Parody in Place: Exposing Socio-spatial Exclusions in Data-Driven Maps with Design Parody

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ABSTRACT
This paper describes the development of Parody in Place, a project that uses imitation to depict Seattle neighborhoods with typographic arrangements derived from data generated by technology platforms such as Yelp and Zillow. The project invites inquiry into what technology corporations make matter and where in ways that challenge the neutrality of neighborhood-based data. We designed the subject of our parody, a mock company called Dork Posters, to explore how the modes of caricature by which the system operates expose socio-spatial exclusions both contested and propagated by digital platforms. Our interventions reveal shifts in response toward mapping techniques, from ambivalence to curiosity. We used Dork Posters to question reductionist techniques of data aggregation and ad hoc theories of data provenance. Our engagements also prompted reflection on the politics of measurement: how data sources shape resulting insights and valuations. We end by discussing possibilities for expanding the design research program within human-computer interaction through parody.

Author Keywords
Parody, mapping, typography, design research.

ACM Classification Keywords
K.4.0 Computers in Society: general.

INTRODUCTION
Across history, maps have both revealed and inscribed key relations of power, from what terrain could be occupied by an enemy, to what foreign area may be navigated in order to maintain control over it [22]. Theoretical and empirical investigation of cartography has pointed to important relations between the geographic imagination, sociotechnical knowledge practices, and social change. These dynamics emerge, for example, when designers trace patterns of pedestrian movement to highlight techniques of mobile surveillance or to invite forms guided wandering [20,53]. Disrupting established relationships between mapping and power — from Guy Debord's [13] social critique of movement in public space, to critical interventions in geographic information systems (GIS) and locative media (e.g., [20,56,58]) — mapping tools have helped question the regulation and regularization of geographic space.

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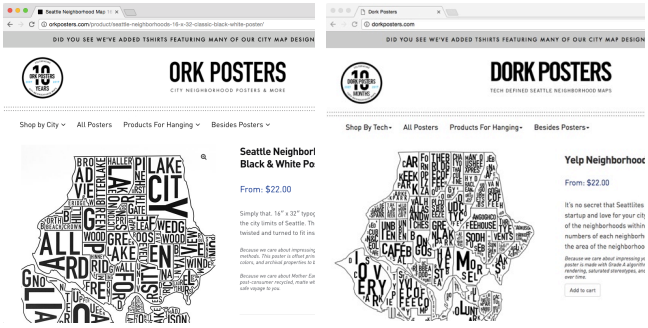

Figure 1: Ork Posters (left); Our Dork Posters design parody based on Yelp's "best match" data (right).

The study of socio-spatial difference (gender, race, class, for example) within emerging digital platforms poses important challenges for the field of human-computer interaction (HCI). As mounting data archives associate with geographic space, they become increasingly difficult to interpret, occluding key data sources and logics of operation. They also advance a form of measurement that feminist scholars Lucy Suchman and Donna Haraway have cast as the "God trick" of presenting a view (or design) "from nowhere," a phrase adopted from Thomas Nagel to describe a distanced form of scientific inquiry [25,42,62]. Exploring assumed equivalences between data and fact, HCI scholars have begun to question the underlying curation of their archives and data sources [47,50].

Alongside emerging issues of data aggregation, curation, and mapping, HCI scholars increasingly look to the arts to develop new approaches to meaningful insight and discovery [14,31,52]. Design interventions by Blythe et al. [7], Wilde et al. [65], and Yu and Nam [66] show how humor, imitation and satire may organize silicon and bits in strikingly generative ways, prompting humorous reflections on what kinds of design projects and what sorts of aesthetic cultures digital designers find worthy of attention. Building

on these HCI experiments at the nexus of improvisation and critique, we explore alternative forms of engagement that cast predominant modes of data-driven mapping (visualizing data associated with geographic locations) as opportunities for reflection and critique.

This paper explores the development of *design parody* as a design research technique and how it may invite forms of investigation otherwise elided. We define design parody as a critical idiom through which designers may imagine and realize stylistic imitation (e.g., through visual media, interaction design, print media, performance, etc.). Drawing together studies of data-driven mapping with expanding programs of design fiction, we developed a project called Parody in Place that uses a fake business called Dork Posters to explore socio-spatial exclusions both contested and propagated by social media platforms. Dork Posters is a series of satirical marketing materials — website, posters and business cards — that imitates Ork Posters, the Chicago-based design company that popularized typographic neighborhood mapping techniques [21]. Referencing online word clouds, our project expands Ork's original focus on different cities (Chicago, New York, San Francisco) to include their representation within digital platforms (Yelp, Zillow and Car2Go). Maps for each platform represent particular Seattle neighborhoods with typographic arrangements to invite inquiry into what technology corporations make matter and where. Using design parody as a tool for inquiry, we highlight two key dimensions of this interrogation of data-based mapping tools through Dork Posters: (1) its distortion of known forms of neighborhood-based data aggregation and circulation; (2) the reductive quality of data representation that it deployed, using parody as a mode of examining its particular aesthetic of commodification (sleek, minimalist, bold, authoritative mode of presentation). By tracing the project's development, we explore how design parody may meaningfully extend HCI's techniques of design research.

LITERATURE REVIEW

In the sections that follow we describe the three central conversations to which our work contributes: design developments around parody, studies of data and power, and interventions in cartographic mapping.

Parody by Design

Parody as an artistic or literary genre makes use of an existing style or set of conventions for one's own purposes, inserting new meaning into a discourse that is opposed to the original. The newly inserted intention exaggerates or clashes with the original to provoke a particular effect, which can be comedic, critical or some combination of the two [3,30]. Humor then plays a variable role in parody, with different "degrees of biting," as poet Max Eastman describes—from teasing to fury [19:236].

