

## 4 Institutions

It's a Thursday afternoon in late April, and we're meeting Les at the Promise Center to canvass his neighborhood again. Two high school students will be joining us, similar to the last few weeks. They're part of a credit-recovery program in which they're required to make up school credits to graduate, and volunteering is one way to do so. When Les heard about the credit-recovery program, he seized the opportunity to recruit residents who could help with data collection. It was a way for him to build his "Block by Block" initiative while helping neighborhood students.

There are five of us canvassing today: Les, students Kevin and Tanya, and Amanda and me from the university. Les has charted a route out the door of the Promise Center that circles a few blocks. Along the route there are houses, apartment buildings, several lots, and a warehouse. Kevin and Tanya each carry a small tablet computer. As Les, Amanda, and I head down the first street, he asks Kevin and Tanya to go a few houses ahead, one on each side of the street, looking for code violations. Les knocks on the door of the first house on the street. He's talked to the woman who lives there once or twice before.

"Hi, do you remember me? I'm Les. I asked you about your neighbors a while back—the ones staying in that house. Remember? Are they still there? Are people still staying in that house?" Les points to a boarded-up house across the street. Looking closely, a board on one of the first-floor windows on the side of the house is missing. There's a crate pushed against the wall underneath it. The front porch is littered with bags from a nearby fast-food restaurant.

"Yes, they're still there, I see 'em at night," she says.

"Are they bothering you?" asks Les.

"No, not really," she replies.

“Okay, you let me know if they start becoming a bother.” Les wishes her a good day before he walks back down to the street. After we start walking, Les makes it clear that this conversation won’t be part of the official record. “We’re not going to record that,” Les tells me. “I’ll remember, but no one needs to know about that if they aren’t being a bother.”

A few doors down the street, Kevin has stopped in front of an abandoned apartment building. The structure appears solid, but its lot is overgrown and its walls are covered with graffiti. “It’s been like this for a while,” Kevin says. He lives nearby, so he would know. Using the tablet, he takes a picture of the front of the building, and then he opens the app. A series of checkboxes appear, which he begins ticking: Abandoned, check. Overgrown, check. “I can’t see the address . . . what’s the address of this apartment?” he calls out.

Amanda walks over to help. She opens her phone and navigates to Google Maps to get their position. Then she opens a parcel map from the city of Atlanta in another browser tab, and searches for the street address of the parcel. Once Amanda finds it, Kevin enters the correct address into the form on the tablet. I jot down a note about the difficulty of finding addresses. There are as many abandoned buildings and vacant lots as those that are occupied. Many house numbers have fallen off or are worn away. And, of course, vacant lots don’t have houses or mailboxes to attach numbers to. Missing information is just one factor that makes collecting this data difficult.

Around the corner there’s an older man sleeping on the front porch of another boarded-up house. Les says, “Don’t mark this house down either,” as the five of us walk over to the older man and start chatting with him. “So, seeing anything? Seeing any rats?” asks Les.

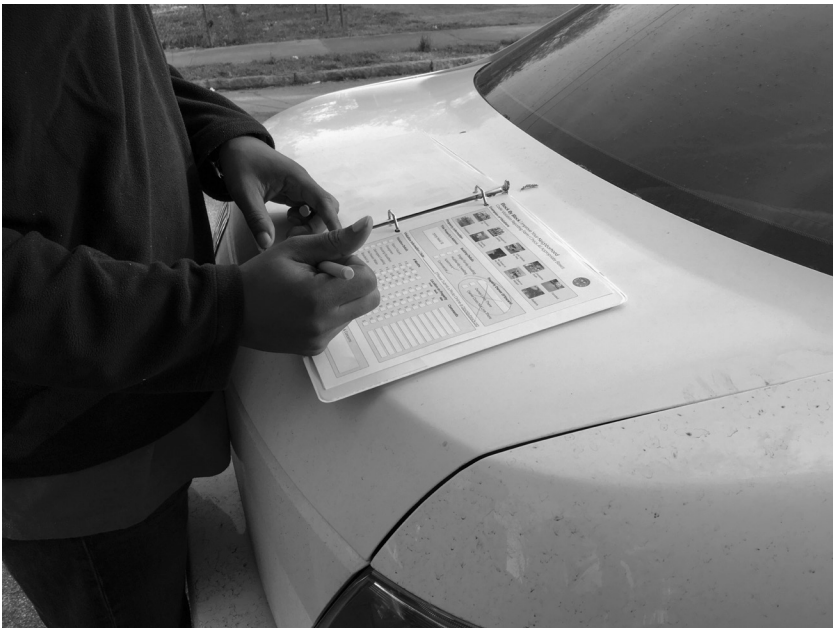
“Rats, yes, I see rats. There’re rats everywhere. There’re rats in there,” the older man says, pointing to a trash-strewn lot across the street. “There’re rats that come out of that basement,” he says, pointing to the boarded-up house next door, “and then there’re rats going in and out of that sewer all day and night. There’re rats everywhere.”

“Mark down that lot and that house,” Les says, pointing at the lot filled with trash and the vacant house next door. Tanya marks down the vacant house, while Kevin notes the lot filled with debris. Looking at the addresses of occupied houses on either side of the lot, Kevin figures out the lot’s address. We thank the man for the information and keep walking (see figure 4.1).

We’ve canvassed six streets, logging twelve code violations and five rat sightings, before returning to the Promise Center an hour and a half later.



**Figure 4.1**  
Collecting data on code violations in the neighborhood.



**Figure 4.2**  
Marking out streets where we've collected data on code violations.

Kevin and Tanya are tired and hand over their tablets. Next week we'll review the data together. Today has demanded enough effort just to collect the data. Les pulls out a rolled-up map from behind his desk and spreads it out on a table. With a highlighter, he marks the streets we covered today. Each week, as he and the volunteers collect more data, Les can highlight more streets (see figure 4.2).

Amanda and I return the tablets to the university to recharge them for next week's data collection. Tomorrow we'll copy the data from the app to a spreadsheet, adding twelve rows, one for each code violation collected. But our work won't yet be done. We'll still need to match the photos with each spreadsheet entry. Matching the photos to the records takes time, since our tool doesn't automatically geocode photos or allow us to upload them in the field. Once the data has been wrangled, we'll compare it to the database of code violations maintained by the city of Atlanta. Then we can see which violations we found were already known by the city. Comparing the data sets will also take work, because the structure of the city of Atlanta's public database inhibits us from automating the process. There will also be a chance that the city's data isn't up to date, or that some of the code violations have already been resolved. Our hope is that we'll soon have enough code violations to convince a code enforcement officer to meet to discuss how to process these violations and increase attention to neighborhood issues.

In this chapter, I discuss how designing tools and processes for data collection offers a way to explore and shape institutional relations between residents and city government. The *Careful Coding* project, an ongoing collaboration with Les and his organization, Block by Block, uses data to draw attention and bring resources to his neighborhood, while attempting to retain the collective agency of residents in determining what gets acted upon. I argue that this work is a kind of institutioning—coupling dialogic and material practices in civic processes and politics. Institutioning puts the explorations of diverse subjectivities and devices of inquiry discussed in previous chapters into situated and ongoing practice. These activities are not only rehearsals of what might be, they are experiments in real time, enacted through the work of on-the-ground data collection, meetings with government officials, and conversations with and among residents, municipal workers, and designers. As such, they demonstrate the importance of lived experience to democracy, particularly as espoused by

feminist pragmatists (Addams [1910] 1990; McKenna 2001; Seigfried 1999). This work of democratic inquiry develops through a series of encounters, in which we collaboratively probe configurations of action and authority within, across, and between institutions, thereby contributing to diverse civic imaginaries and practices.

Institutioning brings design into the world of municipal policy and procedures, and this requires understanding institutions. If, as part of the work of democratic inquiry, designers want to experiment with relations between civic constituencies, we should understand the cultures and procedures of institutions—“the rules of the game” (North 1990). If we do not understand those rules, we risk engaging in the most selfish sort of play—casually participating in a contest that matters deeply for others.

