should situate our activities elsewhere.

Design Narratives: From TXTMob to Twitter

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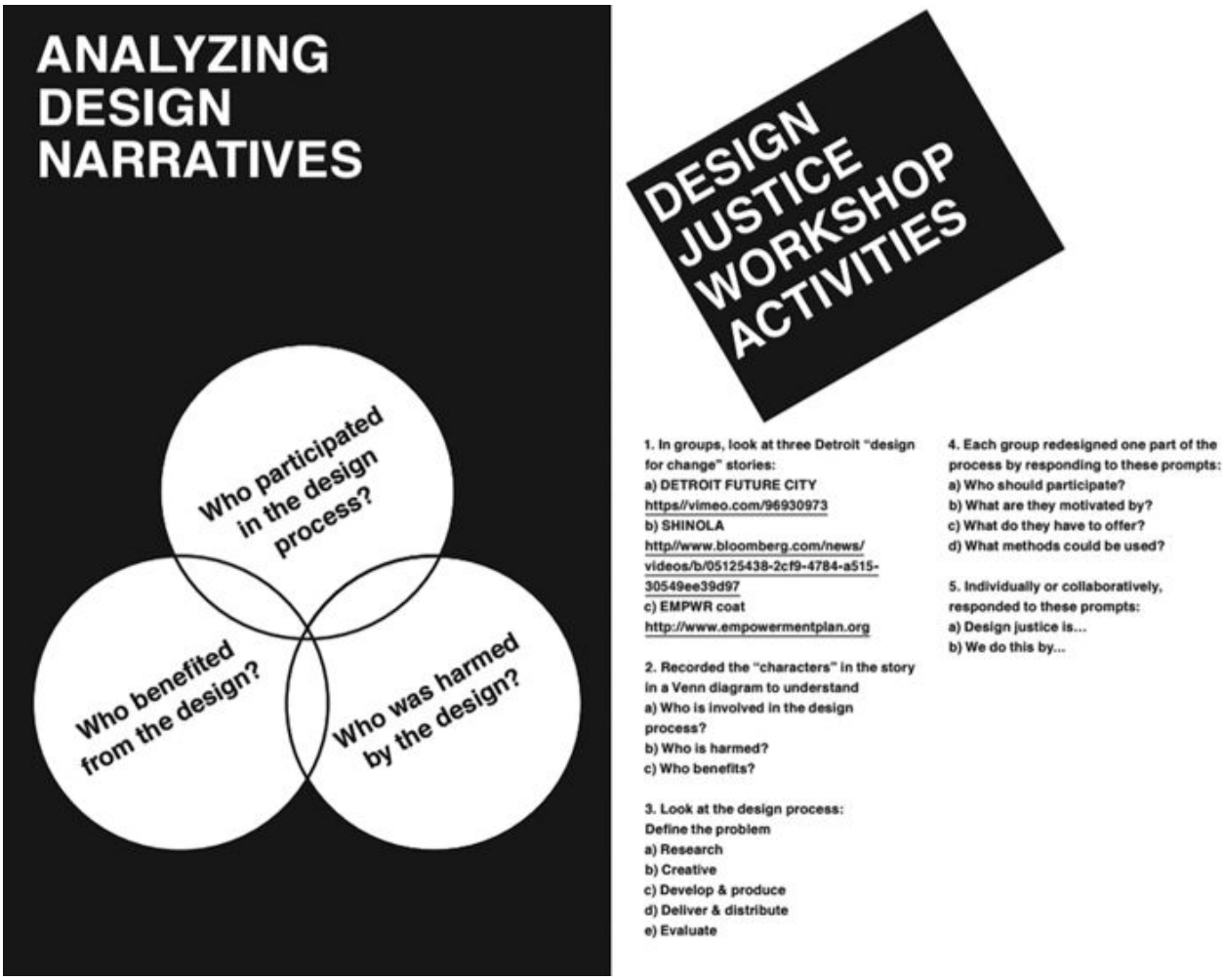

Figure 3.1 "Analyzing Design Narratives," from *Design Justice Zine*, no. 1: Principles for Design Justice (ed. Una Lee, Nontsikelelo Muttti, Carlos Garcia, and Wes Taylor). Designed by Nontisikelelo Mutiti and Alexander Chamorro. Available at http://designjustice network.org/zine.