Accounts of parody, imitation, and hoax are visible but often unevenly acknowledged within much of technology scholarship. A now robust tradition of design fiction celebrates demonstrative inventions that allow people to speculate and suspend their disbelief about potential futures. Often traced to the science fiction author Bruce Sterling, design fiction has taken root in HCI research of myriad forms, from paper abstracts to gaming [6,29,36,59,60]. This work extends programs of critical design [17,18] (that draw from the early parodic experiments of Dadaists, Futurists, Fluxus artists, and the situationist and surrealist art movements) and overlaps with traditions of tactical media [9,49], research through design [24,67], and ludic design [23]. By building surprising and humorous design artifacts, designers can elicit insights into the contradictions and ironies underlying technology design.

This trend is especially visible within traditions of design activism. The anti-corporate publication Adbusters, for example, critiques consumer culture through the transformation of mass media messaging [9]. Online memes similarly operate as forms collaborative, user-generated imitation, while fake news—media resembling mainstream reportage, but with false or misleading content—are circulated with the intent to misinform audience members [34]. In recent years, this observation has inspired artists to embarrass otherwise powerful cultural actors by exposing their underlying cultural, economic, or symbolic techniques to ridicule. Guillermo Gómez-Peña helped develop "living museums" that imitate conventional museums while exaggerating their colonial legacies through practices of representation, a practice known as "culture jamming." Members of the renowned artist group "The Yes Men" suggest that this and other modes of parody work more effectively when the impersonator says "things they [the impersonated entity] *would say* if by some miracle they decided to do the right thing" [9: 60]. For example, the Yes Men's impersonation of Dow Chemical on the twentieth anniversary of the Bhopal disaster (a catastrophic gas leak in India) humiliated the company when the activists (representing Dow) declared they would take responsibility for the tragedy.

Within HCI, a small but longstanding tradition of exploring magic, silliness, and absurdism has sought to use parody to undercut prevailing design shortcomings, such as focus on

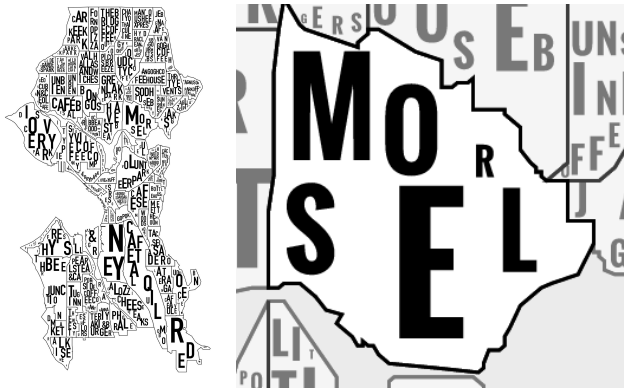

Figure 2: (left to right) Our Dork Posters map of Seattle, WA based on Yelp's "best match" data; a close up of the café Morsel depicted as a "best match" for the University District.

efficiency or techno-determinism. Blythe et al. contrast an orientation toward satire with solutionism, the search for technological ends for non-existent or technologically irrelevant problems [7]. Danielle Wilde's [65] project HipDisk uses the "ungainly" awkwardness of a wearable instrument designed to respond to hip movements to question the forms of embodied interaction designers find deserving of augmentation and engagement. A key inspiration for our project is Re Made Co [40], a parody of Best Made Co., a company selling axes to city dwellers. Artist Rebekah Modrak created Re Made to challenge the appropriation of working-class identities and the revitalization of traditional notions of masculinity carried forward by lifestyle companies like Best Made. But rather than a $300 axe, Modrak's artwork presented a $300 toilet plunger. The parody extended to the website, social media, and even visual media of Best Made's marketing material. Re Made Co became a way to "reassign value" ascribed to the urban woodman design aesthetic, a white-collar fantasy entangling masculinity with nature.

Collectively, this work suggests important connections between the legacies of artistic parody and emerging traditions of design fiction. The projects described above each disrupt authority through (often ephemeral) interventions with artifacts and technologies produced and authorized by the very same bodies they wish to disrupt. In addition to critiquing the aesthetic style we borrow (Ork Posters), our work critically engages digital platforms (Yelp, Zillow and Car2Go), allowing our analysis to focus on the nexus of the two: the issues of data-driven mapping and socio-spatial difference that define them. Parody then works as a tool for exploring pervasive ideas of data and power.

Data and Power

Data and the algorithms that structure their use occupy an increasing space of concern within and without the field of HCI as scholars point to the social and political nature of their production and curation [8,37,50]. Pine and Liboiron look to both "practices and premises of data creation" [47: 3147], as well as how particular, charismatic measurements are leveraged by advocates and activists to push for change. Further, Passi and Jackson put forth the notion of *data vision,* or an understanding of the work of data analysis that is rule-based, rather than rule-bound—highlighting the situated, discretionary and creative practices data analysts take to make the world conform to abstract categorization [45].

However, unearthing such data vision may not be sufficient. Recent work within critical data studies warns that having full access to proprietary information (e.g., how algorithms are formed and data handling practices) may produce a "transparency paradox" [44] by not necessarily ensuring that anyone can read data processes or predict algorithms behaviors. Scholars such as Kate Crawford [12], instead, call for directing attention toward the ways algorithms contribute to and participate in wider capitalist logics and occupy spaces of conflict, where developers and users alike debate, game or otherwise contest how they operate. Moving critical engagement to design, Khovanskaya et al. describe their interrogation of social matching algorithms through the development of a Firefox plugin, which itself performs content-based semantic matching among its users—ultimately revealing the dominant contemporary discourses that shape system design [33].