### *Careful Coding*

*Careful Coding* is a community-based project where designers work with residents to collect, manage, and share data on code violations in their neighborhood. Such violations include overgrown lots, trash, squatters, and rodent infestations. In Atlanta, code violations are handled by the Code Enforcement Section of the Atlanta Police Department. Placing code violations within the police department means that enforcement tends to emphasize reporting and responding to violations that most directly affect public safety. There are multiple regulations that guide how a code violation might be reported and acted upon. These include the Atlanta Housing Code, the Graffiti Ordinance, and the Commercial Maintenance and Industrial Code.

Code infractions are often the result of underlying issues. Absentee or delinquent owners and landlords are a common problem, for example. Empty lots become overgrown and used for dumping tires when the owner is negligent or complicit. Occupied buildings with rodent infestations and open roofs tend to persist when landlords don't maintain the property. These situations can fester, due to even deeper structural inequalities. Like many cities in the United States, multiple neighborhoods in Atlanta suffer from the long-term systemic neglect characteristic of endemic racism and classism. Abusive financial practices have enabled properties to be purchased based on financial speculation and left to rot in anticipation of rising real estate value. One reason to document and track code violations

is to hold absentee and negligent landlords accountable. Data ostensibly helps residents request action from a city government tasked with addressing issues of safety and well-being.

Yet, documenting and tracking code violations is a form of surveillance. Methodically observing and inspecting a neighborhood or community of people, particularly a Black neighborhood, is deeply problematic due to the ongoing oppression and abuses brought about by the surveillance of Black and Brown peoples and the ways data can amplify that oppression and those abuses (Benjamin 2019; Browne 2015; Crooks and Currie 2021; Milner 2020). The fact that code enforcement is part of the police department adds an additional layer of complexity, given the history of oppression and abuse by police in communities of color. Furthermore, the correlation of environmental factors with social phenomena can lead to racist policies. Consider broken-window policing, which justifies enforcing minor infractions in communities of color (Harcourt 2009). This policing method is driven by the idea that minor maintenance problems in a neighborhood promote criminal behavior. Such logics neglects more community-engaged strategies. It is a challenge to consider how practices of collecting and sharing data on code violations might be infused with care.

A code violation is like a traffic ticket for an infraction against regulations of the built environment. When a code enforcement officer observes a code violation, such as a house with a collapsed roof, they write a citation. If there is a structure present, the officer affixes a code violation sticker to the front door to notify the owners and area residents that a citation has been issued. Once the citation has been issued, the owner of the property receives a summons to court. In court, the conditions of the structure or lot are discussed and the owner may be fined and required to remedy the violation, depending on the circumstances. Locating the owner is not always an easy task due to incomplete records or discrepancies in records. These difficulties are exacerbated when dealing with holding companies or other legal and corporate configurations of ownership often used for real estate investing. Even when the owner is located, there is no guarantee they will appear in court. It is not uncommon for violations to accrue, leading to properties deteriorating.

In cities like Atlanta there are more reports from residents about violations than there are officers to field them. This disparity has spurred efforts to encourage residents to directly report issues to the city, either by calling or sending an email to the Code Enforcement Section or by using the city's

311 system (a system for reporting nonemergency events to city government). Once a resident's report is logged, if it is deemed to fall within the various categories of code violations, an officer is sent to investigate. In the best of cases, code enforcement officers develop relationships with neighborhood organizations and residents over time, and they work together to document issues to be improved in the built environment.

The *Careful Coding* project grew from our ongoing collaborations in the neighborhood. Les, a middle-aged Black man, works as a counselor for a local nonprofit for youth and families. For some time, Les had been collecting data about his neighborhood and trying to organize residents to take action, such as cleaning up lots and reporting broken infrastructure to the city. As we began working with Les, we came up with the name *Careful Coding* to provide an umbrella to our collective efforts. We wanted to call attention to the aspect of this work that was most distinctive—that the work was performed with care. Collecting data is not Les's day job. However, his day job provides him with the flexibility and opportunity to work on *Careful Coding*. The nonprofit where he works has an office in the English Avenue neighborhood where he lives, which is also where he's collecting data.

English Avenue is a historically Black neighborhood in Atlanta, long known for its activism. It has also suffered from the massive withdrawal of resources that occurred in the 1960s. Decades later, many houses, apartment buildings, and lots remain vacant. At the same time, English Avenue has a strong working- and middle-class community that supports a vibrant neighborhood culture of churches, neighborhood associations, community gardens, and small businesses. This is a neighborhood to be celebrated. Disturbingly, gentrification is now encroaching, bringing more affluent white people back. After decades of being overlooked, real estate investors have started speculating in English Avenue and nearby neighborhoods. Long-time residents are concerned about displacement.

Atlanta is similar to many cities; the municipality is investing in databases and data-driven platforms. Increasingly, data services are used by government agencies to streamline their work and structure new relations with residents. Some of these systems are sophisticated, employing machine learning and "big data" to derive insights and direct action. Other systems are simpler. The catchphrase "There's an app for that!" has become a punchline that applies to all aspects of governance. Want to contact your councilmember, sign a petition, or report a pothole? There's an app for that! SeeClickFix

is the canonical example of a “civic tech” app that lets residents report on local conditions, which are then routed through municipal government and attended to (Berkowitz and Gagnon 2017; O’Brien et al. 2017). The ubiquity of these systems and the use of data becomes a conundrum. While these systems and their data tend to reinforce and reproduce existing hegemonies and their institutions, for neighborhood residents, advocacy groups, and activists, having data is also increasingly necessary to influence government officials: they use it to contest policies, drive new practices, and campaign for action (Schrock 2016).

But data as an end unto itself has not been Les’s motivation; his interest in data is more pragmatic. Data is an evidentiary currency, documenting a set of conditions in a form that can be used to broker attention and resources. He wants his neighbors’ homes and their surroundings to be safer. Les would like to hold absentee landlords and negligent owners accountable and make them tend to the properties they manage. If Les wants to campaign for better living conditions for his neighbors, data can influence stakeholders to change how they operate. Les also wants the city to do its jobs regularly, by cleaning lots and fixing broken sewers. At the same time, Les wants to promote a shared understanding and acceptance of the precarity of his neighborhood’s residents. He is aware that for some people, being served a citation could start a chain of harmful, compounding consequences. They would have to go to court and pay a fine. If they couldn’t pay it, the fine would likely increase, and they would have to go to court again. And perhaps again. Sometimes the conditions that cause a violation can be addressed among neighbors, given the chance. As reasonable as Les’s stance might seem, it’s complicated to both care for residents and track conditions in the built environment. City government works by way of formal procedures. Technocratic systems and policies that use data tend to enforce formal procedures and rules with little sympathy for neighborhood context and lived experience.

Given the significance of data in civic contexts, it should come as no surprise that there are many tools available to help residents collect and analyze data. A more complex challenge is how to align data processes and practices across organizations, institutions, cultures, and communities. This requires the imagination and trialing of modes of engagement between civic constituencies that characterize design experiments in civics. Recalling Jasanoff and Kim (2009, 120), civic imaginaries are “collectively imagined forms of



social life and social order reflected in the design and fulfillment of nation-specific scientific and/or technological projects.” But projects like *Careful Coding* differ from Jasanoff and Kim’s level of analysis; they don’t involve the whole nation, only a neighborhood. Such projects are not an examination of democracy in the abstract, but rather an examination of the lived experiences of democracy. These imaginaries, then, are not speculative. These imaginaries unfold through situated practices of doing, through ongoing practice. Increasingly, data is a medium through which such doing occurs. But while these modes of engagement between civic constituencies depend upon and are mediated by data, they are more than data alone. For these engagements to come into being and cohere, relationships need to be established and sustained.