> Designing is not a solitary activity. It is a part of a larger social community of discourse.
>
> —Drew Margolin

> People are aware that they cannot continue in the same old way, but are immobilized because they cannot imagine an alternative. We need a vision that recognizes that we are at one of the great turning points in human history when the survival of our planet and the restoration of our humanity require a great sea change in our ecological, economic, political, and spiritual values.

> —Grace Lee Boggs

It is Sunday, August 29, 2004, and I'm marching in midtown Manhattan with a crowd of more than half a million people during protests outside the Republican National Convention. Most are there to voice opposition to the US war in Iraq, at a rally organized by the antiwar coalition United for Peace and Justice. The invasion of Iraq and Afghanistan, and the so-called war on terror, launched by George W. Bush in 2003 based on what would ultimately be shown to be false information about chemical weapons,[2] would drag on to become the longest armed conflict in US history. The war cost at least 5.6 trillion dollars,[3] with estimates of between one hundred thousand and one million casualties to violent death, the vast majority of them civilian.[4] At this moment, the Iraq War is still less than two years old.

Today's mobilization is part of a growing cycle of struggles.[5] On February 15, 2003, global civil society and social movement networks organized the largest simultaneous day of protest in human history.[6] We were able to coordinate this action partly through the use of networked information and communication technologies (ICTs; at the time, mostly email lists, Internet Relay Chat, and Indymedia open publishing sites), combined with the strong personal and organizational social movement networks that we developed over two decades in the global justice movement. The February 15 date was cosigned by thousands of organizations from around the world, during the World Social Forum that took place the previous January in Porto Alegre, Brazil. Although we failed to stop the war before it began, in the early days of 2004 it still seemed possible to many of us that the US presidential election might be an opportunity to quickly end the war.

The massive march has been entirely peaceful, but there is a tense atmosphere because our path is controlled by hundreds of police officers at multiple intersections. I am marching with my sister and parents. We reach a spot where the crowd has come to a standstill. Police with batons block our way. Suddenly, a surge of bodies pushes us backward as a line of officers mounted on horseback rides single-file through the crowd; everyone scrambles to get out of the way. A few feet from us, one of the mounted police suddenly rears his horse up onto its hind legs; hooves fly through the air, dangerously close to an elderly woman who cries out and ducks for cover. My sister, Larissa, grabs onto my arm, and one of us says something like "What the fuck?!"

We back away quickly and try to make our way to a less chaotic part of the mobilization.

Police have already arrested hundreds of protesters during the previous two days; on Thursday, twelve ACT UP! activists were arrested for a naked protest against Bush's regressive global AIDS policies. On Friday, 264 people were arrested during a huge Critical Mass bicycle ride of five to six thousand riders.[7] Overall, during the course of the convention and the protests, more than 1,800 people, including protesters, bystanders, legal observers, and journalists, will be arrested, fingerprinted, and held in makeshift pens in a toxic former bus depot. The vast majority (more than 90 percent) will face charges that will be dropped or thrown out of court, and ultimately (ten years later, in 2014), New York City will settle a class-action suit by the ACLU for nearly $18 million—the largest protest settlement in US history.[8]

After another hour or so, I say goodbye to my family and make my way to the makeshift, semiclandestine Independent Media Center (IMC, or Indymedia) that has been set up to cover the protest. The IMC is a hub of frantic activity. In one corner, a young woman imports footage of police violence from at least three different kinds of handheld video cameras (mini DV tape, hard disk drive, and VHS-C) into the editing software Final Cut Pro. Some of this footage will be uploaded quickly to Indymedia (YouTube does not yet exist); some will be used later by legal support teams to ensure that most of the arrests are thrown out of court (and still later as evidence in the class action suit); some will be used to produce documentary films about the event, such as *We Are Many*.[9] In a side room, a small team works to produce audio for a podcast and to send clips to various radio stations affiliated with the listener-supported Pacifica radio network. My task is to gather and confirm reports of various actions, arrests, and incidents of police brutality that are coming in from across the city via phone calls, emails, text messages, and uploads to the Indymedia open publishing newswire.