We draw from and extend these traditions through *infrastructural inversion*, or what Geoff Bowker and Susan Leigh Star have called "the depths of interdependence of technical networks and standards, on the one hand, and the real work of politics and knowledge production on the other" [8:34]. As we describe below, our design processes helped us examine the contexts of development, use, and appropriation generating seemingly inevitable socio-spatial rule-sets.

Mapping Otherwise

Dourish describes space, as well as place, as a social product [16], echoing feminist critiques within the fields of geography and architecture that argue space perpetuates inequity and express the potential of appropriating and reorganizing space toward transformative ends [39,64]. In her analysis of the political significance of space, for instance, geographer Doreen Massey describes "cartographies of power" [38:18] or a conceptualization of space as a product of interrelations, plurality and continuation. Here, space is not static or neutral, but rather invested and contingent—made and re-made by networks of dominance.

Traditions of radical- and counter-cartography bridge practices of art, geography, design and activism in order to provoke new understandings of power, place/space, and modes of resistance. In their *An Atlas of Radical Cartography*, editors Lize Mogel and Alexis Bhagat assert, "new perceptions of the world are the prerequisites of social change" [41]. One map from the collection depicts the ever shifting territory of the EU border regime, displaying legal or illegal passage, deportation to "safe" third countries, registration systems and detention centers. Meant as "organizing nodes", these maps have the "goal of deepening and advancing struggles and creating new subjectivities" [11:64]

Within HCI and design, mapping experiments have proved particularly fruitful in helping analysts make sense of hierarchies of knowledge. In 2001, for example, the anonymous Institute for Applied Autonomy released iSee, an online mapping visualization of New York City's expanding CCTV surveillance network that generated walking routes along "paths of least surveillance" [32]. Five years later, the "Loca: Set to Discoverable" project sent text messages to people's phones according to analyzed Bluetooth signals (e.g., "you were last here yesterday at 21.45") [20]. By visibly tracing people's patterns of movement, the project progressively called attention to the mobile surveillance networks they regularly populate. Both works present compelling critiques of post-9/11 debates around security versus

privacy by revealing the often difficult to see of technologies that trace our movements.

Beyond GIS and data based mapping, prior work in HCI has established the surprising utility of busy typographic layouts such as 'word clouds' for animating discussion and social engagement [27,63]. Theoretically, word or tag clouds — visual representations of texts that adjust font size or color based on the importance of each word — introduce challenges to information comprehension by automatically giving long words more emphasis over short words and relying on visual qualities like font size for comparison. In practice, however, scholars have shown how word clouds connote online activity, providing potential openings for engaging with complex or difficult content [28].

With Dork Posters, we drew from these traditions of alternative mapping and explorations in typographic layouts to highlight each platform's role in defining socioeconomic divisions across the city of Seattle.

OUR PROJECT

We designed Dork Posters with the aim of inciting critical engagement with neighborhood-based data by harnessing the idiom of design parody. We hoped to examine the relationship between technology platforms and socio-spatial difference, while offering moments for reflection on how data sources shape resulting insights and valuations. We especially wanted to investigate how design parody could operate as a tool for engagement with digital designers on topics such as racial inequality. We hoped to build a mapping tool that might challenge the taken-for-granted character of geo-spatial data generated by pervasive social media platforms, particularly within our local city.

Methodology

With this study we aimed not to develop a product or solution but to critically examine possibilities for using design parody as tool for inquiry. Towards this aim, we drew from the anthropological notions of studying "up" or "sideways," practices of conducting research with groups demographically similar to oneself in order to gain insight into the bureaucratic structures and practices (in this case, of designers and technologists) that are otherwise occluded when exclusively studying those affected by their policies (in this case, the user). We understand that the depth of our single case comes at a cost in comparative-breadth, but we believe that this tradeoff is worthwhile and central to our design inquiry approach, borrowing most notably from traditions of *infrastructural inversion* [8] and techniques of *design fiction* [5,7]. Together these research orientations (further detailed in the previous section) foreground the generative entanglement of both "real" and "fictional" functionality (see [51]). With our resulting approach we hoped to build a concern for racial and socioeconomic inequality amid digital design cultures to invite questions of neighborhood-based data: What does socio-spatial data look like? What socio-spatial exclusions do digital platforms sustain? What does this data say about my neighborhood or city?

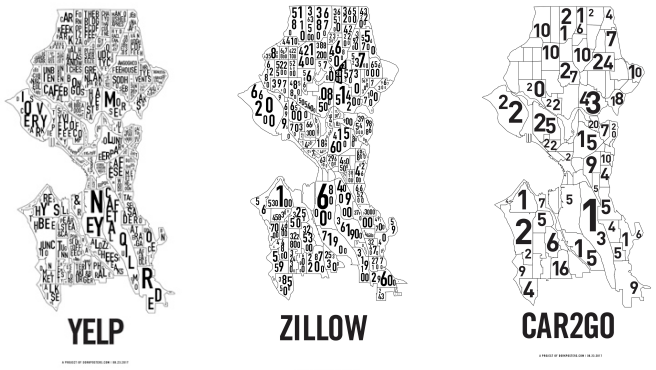

Figure 3: Our three Dork Posters (without racial gradient).