### Design as a Relational Practice

The idea of design as a relational practice—that is, a practice that is social in character and contributes to shaping associations—is not new, but it is receiving renewed attention (Agid and Chin 2019; Blauvelt 2008; Montuori et al. 2019). The questions of how design activities and outcomes contribute to forms of organization and collective action can be vexing, because historically the practices and discourses of design have focused on individuals and small-group interactions. As design meets the civic realms of law, policy, and government, there is a need to refigure activities and theories of design (Crivellaro et al. 2019; Del Gaudio, Franzato, and de Oliveira 2016). After all, these experiments are woven into fabrics of residents, communities, corporations, and government agencies that include but also exceed individuals and small groups. Considering design as a relational practice also affects how we understand our roles and actions as designers, in concert with those we partner with. As Shana Agid and Elizabeth Chin (2019, 81) describe this relationality, “Designers do not produce value by *creating* or *instigating* political or social change as outsiders, we do with others through joining in, when invited, and finding our way.” In the civic context, we are often “joining in” with established institutions, and their cultures and practices. One useful line of thinking comes from discourses and practices of participatory design: How do “democratic design experiments in the small” engage the “in the large” contexts they are situated within? (Binder et al. 2015; Huybrechts, Benesch, and Geib 2017b). This line of

thinking begins with commitments to individuals and groups, and then swells to develop an appreciation of how design contributes to existing and ongoing assemblages of meaning and action.

The term “publics” has guided some conversations about how design might gather and cohere diverse constituencies (DiSalvo 2009; Le Dantec 2016; Lindström & Ståhl 2014; Venturini et al. 2015). In much of this work, designers are informed by the work of John Dewey (1927) and inspired by his description of why people organize: publics are formed by those who are concerned about an issue and its consequences. In contrast to notions of a “public sphere,” there is not a single unified and generic public. Rather, a plethora of publics constantly form and dissipate in relation to issues. A public, then, is a distinctive form of organization because it is issue-oriented, temporary, and contingent. Through various tactics and practices of making, designers can bring together those affected by an issue and produce resources for taking action on that issue. Those resources—and the practices of their making and use—are occasions for infrastructuring.

Infrastructuring refers to processes of making supports and connections that enable future action. In her groundbreaking work on infrastructure, Susan Leigh Star (1999) explains that infrastructure is more than technical components. To her, infrastructure is inextricably social and involves ongoing coordination work. Like infrastructure, processes of infrastructuring collapse distinctions between the technical and the social. Infrastructuring involves changing arrangements of assets and means, both human and nonhuman actors. One way to think about infrastructuring is in relation to prototyping. If prototyping creates sample artifacts to learn from through making and use, infrastructuring assembles collections of resources for ongoing learning through making and use. Some of these resources are prototypes—bespoke made things. Others are already existing artifacts and systems enrolled into the collection of resources. The ongoing and layered quality of infrastructuring opens the ability to establish assets and means for participation over time and across sites. As such, infrastructuring is more than simply prototyping at a different scale. Infrastructuring is making with the purpose of enabling future action. “Infrastructuring, then, is the work of creating socio-technical resources that intentionally enable adoption and appropriation beyond the initial scope of the design, a process that might include participants not present during the initial design” (Le Dantec and DiSalvo 2013). What is put in place through infrastructuring is used by

those who might not be traditionally considered in design processes, and who may not even call themselves designers.

Concepts of publics and infrastructuring have been developed in relation to projects that tend to exist “in the small”: local, lived conditions of workers and residents. But there is often a mismatch between the grassroots and the government, which challenges moving from the micro to the meso (or macro) scale of politics. Liesbeth Huybrechts, Henric Benesch, and Jon Geib (2017b) offer the term “institutioning” to sensitize designers involved in micro-scale politics to the broader contexts of their work. Institutioning delineates a practice of design that works within and with institutions. They use the term “institution” to encompass an assortment of structures, procedures, and cultures. In other words, institutioning is a shorthand for a swath of activities, “a practice of navigating in a structured yet highly porous institutional landscape, through attentiveness to dependencies but also by canalising synergies and serendipities. It involves a practice of interweaving between—as well as producing—various insides and outsides in participatory processes, by consolidating and challenging existing institutional frames as well as forming new ones” (Huybrechts, Benesch, and Geib 2017b, 158).

The concept of institutioning, then, expands the perspective of design to relations between organizations and collective action. Whereas “infrastructuring” is a label for practices and materialities that supported participation over time within publics, “institutioning” is a label for practices and materialities that construct and align associations extending beyond what we commonly consider a public (Dixon 2018).

Huybrechts and her colleagues’ focus is on institutional frames. In this chapter, I expand their concept and practice of institutioning to include a range of activities and outcomes. Institutioning suggests that designers should consider how institutions might be sites and means of making, unmaking, and remaking. The concept of institutioning is compelling because design experiments in civics work across an array of settings: nonprofits, municipal agencies, local, state, and federal programs, small businesses, multinational corporations, universities, and the courts. The structures, procedures, and cultures of these settings profoundly matter. But what does this institutioning look like in practice? How do these endeavors of making synergies and serendipities, of interweaving and producing insides and outsides, actually happen? How should we appreciate these efforts? Answering these

questions will produce the descriptions needed to understand institutioning as a relational design practice and to begin to meet the ethical and political importance of understanding institutions. Institutioning also helps designers perceive and value organizational, policy, and legal contexts not as an inscrutable tangle of knots but as replete with possibilities.

Returning to *Careful Coding*, it is both a civic data project and a project exploring civic relations as they are made possible by data. It explores the making and use of data for local advocacy, taking up Yanni Loukissas's charge that "all data are local" (2019) and probing the qualities, potentials, and limitations of data in a particular setting. That making and use works, in turn, as a design practice concerned with imagining and instantiating different probative associations between civic institutions. In this project, artifacts and systems are made with residents who assert their values and desires through the collection of data, in dialogue with the practices of municipal workers and governmental structures and processes. Through institutioning, data becomes a medium for cultivating relations. It enables people to create synergies and serendipities for weaving between and together new insides and outsides through participatory processes. The *Careful Coding* project thus straddles the worlds it is engaging with and tentatively composing; it is both a grassroots effort led by residents to address pressing issues and a project through which we collaboratively explore how we might affect our civic institutions.

### Designing for Data Collection and Interpretation

Les had been tracking various issues in the neighborhood for over a year before we met and started working together. He mostly documented problems with neglected and abandoned buildings and lots. He also tracked the conditions of the streets and sidewalks. When there was a stream of water down the street for over a week, Les knew there was a water main break or a clogged sewer somewhere nearby. He found the source of the water and contacted the Code Enforcement Section, which arranged for the Office of Watershed Management to fix it. Les also kept track of what changed for the better when problems were fixed or resolved. He called his effort the Block by Block initiative because he wanted to create an organization that improved the living conditions for himself and his neighbors one block at a time.

Dr. Amanda Meng and I had been working with another community organization in this same neighborhood for several years. After Les saw Amanda present another data project in the neighborhood, Les approached her about collecting code violations together. Together, Les, Amanda, and I started *Careful Coding*, a project that attempted to use data to mediate and enact new political relations in Les's neighborhood. Over time, Les's desire to track code violations expanded into enabling strategic encounters among researchers, residents, and city employees. Throughout the course of the project, we collaborated with Les to develop and use a series of processes and tools for collecting, wrangling, and sharing the data. Because it never received direct funding, supporting this work has always been difficult. It has involved making time, finding resources, and maintaining commitments to each other, unbound by a formal research proposal or defined deliverables. As I will later discuss, situating *Careful Coding* in relation to the university let us leverage the standing of the university as a tactic for engagement with city government. Altogether, the relational character of this project—based in commitments rather than organizational obligations—made it both distinctive and challenging.

One distinctive aspect of the *Careful Coding* project is that it had no final version of its data set, processes, and tools. Neither is there a clear sequence of iterations from one prototype to the next. In these ways, the project is in tension with familiar models of design, which usually presume an end in product or service development. However, as Paul Dourish and colleagues (2020) describe, some of these tried-and-true design processes, such as prototyping and iteration, may be at odds with the practices and needs of communities. Instead of following a formal design process (whatever that might be), this work develops along a more meandering path, led by Les and through ongoing interactions with other residents, code enforcement officers, and city council members. These interactions affect Les's aims and tactics, which in turn affect our collaborative data collection, management, and sharing; this inquiry involves a continually shifting set of orientations and alignments that continually reconfigure the civic environment. Throughout this work, the design experiment was made possible by and through—but not beholden to—the making and use of ad hoc data processes and tools, a process Helena Karasti and Karen Baker (2008) characterize as “growing one's own infrastructure.”