As I do this, to remain in close coordination with other media activists around the city and around the world, I'm logged in to the Indymedia Internet Relay Chat (IRC) server and participating in several relevant channels. IRC channels are dedicated, persistent, chat-based conversations, marked by the pound sign—for example, #RNCarrests for conversations about arrests at the Republican National Convention. The # (pound sign or hash) marker for conversations on activist chat servers would later make its way into much broader use in the now-ubiquitous social media feature we know as *hashtags*.[10] It should not be surprising that the ability to create ad hoc groups, or ongoing conversations, instantly with the pound sign was pioneered by hackers and

activists, and yet today this is not widely known. On IRC, I receive a message from a friend who uses my handle, @schock, to notify me; using the @ (at) sign to notify a particular user in a channel that you have sent them a message is another feature that was imported from IRC into many social media platforms today. He wants to know whether I have successfully signed up for TXTMob.

TXTMob is an experimental group short message service (SMS) application that was developed by design professor Tad Hirsch, who at the time was a graduate student at the MIT Media Lab.[11] At the RNC in New York, hundreds of people, most of them seasoned activists, used TXTmob to coordinate, share verified information about actions in the streets, and keep abreast of police activity. Although it was designed to work via SMS and therefore could be used on nearly any mobile phone (remember that almost no one had a smartphone in 2004), it was not widely adopted beyond activist circles. It was a student project, with poorly written code, and it used a clunky hack to send SMS for free: it took advantage of the email-to-SMS gateways that nearly all mobile operators made available at the time. Indeed, if hundreds of thousands of protesters had all signed up for TXTMob, the tool quickly would have been blocked by mobile service providers once they noticed the volume of messages being sent without payment. In any case, TXTmob mostly worked. It provided a useful information sharing service to its small group of highly connected activist users. It helped increase the circulation speed of verified information, helped direct action affinity groups make tactical decisions about which street corners to blockade, and helped confirm key developments and dispel some of the false rumors that tend to spread like wildfire during mass protests.[12]

After the RNC was over, Tad Hirsch met with Gaba Rodriguez, Rabble, Blaine Cook, and other activist developers at the Ruckus Society SMS Summit in Oakland to talk about the state of SMS tools for activism, including what had worked well at the RNC and what needed improvement.[13] For their day jobs, Gaba, Rabble, and Blaine worked at Odeo, a podcasting startup that was rapidly running out of seed money. Although the company had a decent product, there were not enough people creating or listening to podcasts at the time to create a sustainable business model. The death blow came when Apple announced that iTunes would soon launch a podcasting product. With only enough seed money to pay for a few more months of payroll, the Odeo employees decided to mostly abandon work on their main product and switch over to hacking on other potentially interesting projects that might be able to attract new investors or spin off into their own companies. To kick off this process, Odeo held a demo day

during which various teams put together project ideas, presented them, and then decided what to work on for their remaining salaried time.

One team, led by the hacker-activists who had been part of the RNC protests, presented TXTmob. They talked about the tool in the context of the protests: what had worked well, what failed, and what features of the tool might be compelling for a broader set of possible users. For example, account creation and group signup were both very clunky in TXTmob, so those would have to be improved. The method of sending SMS via telecommunications company (telco) gateways wouldn't scale beyond a few hundred or a few thousand people, so that would have to change as well. However, the team argued, there was a lot of potential in a group SMS application focused on providing real-time updates. Others at Odeo agreed. Over the next few weeks, TWTTR (Twitter's original name) was born, and as they say, "the rest is history."[14] In the context of design justice, however, we must ask: *Whose version* of history?