Data collection and analysis

Although we largely borrow from design research approaches that emphasize openness over repeatability or falsifiability, our work included interpretive techniques of data collection and analysis. We documented our process of creating and sharing Dork Posters with a range of fieldnotes, audio, video and images. We later analyzed relevant episodes thematically based on how they shed light on the socioeconomic and racial inequality in the city. Drawing on inductive techniques [10], we developed reflective memos based on our analysis and iteratively refined our memos to develop emergent themes (tactics of suppression, imaginative theories of data provenance, and reductionist readings versus reductionist renderings).

Before we turn to the particulars of our project, our own subject positions deserve brief mention. Two of us identify as design researchers and have degrees in design-related fields. Our professional affiliation and connected social status was tied to our ability to conduct research in the settings we discuss below. Our ensuing insights were thus highly situated, shaped by our positions at the University of Washington and the elite networks we traversed.

Dork Posters

Dork Posters is a fake business that includes a website, posters and business cards. The design parody imitates the products and marketing materials of Ork Posters, a Chicago-based poster company that uses typographic mapping techniques to visualize neighborhoods within predominantly North American and European cities. Ork's static maps depict each neighborhood using the text of the neighborhood's name (see Figure 1). For example, determining that Seattle's Fremont neighborhood is the shape of a triangle, it places the seven letters making up the word "FREMONT" at different sizes within the triangular shape.

Like Ork Posters, Dork Posters depicts small typographic compositions in the shape of city neighborhoods. Unlike Ork Posters, however, our project automatically populates those typographic arrangements according to data associated with neighborhoods within the city of Seattle, Washington and generated by Yelp, Zillow and Car2Go. Yelp is an online consumer rating service that describes and hier-

archizes commercial establishments and associated neighborhoods according to the assessments of participating users. Zillow is an online real estate corporation that gives value estimates of homes as well as associated data (aerial views, prices, square footage). And Car2Go is a car-sharing service that enables online reservations: a user may open an app-based map displaying vehicles parked on nearby city streets and select one to reserve for a particular duration of time. We chose each of these platforms due to their emerging entanglement with our questions of socio-spatial difference (outlined in more detail below).

Drawing from word and tag clouds, the typographic technique produces a lively—though not immediately legible—neighborhood map that leverages the social vibrancy afforded by a mixed treatment of typographic compositions. Each neighborhood contains a single word visualized at the size of the neighborhood geography. We visualize Yelp's "Best Match" algorithm, which ranks businesses within a certain area; Zillow's "Z-Estimate" algorithm, which offers an estimated market value for residential property; and, in an initial version, approximated Car2Go's car location algorithm (via manually generating the data), which represents the number of cars available for rent at a given location. The Dork Posters website has four key parts:

1. **Home Page.** Through logos, imagery and language, the home page depicts Dork Posters as a poster company selling "Tech-defined Seattle Neighborhood Maps."
2. **Sales Page.** Drilling into each of the digital technology platforms reveals unique interactive maps.
3. **Racial distribution button**. A button that toggles the display of a background gradient on the interactive map that depicts the white/non-white makeup of the city.
4. **Metadata.** Selecting neighborhoods on the interactive map displays related meta-data.
5. **Add to Cart button.** A button that takes users to our email: hello@dorkposters.com.

Across the Dork Posters website, in addition to replacing Ork Posters imagery with our own maps, we shifted the language of Ork Posters to signal our parodic take. For instance, the tagline reads, "Tech-Defined Seattle Neighborhood Maps" (rather than Ork's "City Neighborhood Posters and More") and the main menu reads, "Shop by Tech" (rather than Ork's "Shop by City"). The text accompanying the interactive maps states, "It's no secret that Seattleites love their tech – decorate your love for your startup and love for your city with this poster," accompanied by a description of the types of data we pull from each service. Alongside the website, we produced print material for distributing at events: 4x3 foot posters and business cards with our Dork Posters website address and contact details (devoid of identifying information).

Layout Algorithm

Our mapping tool comprises a query for each Seattle neighborhood, a geographic map describing neighborhood boundaries, and a custom text-positioning algorithm that juxtaposes text inside of an arbitrarily-shaped polygon in a manner similar to Ork Posters. Our underlying layout algorithm works as follows:

- For each Seattle neighborhood, call the platform API for Seattle and receive a list of items (e.g., venues).
- Pick the first item (e.g., Yelp's "best match" for the neighborhood of Fremont "Art of the Table") in the list and apply the layout algorithm to that name.
- Fit the word or phrase into the boundary of the neighborhood, a group of rectangles that we use as "text boxes" to hold the characters of each word or phrase. We then split the polygon into cells that hold one letter.
- In an attempt to mimic Ork Posters — minimizing the whitespace left over after the entire word or phrase is juxtaposed inside of the neighborhood — we overlay a grid on top of each neighborhood with a cell for each letter and then fit each letter within its cell to maximize space covered by the letter. (See appendix for algorithm details).

The result is an interactive map that automatically imitates the typographic layout of Ork Posters' city designs.

DESIGN PROCESS

Before we explore how people engaged Dork Posters we want to trace our encounters with data, power and mapping that sparked our specific design. Below we describe the iterative process that set in motion our parodic project.

Initial Ideation

We developed Parody in Place (Dork Posters' website, interactive map, and marketing materials) in response to our engagements with digital platforms while traversing the city. Our first phase began with a review of the literature on data-driven mapping (see background section). This process resulted in design team members taking long walks through the city together, often drawing out their journeys by hand.

Figure 4: (clockwise left to right): Dork Posters Zillow map with racial gradient layer; Dork Posters business card; designer exploring Dork Posters at the interaction design event.