Initially, the functionality of the tablet-based application supported residents collecting and tracking code violations over time. They needed the ability to mark a point in space, assign a series of attributes to that point, and then link a date to those attributes. In other words, what was needed was a spreadsheet, and what was useful for generating the data for that spreadsheet was a map. Technically, the app was not complicated to assemble. It was the social life of data that kept the work from being simple. First, to be useful by government, the data needed to match the city's data structures and categories they used to label infractions. Second, assigning a code violation to a geographic point was not always easy. As described at the start of this chapter, often while trying to record a violation in the neighborhood there were no addresses to be seen. It matters whether a potential violation is marked at 235 or 237 or 239 Sunset Avenue. Third, the app needed to be accessible to users with varying levels of technological skill. Finally, the app needed to be cheap. There was no dedicated budget to put toward purchasing and maintaining data collection tools for residents. For this reason, we erred toward tools and processes that would be robust even in the absence of a dedicated budget for technology. It was also crucial that our tools and processes be seen as legitimate. City employees and public officials needed to see our tools and processes as sophisticated enough to accept the data we collected, or at least not to dismiss our efforts out of hand.

Taken together, these requirements and conditions made realizing the base functionality more difficult than we expected. In our early efforts, we surveyed available off-the-shelf tools and decided on an application called SW Maps. The essential feature of this tool was its map interface. The user clicked on the map to add a point at that location, then filled in a description of the code violations in a text box and pressed Save. The record was saved to a local file on the tablet, which could be transferred off the tablet and into a spreadsheet. In general, SW Maps worked well for data collection in the field. However, it created a significant amount of data wrangling work when returning from the field. Code violations were manually input into a text entry box, and rather than listing specific violations such as "Collapsed Roof," "Burned Structure," and "Excessive Trash," it was easier to just code the structure as "Abandoned." As we later discovered, this convenience elided important distinctions between the various houses and lots.

The photos presented another problem. It was easy enough to switch from the SW Maps app to the camera app and take a photo of each site that was later reunited with the data. But the default naming convention for the photos did not reference any location. Instead, we had to retrospectively inspect the metadata for each photo, which contained the latitude and longitude of a location. Then we entered those coordinates into an online tool for reverse geo-coding (looking up a street address from latitude and longitude coordinates). This data work was tedious, so we were eager to find a way to streamline the workflow. During the summer of 2017, we had the opportunity to collaborate with our colleague, Dr. Ellen Zegura, through a National Science Foundation program for Civic Data Science that provided research experiences for undergraduates. Through this program we worked with a student named Michael Koolhang to try to solve the problem of locating the images taken during data collection. He created a script that automated the reverse-geocoding process and saved each photograph with a new name that included the street address. When attempting to match the photos with address records, however, we discovered a glitch that stemmed from the embodied experience of data collection. When taking a photograph of a house or lot, you were not actually standing at *that* location. In order to capture the full view, you would likely stand in the middle of the street or even across the street. Consequently, the address returned from the coordinates was often the address of a house across the street from the photograph. To correct this error, we looked at each photo and compared it to photos from Google Street View—an imprecise reference based on freely available tools. The process of producing a data record was inescapably messy and relied on a bricolage of tools, platforms, residents, and designers.

### **From Digital to Paper and Back Again**

After several months of using SW Maps, a second iteration of the tools explored making the data collection nondigital. Master's students Qing Tian and Nick Tippens prototyped a paper form containing all of the information needed to document a house, building, or lot. Working in collaboration with Les, we thought a paper form would provide prompts and structures for more code violation detail. A form version would also enable volunteers to mark a violation as resolved. This feature was not present in SW Maps, and it would help Les track successful outcomes. Les also thought that he

could distribute the paper forms at neighborhood events. Residents could fill out the forms, and then the sites could be checked after the fact, broadening participation in data collection. The only digital aspect the paper version retained was digitally photographing the sites. Of course, a paper form version added to the work of transcribing data into a spreadsheet.

The paper tool did not last long. More time went into its design than its use. Despite everyone's initial enthusiasm, it proved awkward when taken out into the neighborhood. This was not a case of overdesigning a tool, as so often happens. The paper tool was simple and well designed, developed with the active involvement of Les. But when taken out and used over multiple data collections, the sheets of paper became difficult to keep track of over time. And the number of volunteers working with Les remained at a handful—a number small enough to obviate the need for tools that could be widely distributed. The paper tool served a crucial role, though; it prompted a request for a form-like digital tool, rather than the map interface of SW Maps. This led to the design of another app-based data collection tool that took the structured recording of the paper form and put it onto a tablet as a sparse digital form with checkboxes.

We continued to collect and wrangle data throughout the process of designing tools. After each round of data collection, Amanda would bring the tablets back to the university and download and process the data. We used the time between data collections to reflect on how to better support the process of data collection and interpretation. One notable complication was that Les did not want to share *all* of the data with the Code Enforcement Section. Les had always protected fellow residents and did not want people to get pulled into an endless cycle of court dates and fines. Certain things in the neighborhood he just wanted to let be, while working with neighbors to address more serious problems. In other words, Les did not want to become an extension of the state. He was well aware of how people would come into the neighborhood and make judgments about its residents. He knew how Black people and poor people were judged, and how quickly a citation might saddle them with bureaucratic headaches, or worse. Yet he saw the value in documenting neighborhood violations so he and his neighbors could keep track of trends over time (Meng, DiSalvo, and Zegura 2019).

As often as possible, we would accompany Les in the field. And even when we couldn't, we were still actively involved in making the data



workable, both in terms of providing the labor of data wrangling and of contributing data to the set that would, ostensibly, add to its value by associating it with city data. In this way, we were functioning as data intermediaries that were also institutional intermediaries. We were constructing connections between the data sets maintained by the city and the data collected by Block by Block. We would meet with Les to discuss the data set as it was developing, and he would share information. (“That wall that was falling onto the sidewalk has been fixed. The squatters have moved from English Avenue to North Avenue.”) We would then share what we had learned from our reviews of the city’s data (“It seems none of the violations on Jett Street are known to the city, but all the violations on North Avenue are included in their databases”). These regular check-ins would influence the selection of the next set of streets to walk and what data needed to be collected.

Over the next two years, we continued developing different processes and tools. Together with Les, we continued to reflect on our ongoing experiences in data collection and wrangling. A subsequent hybrid version of the tool consisted of a web-based form, two commercial Wi-Fi hotspots donated by another colleague at the university, and a paper map that was affixed to the back of the tablet. When out collecting data, a user would open the web form, then fill out information about an address, including its code violations, with a simple series of short entry fields, checkboxes, and menus. Finally, using a checkbox, they would select whether or not this particular entry should be shared with Code Enforcement or kept private to Block by Block (Meng, DiSalvo, and Zegura 2019). The paper map attached to the back of the tablet was an attempt to merge the functionality of an application with a built-in map. This map divided the neighborhood by blocks, and each sheet had map views with corresponding addresses taken from the county tax records. If an address was not readily apparent from the street, the user could consult the paper map (see figures 4.3 and 4.4).

The web-based form also addressed the ongoing challenge of associating images of locations with data. The user would shift out of the browser to the camera app and take a photo. Then they’d go back to the browser, attach the photo, and press Submit. The form uploaded the photo and automatically tagged it with the correct address and the associated code violations. As with our foraging work described in the previous chapter, connectivity was a persistent issue. The solution for *Careful Coding* was mobile hotspots.



**Figure 4.3**  
Paper maps affixed to the back of a tablet.



**Figure 4.4**  
Using the tablet and paper maps to collect data.

The only challenge was that the user, when pressing Submit, had to be close enough to the hotspot to have network access. At times, this required a bit of back-and-forth on the street to orchestrate our positions in relation to one another. One of us would record the information, then take and attach the photo. Then we would call the volunteer carrying the hotspot closer so when we hit Submit, the data would be sent.