The story that I have just narrated about the origins of Twitter is not widely known. Instead, as Hirsch writes: "Nick Bilton's October 13 New York Times Magazine story, 'All's Fair in Love and Twitter,' describes the heady, early days of Twitter. The article begins with [Twitter cofounder] Jack Dorsey sitting atop a slide in a 'rinky dink' Silicon Valley playground sometime in 2006, expounding his vision of a microblogging platform to a handful of Silicon Valley techies and entrepreneurs who would go on to create one of the most popular web services in the world. … It's a compelling story. Unfortunately, it isn't true."[15] Hirsch, who is now the chair of Art and Design at Northeastern University, is not interested in claiming that he is the "actual" inventor of Twitter. Instead, in a clear and compelling article that is worth quoting at length, he describes his interest in setting the record straight:

> To be clear, TXTmob wasn't Twitter. The Twitter team made a number of key innovations that allowed the project to scale, and to attract investors. Further, pointing out that TXTmob played a role in Twitter's creation is in no way to suggest that Evan, Blaine, Jack Dorsey, or anyone else stole anything from me. TXTmob was an open-source project that I freely shared. The folks at Odeo took this project and adapted it for mainstream use in ways that I frankly did not anticipate. And while I wouldn't object if one of the Twitter millionaires decided to send along a few "thank you" shares, I don't believe that they are under any obligation to do so … However, I do think it is important to get the story right. As Bilton observes, creation myths matter. They don't simply tell how things

> happened, they tell us who we are. Jack Dorsey clearly needs to believe that he's not just clever (and lucky), but that he's a rare breed of genius. It's also probably important to Twitter's employees and investors to believe this too. The problem with Dorsey's story, for the rest of us, is that it describes a world where the market is the sole site of technical and social innovation, and where we are wholly dependent on a handful of extraordinarily gifted entrepreneurs to lead us out of the dark ages. This is a myth. The truth is that Twitter—or something very nearly like it—would almost certainly have happened without Jack Dorsey. However, it might very well not have happened without the long progression of earlier tinkerers and dreamers, who often worked well outside the confines of the market. Their collective efforts paved the way for many of the technical marvels we now enjoy, and we should take care to ensure that they are not written out of the histories of the extraordinary age in which we are living.[16]

Postscript

We at *The Commonplace* think the example of TXTmob is particularly telling about the virtues of open design. Attending to the provenance of this experimental SMS app in relation to Twitter reveals the problematic nature of origin stories in the world of tech. The impression of Silicon Valley startups is steeped in an aura of legacy that often precludes the potential for something as successful as Twitter to have evolved in part from a collaborative, open-source technology. What is more, the fact of its encoding to facilitate peaceful protest by the hacking of SMS-to-email gateways makes for a particularly revelatory account in the history of social networks that prompts weighted pertinence today. In alignment with current debates around extremist media and disinformation—principle areas of focus for *The Commonplace*—it is more vital than ever that we reflect on why TXTmob was created, its appropriation into Twitter, and the implications of this trajectory for the present.

In reading these accounts by Hirsch and Costanza-Chock, a feeling of déjà-vu is palpable. As I write this, on May 29, 2020, Twitter has become another nexus point for discourse around civil protests. Today, the hashtag #JusticeforGeorgeFloyd has taken foothold in every corner of Twitter. These hashtags have become devastating ciphers for innocent lives as they pulse with a meter of repetition: protests over America's racist criminal justice system are repeatedly met with inertia as institutional racism and white supremacy remain entrenched. The use of hashtags to denote metadata and

system commands was deployed at TXTmob to coordinate the actions of protestors and report on police movements. These traditions, and their devastating iterations today, expose the open wound of America's deep-rooted systems of oppression. As Derecka Purnell, a human rights lawyer, and Marbre Stahly-Butts, the executive director of the Law for Black Lives, write: [17]

> Systems of oppression, like slavery, Jim Crow, and mass incarceration, must be reduced and abolished — not reimagined. Police officers, who primarily put people in cages, are the enforcers of mass incarceration. We must reckon with the reality that the police are part of the problem and stop investing money, power and legitimacy in them.

The exigency for this final line has been underlined most recently amidst one of the latest developments on Twitter. Just a few days ago, Mr. Trump posted a message on Twitter that concluded "…when the looting starts, the shooting starts" in response to the unrest in Minneapolis. This phrase dates back to the civil rights era and is known to have been invoked by a white police chief cracking down on protests and a segregationist politician.[18] Twitter quickly prevented users from viewing the tweet on the grounds that it glorified violence; a first for the platform which had previously refrained from applied such a warning to a public figure's tweets.[19] In addition to ongoing concerns about a global 'infodemic' that is complicating public health efforts, and the insurgent backlash from the Trump administration to the landmark Section 230, reading about TXTmob in the context of today elicits a most timely reflection.