At one point we began using Yelp and noticed that its "best match" for the predominantly white, gentrifying neighborhood of Fremont was a high-end restaurant ("Art of the Table") whereas its "best match" for Rainier Beach, a largely working class neighborhood with a majority of non-white residents, was a free 20-acre Japanese garden maintained by the city ("Kubota Garden"). Some reviews of Kubota both praised the expansiveness of the park and complained of "sketchiness" and broken car glass in the parking lot. One representative review described the park as "beautiful," then adding "too bad the neighborhood is a bit sketchy." And some reviews reject the neighborhood altogether, such as one noting, "Kubota Garden should be your only reason for visiting Rainier Beach unless you know some one that lives here […]" The beauty of the Japanese garden was seen as an exception, rather than the rule.

From this glimpse of "best match" data we began to see what about each neighborhood Yelp's matching algorithm and Yelp users deemed worthy of attention. Our design sketches to date produced compelling imagery of the city, but few opportunities for engaging the relationships to the socio-economic and racial inequality in which it was implicated. We wondered how a simple data point such as a "best match" might in fact prompt reflection on the ways digital tools represent the spaces in which people work and reside.

Concept Refinement: Where On- and Off-line Maps Meet

As the team continued to investigate Yelp's representations of certain areas, Sarah Fox, the first author, set out to explore those areas of interest, meeting her friend Michael at the Kubota Garden one afternoon. He chose to reserve a car near his residence through the car rental company Car2Go. Michael described using the service easily many times before, mostly for traveling north to Ravenna or nearby big box stores. After driving a couple of miles south from his home, Michael's Car2Go began to beep. The display in the center console notified him that he was approaching territory *out of range for the service*. He turned the car around to find a parking spot just within the allowed area (about 2.5 miles from the garden).

After returning from the trip, our design team met to discuss these Car2Go neighborhood edges. How had they been drawn? By whom? And why this seemingly arbitrary geographic boundary (aligned with no particular state-driven regulation)? Compared against demographic data for the city, Car2Go seemed to circumscribe a socio-economic boundary: the median household income of Rainier Beach residents dips below the city-wide number by about $20,000 [48]. Was our city being redefined according to consumer potentials and our movement through the space forestalled along these same coded lines?

We imagined that Car2Go's decision could be based on perceived density, but this failed to explain why the company included other less populous northern neighborhoods in their map. Local accounts from the time echo this inconstancy, evidenced through screenshots of the service map featuring a line of cars along this southern boundary [4,68]. We found one article citing Car2Go's then Head of North American Communications Katie Stafford who explains their rationale for the exclusion, "Basically, the way it works is that in every city, we identify through market research where people are living, working and going to school the most. If it's a new and developing, area maybe that doesn't show up" [4]. Which, of course, begs the question "new and developing" to whom and toward what ends?

Of course the algorithms (or "market research") generated by Yelp, and now Car2Go, not only remained invisible to users but also shaped perceived neighborhood boundaries. Recognizing this, we wondered what it would take to make this power relationship more broadly visible. We began to sketch the "best match" venue so that it filled in the boundary of each neighborhood, becoming its representation on a map of the city. From this simple amplification, we began examining its limits: how Yelp propagates certain views of how its users make sense of the city. Noticing a visual resemblance to word clouds, we elaborated multiple ideas for rendering the relationship between emergent themes, settling on the idea of an interactive typographic map of the city. We saw this amplification as way to draw attention to the widespread lack of access to the proprietary mapping strategies that define these zones. It is this potential of identifying new lines of inquiry that we turn to next.

DORK POSTERS

Having described the initial development of our typographic maps, we now turn to the ways we continued to refine and engage our project as Dork Posters. In particular, we revisit our impulse while driving with Car2Go to consider algorithmic visibility through amplification and later parody. Specifically, we draw from our engagements at two gatherings of technology designers. The first account describes our debut of the mapping layout algorithm at an institute of data science. The second account describes our experience sharing the maps at a meetup for professional designers. As we detail below, each story invites new understandings of data-driven maps through the parodic encounter.

Refinement: Algorithmic Transparency

A few months on from our encounter with Car2Go, our research team was invited to share our typographic maps as a part of a meeting on the topic of "Algorithmic Transparency" at an institute for data science; a computer scientist studying data analytics presented just after us. To a room full of information scientists, communication scholars, computer scientists and physicists, we stepped through our design process (describing multiple iterations) and the mechanics of the working system.

During the presentation an audience member asked about the sorts of data we had access to and the particulars of the APIs. This question spurred a larger conversation on what exactly algorithms hide. For instance, though the Yelp API

allowed us to specify location parameters in order to return information about businesses within that range (including the name of the business, an image associated with the business, and so on), it returned only one review associated with each business. Researching this later, we found no information in the API documentation describing how this single review was selected. This was notable to us at the time because it allowed us to recognize concrete ways in which Yelp makes decisions behind-the-scenes that might affect the public image of a business or, in turn, the perception of a given neighborhood.

We later learned that in response to our project an attendee decided to focus his visualization classroom on questions of civic participation: inciting projects on mapping police brutality, environmental policy, and the economics of green building technology and technology automation over time. To those present at the event, our maps became representative of opportunities for change within and beyond the digital systems designed by companies like Car2Go.

Although we found this critical engagement exciting, we wondered how our discussion might travel further: reaching the technologists actually building these tools. We soon learned of an event to be hosted at a local Seattle tech company and took the opportunity to speak in a language they might hear. Through informal conversations within our own networks we learned that Ork Posters, a company with visualizations like ours, hung in the homes and offices of the very designers and technologists we hoped to engage. Ork Posters exhibited a design aesthetic that had already taken root in start-up lofts and tech meetups. By embedding our maps within the contours of Ork Posters—parodying their website, poster collection and business cards—we launched our project as a design spectacle ripe for interrogation [2].