Our experience with *Careful Coding* demonstrated how civic data projects are often a punctuated process of trialing tools and collecting and processing data. This process is further affected by changing conditions in the civic environment. Establishing and maintaining closer relations between residents and municipal offices and their services require more than processes and tools. Establishing relationships requires generating opportunities for cooperation. These opportunities are not always given; they often must be made. And working to make them is important because it is in those moments of cooperating when we could collaboratively explore and enact configurations of action and authority within, across, and between civic institutions. Like the devices of inquiry discussed in the prior chapter, tablets and paper forms are not the subject of the design experiment. These objects—both the tools and the data—provide the conditions with and through which institutioning and democratic inquiry unfold.

### **From Datafication to Institutioning**

Putting data to work required that we shift from designing tools to staging encounters with city government workers. Such encounters trial and establish synergies, as well as points of contestation and resistance. One way that such encounters and the corresponding activities of institutioning unfold is through dialogic modes of making, including “democratic dialogues” (Huybrechts et al. 2016). As Huybrechts and colleagues discuss, these dialogues fit within traditions of participatory design as they are intended as opportunities to broaden participation in shaping discourse, with a recognition that discourse and action are coupled.

An important aspect of the democratic dialogue is that it also affects the role of the researcher, casting them as “a creator of space for dialogue and contestation and a contributor to retooling and learning” (Miettinen 2004, 105). As I will discuss, these democratic dialogues did indeed have an effect upon our activities and subjectivities as engaged designers.

When we first began working with Les, there was a code enforcement officer assigned to the English Avenue and Vine City neighborhoods. Les developed a friendly working relationship with him. They met regularly, and Les would share a list of code violations he had collected. Together, they would walk the streets to look at the addresses on that list. The officer noted them in his official record and spoke with Les about what action might be taken. However, after that officer retired, different code enforcement officers added English Avenue to their responsibilities. Les had fewer communications with these officers because they did not seem interested in the data he collected. Perhaps they were simply busy, since they were responsible for more neighborhoods. Spread thin, they had less time for English Avenue.

In conditions of limited resources, we thought code enforcement officers would find *Careful Coding's* data especially valuable. Our hope was that it would help direct their attention and hasten responses. However, try as we might, we could not get the attention of field officers. At Les's request, we asked for a meeting with the Code Enforcement Section to share the data we had collected. The strategy was simple; perhaps if we could convince leadership in the Code Enforcement Section of the value of our collaborative work in the neighborhood, they might encourage (or even require) field officers to meet with us. We were hopeful that tactful advocacy would help us advance our cooperative effort to address code violations. Les asked that he not be present at this meeting because he believed we might have more leverage and achieve better results if the data was presented by university researchers alone. We were not comfortable with this request, but we understood and respected his reasoning. We saw his request as recognizing the relational expertise and authority (Dindler and Iversen 2014; Huybrechts et al. 2016) we were granted as faculty, staff, and students from a technical university. And so, Amanda and I reached out to leadership in the Code Enforcement Section.

With only the modest effort of sending a few emails, we successfully arranged a meeting. To prepare, we were asked to forward the data we collected, which we did. About a week later we sat down with a senior officer and four other members of the Code Enforcement Section. We were anxious. Here we were, on our own with data we had collected with Les and his volunteers over the past year. We knew this was a chance to share that work, but we also thought it would be met with skepticism. After all,

there were enough code violations from these neighborhoods in the city's databases that city employees were well aware of the extent of infractions. They were also aware of the relationship between many of these violations and absentee and delinquent landlords. We weren't presenting data that provided insights they did not already have. Our hope was more modest. By sharing this data, we wanted to assist Les in accessing city resources to support his efforts. What would count as "support" was as simple as an agreement to send a code enforcement officer out to meet with him in the neighborhood, to review the data, and discuss future engagements. In other words, our hope was that this encounter would prompt another encounter, thereby creating a pathway for future cooperation.

We arrived at the Code Enforcement Section and were ushered into a conference room. Three of us were from the university, and five from code enforcement. As we passed around printed copies of the data we had collected and brought up a map on our laptop, we were met with the reactions we anticipated. There were several sighs, a few arched eyebrows. They expressed their respect for the university and appreciation for us reaching out to them. They seemed glad we didn't think we could do this on our own, and that we had respect for the city's expertise and roles. Still, a wariness accompanied the meeting. These city employees had seen these sorts of projects before, from both residents and university faculty; they knew they would see them again. They were doubtful and cautious. Projects such as these take up their time, and moreover, they often create more work for the already stretched municipal employees.

In this tense space, we had a surprisingly fruitful conversation about the possibility of a collaboration, though it might be more apt to characterize the conversation as a negotiation. We wanted them to recognize the legitimacy of the work and commit to join us in the field. It was recognition that we earned and a commitment that we received that day—albeit with effort. I began:

"Thanks for meeting with us today. We wanted to share this data with you and talk about how we might work together, with residents, around collecting code violations."

"We have most of this data" was the quick and curt reply.

"Okay, most of it, but not all of it?" I asked, hopeful.

"Most of it."

“But is the data you don’t have useful?” I probed.

“Maybe. It could be. It depends on whether it’s accurate,” came the hesitant, tentative answer.

I pushed: “Okay, so, honestly, is this work we are doing useful to you at all? Can you do something with it, or is this just more work for you, an annoyance? If so, we get that. That’s not what we are here for. Because if this isn’t useful, then we should do something else, right?”

There was a pause and a smirk from two of the officers as they looked to the most senior officer to see how she would answer. And then I prodded, “What would make it useful?”

“You should meet with the officer who works those neighborhoods. We’ll put you in touch. And you should meet with Councilperson X; they are interested in doing something similar in their neighborhood.”

We thanked them for their time, and they expressed appreciation for us speaking with them, which they seemed to sincerely mean. The meeting ended with us receiving our desired invitation to meet with the code enforcement officer assigned to English Avenue. The offer to make an introduction to a councilperson was a welcome surprise, and a hint that perhaps they did not think this work was entirely useless. This encounter, this democratic dialogue, thus beget another yet to come, and the experiment in different configurations of action and authority continues.

In this encounter, we moved through a series of dialogic positions and tactics, as one way of doing institutioning. Over the course of this meeting, we were simultaneously engaged in what Huybrechts and colleagues (2016) refer to as committing dialogues and questioning dialogues. As a committing dialogue, we sought to create connections in the behind-the-scenes associations between code enforcement officers and residents by appealing to the standing and relations between the institutions of code enforcement and those of the university. As a questioning dialogue, we probed and pushed against the status quo of the singular authority of code enforcement officers tracking violations. We used the data as a strategic, evidentiary asset, demonstrating that it was possible to consider different modes and practices of tracking code violations.

Not surprisingly, arranging a meeting with the code enforcement officer assigned to those neighborhoods took some time. Officers are busy, and this type of liaison work is not a priority. In the meantime, we continued to collect and wrangle data. Two months later, we received an email from

a code enforcement officer that simply stated: "I'll meet you at 8:30 a.m. at 123 English Avenue next Wednesday." And that was that. We rearranged our schedules, printed out copies of the data we had collected to date, and looked forward to this next encounter. Then it was Wednesday.

### **Making It All Fit**

It's about 8:15 a.m. when I arrive at 123 English Avenue. There's a new house being built at that address. It's sizable. I can't tell if it's a duplex or a single-family house. There are several vans parked on the street with their doors open, piled full of building materials. About a half-dozen workers move between the house and the back of the vans, carrying what appears to be ventilation equipment. I get out of the car and look around for Qing and Les. They aren't there yet. I'm early. The workers look at me suspiciously. Then Qing drives up and parks a few car lengths in front of me. As I walk up to greet her, she gets out and says, "There's Les." I turn around and Les is walking toward us. He looks at the construction and says, "This one's going up quick." His tone reflects his concern at yet another sign of impending gentrification.