The prescient nature of this technology, and the opportunity it gave users to feel transported into a collective space, was evinced by media coverage at the time. In an article by the New York Times (in retrospect, the title "Protests Powered by Cellphone" is endearing), a self-described "voracious TXTmob reader" emphatically states: [20]

> "When I can't be at a protest, like now," she said, waving her phone, "it's like I can be there, because I can know what's going on directly from the people who are there in the streets."

This quotation foreshadows how the idea of broadcasting status updates to strangers would increasingly come to resonate with public consciousness and incite novel applications. The New York Times article closes with a heedful look to this future; read in light of today, it feels prophetic—almost premonitory—as a direct address to the

unrest reeling our civil society today, to which Twitter has become a central focal point: [21]

> What happens to TXTMob after Election Day? The events of last week left the Institute for Applied Autonomy convinced that it has a future, not just as an activist organizing tool but also as a general mobile networking system.
>
> The pseudonymous John Henry[22] said he was looking at keeping the system going and might even expand it to work with cellphones in Europe and Asia. After that, it's anyone's guess.
>
> “People keep finding their own uses for this thing, and they're developing it on the fly," he said. "That's what's really exciting."

Footnotes

1. While much has been written about TXTmob over the years, the most comprehensive account may be found in my 2008 PhD dissertation: https://dspace.mit.edu/handle/1721.1/46594 ↩
2. ElBaradei 2003 ↩
3. Crawford 2017a. ↩
4. Crawford 2017b; Burckle 2013. ↩
5. Dyer-Witheford 1999. ↩
6. Tarrow 2010; Walgrave and Rucht 2010. ↩
7. Furness 2007. ↩
8. New York Civil Liberties Union 2014. ↩
9. See http://wearemany.com. ↩
10. Jackson, Bailey, and Foucault Welles 2019. ↩
11. In fact, Hirsch worked at the Center for Civic Media, the same research group that I would become affiliated with as an MIT faculty member years later in 2012. ↩
12. Hirsch 2008. ↩
13. Hirsch 2013. ↩

14. Sifry 2012. ↩

15. Hirsch 2013. ↩

16. Hirsch 2013. ↩

17.
Purnell, Derecka and Marbre Stahly-Butts. (2019, September 26). “The Police Can’t Solve the Problem. They Are the Problem.” *The New York Times.* Retrieved from https://www.nytimes.com/2019/09/26/opinion/the-police-cant-solve-the-problem-they-are-the-problem.html.

Mitchell, T. (2009, June 5). Men's health. USA Today. Retrieved from http://www.usatoday.com/ ↩

18. Sprunt, Barbara. “The History Behind 'When The Looting Starts, The Shooting Starts’“. (2020, May 29). *NPR*. Retrieved by: https://www.npr.org/2020/05/29/864818368/the-history-behind-when-the-looting-starts-the-shooting-starts. ↩

19. Alba, Davey, Kate Conger and Raymond Zhong. (2020, May 29). “Twitter Adds Warnings to Trump and White House Tweets, Fueling Tensions.” *The New York Times.* Retrieved from: https://www.nytimes.com/2020/05/29/technology/trump-twitter-minneapolis-george-floyd.html. ↩

20. Di Justo, Patrick. “Protests Powered by Cellphone” (2004, September 9). *The New York Times.* Retrieved from: https://www.nytimes.com/2004/09/09/technology/circuits/protests-powered-by-cellphone.html ↩

21. Di Justo, Patrick. “Protests Powered by Cellphone” (2004, September 9). *The New York Times.* Retrieved from: https://www.nytimes.com/2004/09/09/technology/circuits/protests-powered-by-cellphone.html ↩

22. Tad Hirsch has informed me that this is in fact his quote. He and fellow developers of TXTmob used pseudonyms to protect their identity. ↩