Engagement: Design for Social Good

To exhibit and explore our design parody, we eventually joined members of a local interaction design group before a workshop on "making design actionable" hosted by the Seattle technology company. We hung up our posters, set up a screen with our website, and handed out business cards. The event was a part of an ongoing program on *Design for Social Good* that spanned several months.

Over the course of the evening, we interacted with a number of workshop goers, many of whom expressed both intrigue and puzzlement at the typographic arrangements. Almost as soon as we set up, Allen, a 30-something white man and director of a local design organization, challenged us to explain what product or solution we were presenting (if not posters, as he initially expected). While navigating the Zillow map, he took issue with the map's simplistic depiction of gentrification based on race (with the "racial distribution" gradient visible). "*There's more to this conversation*," he said, pointing to how this map may have changed based on where the light rail was built, what levels of education people had, etc. Allen then used Columbia City as an example of where one could chart the "Z-Estimate" over time and see how "*the moment light rail gets in there*" the property value may change, and start the process of gentrification. "*There's a lot more data, there's a million things to look at*," he explained. His insistence on this shortcoming shifted when we explained that we hoped to use this tool to provoke this very conversation. To this he suggested that we start a Slack channel to gather the conversation with the public more broadly.

Even in these early moments of presenting Dork Posters we begin to see a few central ways our design parody operated as more than décor. For starters, Allen's insistence that there was more to look at than racial demographic data sat uneasy with us. Although Allen did not directly reject our focus on race, his suggestion of "more data" and a broader "conversation," and his casting of the current Zillow map as somehow insufficient or inaccurate, had the effect of downplaying the importance of the racial data. He used the light rail to explain the cost of houses as an example of how adding new data sources could paint a potentially more accurate image of the city. Yet light rail was not just another data source; it was the key data source implicated in recent public narratives of gentrification across the eastside of Seattle. Racial data, on the other hand, received comparatively less attention. Arguing that the more data sources brought to bear on maps, the truer a story they would tell also rendered questions of *what* or *whose* data irrelevant. In a city comprised of majority white residents, Allen's comments revealed a tactic of suppression, a way of avoiding discussions of race without being explicit.

From the above episode we further get a sense for the ambivalence Allen felt at the genre of design parody itself. His initial expectation for a completed project rather than an opening for discussion resonated with his subsequent suggestion of gathering a conversation on Slack. Slack is a messaging tool popular within elite design and technology networks. Given that those networks are predominantly white, Slack represented another technique of racial invisibility.

But far from all of our conversations led to such techniques. Instead, the greater part of our encounters concerned questions of provenance: asking from where the data came. To get a sense for these engagements, consider the following exchange with Paul, a technologist, and designers Gabe and Lane.

> "*What do the letters represent?*" Paul asked. He had a puzzled expression on his face like he was straining to make sense of the visualization. We told him that it was Yelp's Best Match for each area. "*Let's see where's Central District? Met-Metta-Metta mon… hmm I don't know what that is*." We all leaned in, trying to make sense of the grouping of letters. "*How do they determine this?*"
>
> Lane, another designer standing by told him that it had to do with the ratings.
>
> "*Not exclusively*," researcher Sarah Fox added. "*It's not always the businesses with the highest score or the most reviews, it*

could be a number of things and in combination. We don't have complete access to the algorithm that generates each return."

"*What does the Zillow map show?*" Gabe asked.

"*The Z-Index*," Fox said.

"*It's the estimated median home value in any given neighborhood*," Paul informed us. Fox noted that just as we didn't know what precisely goes into coming up with the Best Match, we also didn't know what exactly was important to the Z-Index or the Z-Estimate.

Paul nodded, with a serious look on his face. "*What's this here?*" He was pointing to the bottom left corner of the map. "*Alki Sewer?*" he asked, referring to a local plumbing company.

"*Yeah, I think it is*," Fox said.

Huh," he responded as he walked away.

The above episode exemplifies some of immediate questions our parody provoked. Several people navigating multiple maps wanted to know more about the "Z-estimate" and "Best Match," asking "how do you measure what's most relevant?" One woman refused to accept that limiting a Yelp search to specific Seattle neighborhoods could produce a "Best Match," believing instead that some other category such as "Restaurant" had driven the query. Theories of data and algorithmic provenance were surprisingly precise and wide-ranging. They cast notions of data "transparency" as moving targets tied to user imagination.

We heard many of these ad hoc theories of data sourcing alongside simple expressions of familiarity. People read our maps as both general and personal. Consider, as a final example, how Drew walked through the platform as if tracing his experiences of daily life:

"*This represents me, yeah!*" Drew, another designer, exclaimed, pointing to the area on the Yelp map (Figure 3) that read "Magnuson Park Off-Leash Area." He and his dog frequented the public area, he explained. To the neighborhood just below his, "*Ah yeah. This wouldn't fly with the people here*." Switching between the Yelp and Zillow maps, he told us this was a very wealthy neighborhood and residents would be disappointed to see themselves represented by the local fast food chain Pagliacci's Pizza.

Still standing at the Yelp map, Drew began to speculate about how it might look in other cities. Growing up St. Louis, he told us the reviews he typically read were more concerned with portion sizes than they are in Seattle. Here, reviews are focused on "*quality*," he continued. A 3-star review there might be a 5-star here and a 5-star here would be a 3-star there. He turned to Paul, "*You just moved from Ohio, right? It's the same there*." Paul didn't say anything, just smiled, as they both stared at the map. Without context like that, it's hard to really know what the map is saying, you couldn't do a comparative across region, Drew insisted. After a brief pause, "*Oh, it's reductionist!*" Drew exclaimed. He smiled proudly like he'd solved the puzzle.