A few minutes after 8:30, a sedan pulls up with a woman driving and a man in the passenger seat. They pull over and I walk up to them. She rolls down her window and I lean toward the car. "Hello, I'm from Georgia Tech. Are you from code enforcement?" I ask.

"Yes," she replies.

"Okay, should we get in the car?" I ask.

"Absolutely not," she says, firmly. "This is a city car, you can't ride in this."

She parks and they get out. Introductions are made as she stares at the house being built. I've brought printouts of the code violations that we've collected together, organized by street, and cross-referenced with the city database. We're excited to finally share these, so I offer them to her. She holds up her hands and takes two steps back, saying, "I'm not taking those, that's not what today is about."

I mutter, "Okay," taken aback and frankly frustrated.

"Today we walk and talk—I don't need those." She looks at the house again. "I wanted you to meet me here because I wanted to talk to you about this house. Well, the house that was here—it had all sorts of problems. But they got ahead of me. In my list, that house is still here."

Clearly, she's already a bit frustrated herself. I fold up the printouts of the code violations and stuff them in my coat pocket. She starts walking and we tentatively follow. As our group walks down the street, we explain a bit of what we are doing with Les, and Les explains his motivations. She nods, seemingly listening to us while also paying attention to other things. She's got two phones that buzz insistently, and she constantly moves them in and out of her pockets to look at them. We get to a house several houses down the street, and she looks up. "Go get the stickers from the car," she says to her partner, who walks back to the car. She starts pointing out all of the things wrong with the house in front of us. "Overgrown, taller than your waist. Roof collapsing. It looks like there may have been a fire at some point, you can see the back is all wrong. It looks burned and never repaired. There's open windows along the front and sides."

Her partner comes back with a sticker the size of a magazine. She tells him to go down the side of the house to look at the back. Les takes a step to follow him and she says firmly, "No, don't you do that, you stay there." Her partner goes back and hollers that it looks like there's been a fire, and there are more open windows. We take a picture with our phone and ask if she wants it. "Why would I want it?" she asks.

"Can't you use it?" I respond.

"No, I can only use the pictures I take, with this phone—my city phone," she says, holding up one of the two phones she's carrying. She goes on to explain, "Photos are evidence. If you take a photo and send it to me, and the city takes the owner to court, the only way that photo can be used is if you show up in court too and verify it. And then you're going to get cross-examined. And likely you won't show up anyway, but if you do, you better not have anything against you, because if you do, that photo will just get thrown out."

She can't use any photos she didn't take with her city phone. That's how the evidence stays evidence. I wince at the thought of all the photos we collected, and the work we've done to associate those photos with data about infractions. She gestures to the front porch, and her partner puts the sticker on the front door. She explains that the sticker means no one is allowed on this property until they come down to city hall to sort things out. She'll file the report when she's back in the car. We keep walking. Both of her phones keep vibrating. One of the phones suddenly rings, and she walks away to take the call. A few minutes later she returns and explains that one of the phones is her city phone and the other is her own phone, but she uses her



own phone for work too. If you contact her through the city phone she'll get to it, but it takes a while as she fields all the calls in order, and there are a lot of calls. But if you call or text her personal phone you will get through to her more quickly; there are fewer calls or texts to that phone. We nod and continue to walk with her.

We ask what our group can do to have these code violations addressed. She explains that she can only cite the owner, since she's not a judge. "My job is to make a decision if something crosses a line and should go to court. That's all."

"So, what about the violations we've collected?" I ask.

She replies, "If you want to be doing things, you need to look things up. A lot of what you want to tell us is in there already [referring to the city database]. And if it's in there, it's just more work for me. You also need to be sure you get it right. And it needs to matter. Safety matters. If it just doesn't look pretty, that doesn't matter. And it has to be the right time, not the wrong time. See, this house has peeling paint. I could cite that. But if I do, and the owner goes to court, he's just going to say that it's cold and he can't paint in the cold because the paint will peel. And that's true. So he won't get cited. And then nothing will happen. Because it's the wrong time."

Halfway down the next block she stops and points out another house. "Okay, a test for you—can you tell me what's wrong?" Les and Qing and I each begin listing things. She nods her head. "This is what you need to do. I saw your list before I came here. You can't just say everything's abandoned. So, it's abandoned. You've got to tell me what the violation is. And it has to be right." I ask her if using the 311 app is worthwhile, and she says yes, going on to explain how reports in 311 are routed to her. I ask her if sharing violations as we find them is worthwhile. She says maybe, if we learn to do it right. If we want to contribute and make things happen, it's our responsibility "to make it all fit and work the way it should," by which she means reporting the data. Les tells her that sometimes he just wants to look around and keep track of things before he tells anyone. She takes a pause, just looking at us. Then she responds, "That's good, because once you send it to me, I've got to do something about it. So if you don't want me to do something about it, don't tell me. If it's on my plate, I gotta serve it."

A lesson learned. Then she looks at me. "You gotta decide whose side you're on. Are you on the side of the university or him?" pointing to Les.

"I'm on his side," I stammer, taken aback by her directness.

"Uh-huh," she says, with doubt. "Well, you better be ready for the call."

“What call?” I ask.

She says, “Here’s what’s going to happen. You’re going to report something and it’s going to come to me and then it’s going to turn out that the house I just put a sticker on because you helped him call it in belongs to your president’s auntie, and now all of a sudden he’s in a fuss. And I don’t care about your president or his auntie, and so then you know what’s going to happen—she’s going to get a citation and then he’s going to call you. That call.”

“I’m okay with that, I’ll take that call,” I reply.

“Uh-huh,” she says again. “You have to think about that and figure it out. Y’all are going to have to figure it out, how you want to make this work.”

“What about this list?” I ask, referring to the code violations we’ve collected.

She replies tersely, “You keep making that list, and then you let me know what you want me to know about, when you want to let me know. And we’ll work on this.”

“Okay,” says Les. There’s a long pause, and I sense that we’re done, for now.

“I’m going to go,” she says. “I saw some things that I want to go back to and look at again.” Before she goes, she pulls out her business card and writes a number on the back. “That’s my number you can get through on.” She hands the card to Les. We thank her, and she walks back to her car.

When she’s out of earshot, Les turns to me with a grin and says, “Well, that turned out better than I thought.”

“Yeah, that was rough, at the start and the end,” I say, and Les laughs. We go our separate ways. Les walks back down the street in the direction of his house. Qing and I walk around the block, get into our respective cars, and drive back to campus.

The encounter had unfolded differently than I expected. It was strained, almost confrontational at the start. While the conversation warmed up as the day did, I was uncomfortable throughout. I wanted to advocate for the work Les and us had done together. I also knew that defensiveness would be counterproductive in that moment. After all, our goal was not to get praise for our data. Our goal was to bring attention to Les’s concerns and direct resources to support his work. What was most disconcerting—and yet most productive—was her questioning of my commitments. In that tension the encounter expressed possibility. For that span of two hours on a December morning, Les, Qing, Officer X, and I came together to engage

these conditions, to talk and act together. The awkwardness I sensed—that difficulty—was part of the work of institutioning.

Our encounters in the Code Enforcement Section offices and in the neighborhood were sites of design experiment in civics. In those encounters, the activities and outcomes of designing collapsed: we were simultaneously making and inhabiting the effects of that making. These encounters ushered us, collectively, into different modes of togetherness. These different modes of togetherness were accompanied by different, unfamiliar practices. The conversations were open and at times unsettling. Throughout, we questioned and prodded, even as we too were questioned and prodded and had our convictions and positions interrogated. In those unsure and awkward moments, through those lived experiences, we were exploring our own and each other's boundaries, our own and each other's obligations and desires, listening for opportunities to shift into new configurations; and also, in some moments, guarding existing configurations against any such shift. The work of institutioning is achieved through such encounters and conversations—"not only challenging what exists, but also constructing new articulations and new institutions" (Mouffe 2013, 11).

### **Navigating Institutions**

A common way to define an institution is as "the rules of the game"—the conventions of doing things (North 1990). These conventions are expressed through all manner of structures and procedures, including those of the state, civil society, and culture. Scholars often differentiate institutions along disciplinary lines. For instance, one might talk of economic institutions or political institutions (see DiMaggio and Powell 2000; Powell and DiMaggio 2012). The approach to institutions within design discourse, however, tends to be conceptually and empirically messy.

Gretchen Helmke and Steven Levitsky (2004) differentiate between formal and informal institutions, and this is a helpful distinction for understanding the varied types of institutions and activities of institutioning. For Helmke and Levitsky, institutions are "rules and procedures (both formal and informal) that structure social interaction by constraining and enabling actors' behaviors." Informal institutions are "shared rules, usually unwritten, that are created, communicated, and enforced outside of officially sanctioned channels"

(2004, 727). Helmke and Levitsky go on to offer a schema for informal institutions and categorize them in relation to the effectiveness of the formal institutions they interact with. Using this schema, we can more thoroughly describe and interpret the work of the *Careful Coding* project.

Our activities with Les were attempts to stitch together informal and formal institutions. But it can be difficult to categorize whether a given institution is effective, because what it means to be effective may vary by constituent. The effectiveness of an institution may also vary considerably in relation to external factors. From the perspective of the local government of the city of Atlanta, the Code Enforcement Section may be effective: infractions are steadily identified and enforced across the city. Just because some cited infractions are not acted upon is not necessarily the fault of the Code Enforcement Section, as the responsibility could fall on others within the municipality, such as the courts or the Department of Public Works. However, for Les, there are dozens of infractions that seem to go unnoticed and persist for months, even years on end. And for Les, the rate at which citations are issued and acted upon is inadequate.

One way to describe what Les was trying to achieve—and what we were attempting to facilitate—is the making of complementary informal institutions that “‘fill in the gaps’ either by addressing contingencies not dealt with in the formal rules or by facilitating the pursuit of individual goals within the formal institutional framework” (Helmke and Levitsky 2004, 728). Our collection of data was intended to provide a resource on violations that may have gone unnoticed and where the Code Enforcement Section was lacking. Les’s practice of regularly canvassing the neighborhood produces data with distinctive timeliness and insights grounded in local knowledge. This data and insights would otherwise not be accounted for. This pursuit, in turn, also serves Les’s broader purpose to use Block by Block to sustain the neighborhood for its current residents. By working in relation to the Code Enforcement Section—as a counterpart to and supplementing their efforts—we are able to leverage their capacities to effect the desired material change in the neighborhood, while also affecting Les’s desires for care.

At the same time, there are some rules and procedures Les does *not* want to participate in. Another aspect of this work involves designing ways to change the terms of participation—or ways to not participate at all. Refusal is also a legitimate form of action, an increasingly important act with regard to data and civics (Costanza-Chock 2020). Rejecting participation is most

apparent when Les chooses not to document (and thereby not to report) certain squatters, junk vehicles, and overgrown yards out of compassion for his neighbors. In these cases, we are crafting an accommodating institution by behaving “in ways that alter the substantive effort of formal rules, but without directly violating them, that contradict the spirit, but not the letter of the formal rules” (Helmke and Levitsky 2004, 729). It is not that we are violating the law by not reporting such occurrences. Rather, we are choosing not to report these occurrences—and designing features into the tools that enable us to intentionally make that choice—because we want to avoid the prescribed institutional response if we do report them. These choices and actions rework the relations between Les, the officers, and the Code Enforcement Section. Refusal becomes a means to dispute and dissent from official policy and procedure, but without direct confrontation. This eluding of direct confrontation is strategically important because it is not that Les wants to do away with these institutions; rather, he wants to engage them differently.

If institutioning involves moving between and interweaving the insides and outsides of organizations, regulations, and routines, then we can interpret the choice not to report certain violations as moments when Les moves outside of the formal institution. He is leveraging the informal agreement that if you don’t want something acted upon, then you don’t report it. We can take the metaphor of weaving further; the idiosyncrasies of Les’s data collection and reporting might create a different pattern or welt in the fabric, but they do not unravel it. Such alternative procedures work in part because of the unstated but understood acceptance of this practice across institutional contexts. The code enforcement officer expresses the possibility of such passive manipulation by stating the formal rules and procedures, and providing an opening for acting otherwise: “So if you don’t want me to do something about it, don’t tell me. If it’s on my plate, I gotta serve it.”

In this encounter, we also witness the code enforcement officer herself interweaving the formal and informal. She too is trialing different configurations of resources and modes of engagement to achieve her ends. Her institutioning is just as significant, just as constitutive as ours. The informal use of her personal phone as a workaround is an example. The official way of contacting her remains intact. It works because there is a number a person can call that will provide an opportunity to leave a message. But she has also chosen to establish an alternate mode of engagement that is

more direct and likely to initiate a faster response. She grants greater privilege to some people by giving them a prioritized way to contact her. At that moment when she gives her personal number to Les, something very important occurs. They establish a different configuration of relations by opening a passage between the formal and the informal that makes possible another set of opportunities for action.

Oftentimes, stories of designing are written as if the designer is outside of whatever they are affecting through their practice. Throughout *Careful Coding*, we—as designers—were enrolled into these engagements. In these endeavors of democratic inquiry, the formal and informal institutions of design and academia become part and parcel of the experiment. For Les, working with the university brought access to resources. Some of those resources were knowledge resources, like the know-how of working with data. Other resources were material resources, such as access to digital tablets and Wi-Fi hotspots. Still other resources were relational, such as reputation and status. For example, when Les asked us to reach out to the Code Enforcement Section and share the data, and then meet with their leadership, he was leveraging the reputation that we carry as university designers and researchers to create an opening that he and Block by Block could potentially move into. When the Code Enforcement Section leadership arranged for Les and a code enforcement officer to meet, they were constructing alignments between the university, city government, and residents. When the code enforcement officer walked with us through the neighborhood—training us in observation—she was creating new resources for her work. Throughout all of this we were, collectively, generating diverse registers and vectors for civics.

When the code enforcement officer questioned me, she brought forth a distinctive character of these design experiments in civics: the need to declare and inhabit a position, in recognition of my own institutional and intersectional subjectivity (Fox et al. 2020). Her question, “Whose side are you on?,” demanded that I take a stand. The hypothetical situation she conjures—reporting a violation that results in a citation of the university president’s aunt—speaks to a bundling of power, place, and race in the city of Atlanta between government, the university, and residents. In posing that question, she is asking me to consider the potential consequences of our collective actions, and in light of those consequences to articulate my commitments to both Les and her. These commitments are informal—not written down or codified in a signed memorandum of

understanding—but nonetheless they are essential to establishing a foundation for ongoing collaboration. This orchestration of expressed obligation was meaningful because it was an act of informal institutioning. In that moment I was asked to make a commitment that was more than the project.

The agonism of that moment made the design experiment a site of contest and offered the potential for a minor transformation of civics (Lenskjold, Olander, and Halse 2015). Theories of agonism argue that democratic pluralism demands contestation, and part of the democratic condition occurs through such encounters (Mouffe 2013). But it is commonly assumed that the design is the provocateur, the enabler of agonism. In some cases, that is certainly the case, since one role for designing is to create spaces and conditions for agonism to manifest (Björgvinsson, Ehn, and Hillgren 2012; Kruff 2020; Sawhney and Tran 2020). But the designer—both the subjectivities and institutions of design—can also themselves be subjected to contestation, questioning, challenging, resistance, and refusal. In the encounter with the code enforcement officer, it is she—in her institutional and intersectional roles and responsibilities—who turns the table to question my actions and commitments as a designer. In that moment, what unfolds is what Huybrechts and colleagues (2016) refer to as an agonistic dialogue. In that dialogue the designer works to “promote dialogues that give room to doubts, conflicts, and disagreements” (103). But those doubts, conflicts, and disagreements are also and importantly directed back at the designer and the institutions of design. Contestation, then, is not just expressed by design toward others—it is a mutual happening (Mollon 2019). Contestation is also directed toward the designer and the institutions of design.