In the episode above, Drew's understanding of the maps shift upon continued viewing. He begins by focusing on his own experience, using it to create a non-trivial link between the Zillow and Yelp maps. He jests at the irony that a neighborhood with one of the priciest Zillow Z-Estimates also has as its Yelp "best match" one of the city's least-expensive restaurants, a pizza franchise. Navigating the site further, Drew then turns his attention to new data: voicing a concern over how the Yelp algorithm might apply to other cities, ultimately coming to the revelation that the platform is reductionist; it produces a limited view of the city. Drew thus uses a cross-city comparison to both uncover the reductive nature of existing mapping techniques and introduce *his own* reductive readings: understanding what particular city residents value based on broad speculation.

Across these encounters we see how parody cannot stand on its own. Allen, Gabe or Lane may not have recognized their unease or curiosity if we were not present to accept and engage their reflections. As we discuss further below, parodies create temporary openings for reflection on the locales and practices of digital design, but they must be coupled with other forms of interrogation.

DISCUSSION

This paper has so far described Parody in Place, a project involving both the development and sharing of Dork Posters. Along the way, our work has also modestly begun to reveal the potential of conducting research through design parody. The program of work this suggests — research *through* parody *through* design — points to the mounting complexity of design research techniques, while failing to capture the simple observation that design may operate in two distinct ways. On the one hand, design techniques of typographic arrangement and interaction work as *a means of rendering parody*. On the other hand, parodic techniques of imitation (outlined in the next section) operate as *a means of investigating technology design*. Amid our Parody in Place project we deployed design on two ends.

In particular, we developed the maps and accompanying mock business materials to create a sense of puzzlement and irony that would, in turn, invite discussion. Those who encountered the posters at design and technology networking events shifted from ambivalence to curiosity. They both surfaced concerns over the reductionist techniques of data rendering the maps presented, while introducing reductions of their own by reading into and across multiple maps. Visitors also offered their own ad hoc theories of the data's provenance, showing commitment particular understandings of algorithmic process (if only partially accurate).

To some, our work with Dork Posters could come off as trivial or even navel-gazing. After all, our design team built a system to engage an elite network of which we were arguably already a part. Were we just speaking to ourselves? As Mark Blythe has said, "For many cultural commentators satire does not challenge preconceptions or assumptions, it merely provides a safety valve for people that already agree with each other" [7]. Feminist and decolonial design studies scholars have rightfully thrown this and similar critiques at programs of speculative and critical design, challenging

their projection of a universal subject and deconstructing the designer as a white American or European [1,48].

However, as we have tried to show throughout our design process, it is this very critique of the unified design identity that our work has sought to extend. By parodying the style of the highly regarded Ork Poster, we trouble the universalizing vision of design—exposing the cracks and absences often left unseen under all the white space. Across our encounters we saw Dork Posters operate as more than a safety valve, toward a critical apparatus for reflecting on sociospatial difference. We were not speaking to other academics or cultural critics, but to design and technology practitioners — to the people who perhaps at one point took our classes, but who now had left the academy and inhabited the "real-world" of industrial production. In this sense, our project differed from critical design's traditions of satire sometimes characterized as the "enlightened designer" teaching the narrow-minded user [7]. We deployed design parody, instead, as a means of proposition and engagement, broadening the mechanisms by which we apprehend the political capacities of design [15].

Tactics of Suppression

Alongside our observations at the interaction design event, we learned of similar tactics of suppression through our own use of Dork Posters. The boundaries we butt up against in Rainier Valley did not begin and end with Yelp, Car2Go, or Zillow. Instead, they aligned with the racial makeup of the city and histories of segregation and white flight. We learned that active campaigns against racial restrictive covenants, mid-century immigration policy, and "urban renewal" schemes of the 1990s moved racially and economically diverse populations south to places like Rainier Valley [54,57], shifting the composition of the neighborhood from a predominantly white area in pre-segregation Seattle. By 2010 (just a few years before Car2Go's debut in Seattle), Rainier Valley would be named one of the most diverse neighborhoods in the country [54]. "Marketing" logics would re-inscribe these bounds once again to restrict movement via the rental car service. Only public pressure and city ordinances prompted expansion to this and other areas: the City of Seattle negotiating more parking permits (nearly doubling the original number) for southern and western coverage. In effect, the same techniques of diversion that restrict movement through a city along racial or socioeconomic lines may position designers as key contributors to silencing or suppressing such discussion.

Politics of Measurement

Critical data scholars not only call for the exploration of measurement — how data classifications may selectively help actors push for change or make the world conform to abstract categorizations — but also for the need to further engage the particular politics they expose. Drawing on Suchman [62], Bowker and Star [8] and others [50], our interventions have shown that rather than treat data as a neutral or raw resource waiting to be assembled, design parodies may expose how all data "demand and build the human, organizational, and infrastructural worlds around them" [50:164]. Our project, in turn, seeks to complement anthropological work examining the "logic that guides the hands" of algorithmic systems by engaging with the designers and technologists who produce them [55]. We invited designers to not only question reductionist (over-simplified) representations of neighborhood-based data, but also to examine how such readings can render their own reductive capacities. To borrow from Marylyn Strathern [61] and Donna Haraway [26], it matters what data make maps, and what maps make data.