Design experiments in civics thus demand that we abandon any pretense that design is neutral. We should question discourses and practices that set design outside of the context of its work. Any such positioning, at least in these experiments, is contrived. The civics we are contributing to are civics we are a part of, and that communal aspect is part of what makes this work a practice of democratic inquiry. As designers and members of the institutions of design, we are enrolled into the procedures and politics of civics. We, along with the tools, processes, and data we have made, become entangled in the experiment, and in the tentative civic conditions we have sought to manifest together (Agid and Chin 2019; Fox et al. 2020; Steen 2013; Teli et al. 2020). While such perspectives echo participatory traditions

and are found in emerging practices such as design justice (Costanza-Chock 2020), they are still distinct from, even counter to, the positionalities and subjectivities espoused by frameworks such as design thinking, which hinge on problematic notions of empathy (Bennett and Rosner 2019; Irani 2018). At the same time, we must acknowledge that our participation and roles may not be the same as others, and participation is not uniform or assimilationist. To claim that the same meaning is made and experienced for all would do violence to those differences that matter. For instance, after our encounter with the code enforcement officer and Les, Qing and I drove back to the university. The university is a place with very different relations to power and is an institution that has attempted to subjugate the very neighborhood where we had just been. It is important to acknowledge that while we are contributing to and participating in diverse civic relations, we do not all inhabit or experience those places and affairs in the same way.

### **Design Experiments as Pathways through Institutions**

As a practice, institutioning does not necessarily change the scale of the work. The *Careful Coding* project remains a project “in the small.” Our work engaged with a single resident, a single department within municipal government, and a handful of civil servants. Rather, institutioning changes how we situate the work, what it is placed in relation to, the breadth and diversity of those enrolled, and the extent of the associations. *Careful Coding* involved multiple subjectivities tentatively defined by geography, interest, and practice. It employed devices, data, and different organizations that formed a collective of civic institutions, composed of myriad relations. But like the commons, a collective is not inherently something “good,” “civic,” or “democratic.” What distinguishes a collective is the character of relations within it and the experience that unfolds as we move through it. One thing design experiments in civics do is craft alternative pathways for moving through collectives of institutions, enabling and trialing different experiences of civic action (Buchanan 2019). Of course, we cannot move through these collectives seamlessly; there are barriers and constraints to institutioning (Foth and Turner 2019; Lodato and DiSalvo 2018). Part of the work navigating institutions, of crafting alternative pathways, is working in relation to those barriers and constraints.

Design experiments are never conducted alone, they are inherently cooperative. It is not designers who lead, but rather, we work together with those



who face these issues, recognizing their already existing ways of working (Costanza-Chock 2020, 92). As with so much of this inquiry, the concept of the cooperative experiment finds inspiration in the work of Jane Addams and Hull-House, over a century ago. As Matthias Gross (1999) explains in his analysis of the cooperative experiments of Jane Addams and Hull-House, such experiments sit between knowledge production and application. They also straddle site-specific conditions of fieldwork and controlled conditions of the university. As such, cooperative experiments move between and weave together those institutions. Part of those institutions involves the subjectivities of those involved. But whereas the previously described design experiments in civics sought to craft subjectivities through stories or explore those subjectivities through the making and use of devices, these subjectivities are enacted in context. They are not rehearsals. They strive to be, as Marilyn Fischer (2013, 229) describes Addams's work, "an experiment in real time of the process of democratic, pragmatist political reconstruction." Moreover, experiments are cooperative to the extent that they are undertaken by more than just the designers. Though Les, the code enforcement officer, the Code Enforcement Section, myself, Amanda, and Qing each approached the event differently, it was an experience of conjoined imagination (Binder et al. 2015; Dixon 2018, 2020; Steen 2013). It was not an experiment on others, but with others (Gross 2009, 89).

Practices of making are crucial for democratic experiments, when we consider institutioning from the perspective of design. As designers, we tend to approach situations through making, even when those situations are encounters, dialogues, or other forms of living. For instance, the encounters described in this chapter as part of the *Careful Coding* project did not occur accidentally. They were outcomes of opportunistic engagements prompted by ongoing practices of designing processes and tools for data collection. Data and tools were both conduits for and the content of these experiments in civics. They were devices of inquiry into the procedures and relations of civic institutions that enabled us to enact diverse civic subjectivities in situated practice. Through them, we could ask questions about, enter into, and move through processes of governmentality.

Data was the initial impetus for our collaboration. It provided entrée to code enforcement, which prompted the encounter with the code enforcement officer. The presentation of data was made possible through the design of processes and tools for its collection. Of course, the data was questioned.

Much of it, we were told, was duplicative, some of it incorrect. Nonetheless, it influenced the Code Enforcement Section to open a more sustained conversation. We moved next to an encounter between a code enforcement officer, Les, and ourselves in the neighborhood. Through that conversation, the data was again questioned, and we were schooled in the rules and procedures of correctly categorizing infractions. Despite the tensions, the code enforcement officer did not dismiss our collective and ongoing work. Rather, I viewed her provocations as an acknowledgment of the endeavors of participation, and an invitation to continue to move together through these institutions.

The activities and outcomes of making the tools and data enable us to enter and navigate processes of governmentality in distinctive ways. The processes and tools we designed with Les enabled him to retain control over what was shared, how, and with whom. This is a different type of control than is possible with civic tech platforms like 311 or SeeClickFix, which route information directly to the city government or a third-party intermediary. The codification of participatory refusal enabled by these tools and processes is an alternative to the procedures of code enforcement officers, which require particular formalities in categorizing and documenting conditions, and follow established response sequences. Throughout our work with Les, we have emphasized designing systems that strive to enable Les and those other residents he works with to retain their agencies in their community. Reporting code violations is usually in the hands of an officer. In the model we developed with Les, the resident has the authority to decide what warrants action by the city government and what does not. Their choices in reporting data are informed by their values that prioritize the collective well-being of their neighbors. We might label these values as autonomy and justice. Inspired by the work of Nassim JafariNaimi, Lisa Nathan, and Ian Hargraves (2015), we can see these values as propositions for how to care for their neighborhood. The tools, data, and encounters manifest these values, providing the capacity to experience these propositions. Those data and the tools, then, are a means for experimenting with different configurations of action and authority; those experiments unfold through encounters; and those encounters tread and leave traces of different pathways within, across, and between civic institutions. At the same time, these endeavors are about more than data: they comprise what Rod-eric Crooks and Morgan Currie (2021, 1) call agonistic data practices that

“mobilize the antagonisms that motivate people to act, to imagine alternative political arrangements, and to contribute to long-term collective action.”

In this democratic inquiry, the collective experiences of those involved come to the fore to give substance and form to the experiment. Each encounter becomes a propositional touchpoint—a marker for referencing how relations might be differently configured. They are moments we can recall, processes that we can revise and repeat, with data as a residue. Over time, as we move through, across, and between these institutions together, we create more touchpoints that mark out different pathways. These pathways, then, are both the site of the experiment and an outcome. Similar to the work of exploring diverse subjectivities, these experiments are about imagining shifts in identities and practices. Similar to devices of inquiry, these experiments unfold through the making and use of artifacts and systems that enable us to materially probe practice and theory. Building from this mode of democratic inquiry, the ongoing experimentation of *Careful Coding* enacts these efforts in situ; what is imagined is also experienced over time—not just momentarily, but through extended engagements. Even as these encounters are tentative, contingent, and partial, even as these pathways between and through institutions may be meandering or oblique, they are also vibrant. In these encounters, we collectively experience a mode of shared governmentality—“in the small,” to be sure, but also with an awareness of the potential for a more expansive field of togetherness, toward more diverse civics.

## Design Appendix

**Design Concept:** Amanda Meng, Les Canty, and Carl DiSalvo

**Data Processing:** Amanda Meng

**Data Tools:** Michael Koolhang, Qing Tian, and Nick Tippens

Design of digital and paper-based tools for data collecting, including scripts for processing photo (Koolhang), forms for field data collection (Tian and Tippens), and paper maps for use in field data collection (Tian).