Parody as Never Isolated

Although we have explored the potential for inquiry through design parody, we now consider what such parody cannot do. For us, parody operates as a technique of design but not one that guarantees change. It may create local and improvisational openings for discussion to be coupled with other forms of action — moving from what one might call *critique* to forms of proposition and engagement. With the example of Car2Go, public pressure in the form of local periodicals and blogposts led to interventions from the City of Seattle guaranteeing better coverage. Other projects might connect with existing networks of collective action. For instance, Tech Solidarity, a grassroots organization seeking to connect tech workers to the communities in which they dwell, formed toward the end of our design process. Networks such as these have the potential to encourage longer-term engagement beyond the parody.

Using existing APIs as resource for parody, we relied on databases that ostensibly change continuously, with an ever-expanding set of reviews, reviewers, territory and domains of measurement. Yet, this dynamism is less visible while using the applications; they instead present a snapshot in time. For reviewing platforms like Yelp, Dork Posters helped expose how such snapshots participate in acts of stabilization—through the avoidance of "sketchy" neighborhoods, for example [35]. Without the description of the accompanying encounter, this relationship between stabilized and changing data may go unseen. Dork Posters, similar to the platforms it critiques, may actually communicate a rendering of space as static or consistently (although differently) ordered. Maybe the addition of a slider tool could show shifts over long temporal spans? Or perhaps longer form descriptions of the data we pull could support understanding? For now, we recognize the limits to this particular form, and have supplemented the maps themselves with in personal encounters and invitations for further dialog.

TECHNIQUES OF DESIGN PARODY

For the development of design parody, our project suggests three basic considerations: audience, subject of critique and aim. With Parody in Place, we focused on engaging with technologists and designers involved in producing algorithmic representations of geographic space. Our site of critical consideration was focused on the algorithms under-

lying such maps, their aesthetic form, as well as the effects of such representations. Our methods of parody sought to invite new sorts of engagements, where insights were gleaned from peculiar encounters in the everyday.

Drawing lessons from our research, we submit the following three sets of techniques for HCI researchers hoping to produce their own parodies. These lessons bolster existing work on parody [9] that has opened similar possibilities for inquiry but may not have enumerated its tactics.

What should you parody?

Designers may use design parody to appropriate or alter a thing (artifact, system or style) that their intended audience is already familiar with in order to give that thing new meaning. This process could take several forms, such as:

(1) *Visual language.* Tracing how a design aesthetic operates through visual emphasis, typography, layout, and color enables design researchers to work within and question a particular design milieu. Dork Posters drew from the modernist typographic idiom of Ork Posters: bold sans-serif type, generous white space, etc. This look nearly encapsulates the ideal of good design associated with Western capitalism in the contemporary historical moment, an aesthetic we appropriated to engage elite design networks.

(2) *Set of interaction techniques.* Certain patterns of interaction become customary through wide use and can reinforce familiarity with a given platform. With Dork Posters, we chose to take up common techniques such as hover events and "Add to Cart" buttons that revealed further details about the map or directed visitors to contact us directly for more information.

(3) Cultural referent. Here we refer to cultural themes such as masculinity, domesticity or technicity—as long as the referent is well-known to your audience. Dork Posters engaged with socio-spatial qualities of data-driven maps through the cultural currency of technicity in its status as a computational product circulated via Seattle tech networks.

What do you hope to achieve?

A design parody may seek multiple ends, depending on number and types of audience(s). Such ends include:

(1) *Critique the original entity.* Parody typically takes this form, assuming the style of the object it intends to engage with critically. For example, recent mock advertisements of the online vacation rental marketplace Airbnb used the brand's visual language to offer exaggerated versions of the original messaging, which bemoaned newly imposed hotel tax on the tech giant [46].

(2) *Attract attention in order to invite critique of something else entirely*. Here the aim is not to entertain, but rather to engage via intrigue.

(3) *Investigate the relationship between the spectacle of the parodied piece and the subject of critique.* As with Parody in Place, design parodies may critique both the design aesthetic we borrow as well as the digital platforms that produce and inform such geographic representations. The Yes Men's similarly continued "identity correction" campaigns to critique the industrial entity being impersonated in addition to the media apparatus that supports its circulation.

What form should the parody take?

Rather than imitate everything at once, designers must pick and choose what features to reproduce and expand. In the case of Dork Posters, we drew together several features of the original Ork Posters brand, including:

(1) *Website:* With Dork Posters, we chose to imitate the style of the Ork Posters retail sales website. A familiar form that would be relatively easy for our intended audience to access and engage with during and long after the event.

(2) *Set of devices:* Alongside the core visualization, we created a series of visual devices that could live alongside and enhance the parodic form, including large format posters, business cards and even our wardrobe.

(3) *Object, so long as the intended audiences is capable of accessing it:* Here, the physical poster was meant to capture the attention of audience members, serving as an object for them to interrogate and potentially take home.

(4) *Event:* In the case of Dork Posters, meetups have emerged as a particularly powerful site for building capital among designers and technologists [43]. Presenting our parody at these events then became a way to engage this group in a language and venue common to them.

Together these questions help expand understandings of how parody might be taken up as a form of design research practice.

CONCLUSION

With Parody in Place we have sought to extend HCI's concerns for mapping and research through design fiction to consider the sociopolitical consequences of data-driven maps. Our goal was not to surface implicit biases (e.g., through a data dump) nor to produce the best of all possible maps or mapping algorithms. Rather we sought to explore alternative ideas of mapping implicated within elite design and technology networks. We wanted to bring a sense of irony, curiosity and exploration to the process of inquiry in order to elicit conversations and insights that we would have otherwise missed. Our hope was to expose different approaches to making sense of neighborhood-based data by calling attention to contemporary narratives that define the influence of socio-spatial data on the city of Seattle, WA.

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