AN ADAPTIVE ARCHITECTURE FOR REFUGEE URBANISM: SENSING, PLAY, AND IMMIGRATION POLICY

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ABSTRACT

Now more than ever, architecture’s entanglement with human-computer interaction (HCI) is conditioned by a host of global forces: telecommunications networks and their infrastructures in satellites and subsea fiber-optic cables, but also international legal and financial mechanisms, climate events and other forces that amalgamate rapidly and recast the ways that the built environment responds. These affect the architecture and HCI of air travel, of agriculture, of high-speed trading and more. Further, they place the formation and experience of architecture in between scales; between the handheld device and the satellite. An adaptive architecture in this context is one that deploys familiar HCI protocols and technologies but reasserts the subjective figure and its space. The project currently in progress, Beau-Fleuve, is an attempt at such an adaptive architecture.

Addressing the novel phenomenon that is “refugee urbanism”, this mobile play structure hosts immigrant and refugee youth, revisits some of the tracking that attended their global migration and mines wireless transcriptions of their recorded input. Data from those recordings subsequently build an online map to which participants can return and discover some of the invisible legal mechanisms that enabled their movements. The structure’s responsiveness is therefore conditioned socially and physically, but also legally.
1 INTRODUCTION

Around the world today, immigration is tracked biometrically and numerically as never before, from the iris scan at the airport to a policy number affecting a refugee resettlement agency to census counts (Figure 1). The graphic representations of this data render a city’s urban fabric, its block-by-block inhabitation, according to different interests and at the service of various stakeholders. Data sets always need interpretation both through and after visualization in order to recognize their bias and construction of a subject, just like any other image. Where densities of residential development appear on a map, aspects of the site such as displacement, culture, food, smells and more are easily overlooked. And nothing affects this more strongly than the results of global migration. Such is the current story of Buffalo, particularly its West Side, as recent waves of migration build upon and speed up the constant influx of immigrant and refugee populations that otherwise go unseen.

Data visualization introduces newer complexities to an old problem of mapping, as has been proposed by landscape architect James Corner with reference to writing by Gilles Deleuze and Félix Guattari. Corner writes:

“The distinction here is between mapping as equal to what is (‘tracing’) and mapping as equal to what is and to what is not yet. In other words, the unfolding agency of mapping is most effective when its capacity for description also sets the conditions for new eidetic and physical worlds to emerge. Unlike tracings, which propagate redundancies, mappings discover new worlds within past and present ones; they inaugurate new grounds upon the hidden traces of a living context” (Corner 1999: 214).

So begins a discussion of what Corner calls the “agency” of mapping. Mappings, as Corner advocates, are active: they generate new possibilities through both their analogous and abstract characteristics, synthesizing previously dissociated bodies of physical and non-physical; visible and invisible information. “[T]he map surface,” says Corner, “is doubly projective: it both captures the projected elements off the ground and projects back a variety of effects through use” (Corner 1999: 215).

Artist and activist Ali Sant has written on the structure of maps today, their planimetric basis and the influences of both dynamic, collaborative input and the effects of wireless networks:

The contemporary basemap references the purely static landscape of the city—defined by Cartesian coordinates, the road system, and the block plan. However, the city is an enormously dynamic mechanism, which incorporates variable patterns of movement, occupation, and density. As we develop strategies for creating collaborative maps by using locative media, we must also challenge the cartographic assumptions of the basemap (Sant 2006).

Here, Sant is thinking of the lasting relevance of ideas first proposed by the Situationists as those ideas evolve under the aegis of pervasive computing. The basemap needs to continually answer to the challenges of pervasive computing, because we still lack adequate visual languages to understand how computational interactions impose changes on the city’s representability.

2 REFUGEE URBANISM

Taken to the case of a city undergoing physical change and increasingly rapid shifts in its population, some of these matters of representation can be put under consideration. The changing details of Buffalo’s organization, architecture and social and cultural aspects have been influenced by immigration since the city’s inception. Established in 1789 by European settlers, Buffalo’s future was immediately marked by the apocryphal myth of its naming. One legend has it that Buffalo got its name from what the French settlers said when they arrived and beheld the Niagara waterway: pretty river—beau-fleuve. To this tale we can append new questions. What languages mark landscapes here today and what sorts of currents bring them? What images do these languages conjure? What is gained and lost along the way? How, further, does an adaptive architecture relate to these urban changes?

Since 1950 the city population has decreased from 580,132 to an estimated 259,384 in 2012 (US Census Estimate 2013). Its immigrant population follows a downward curve as well, but markedly shallower.1 Fully, 31 per cent of immigrants in 2010 entered as refugees or asylees (IIB 2010). Much of this change is shared with other US cities in the past ten years, is partly enabled by the Immigration and Nationality Act (INA), enacted by Congress in 1965 and amended continually ever since.2 Results have been dramatic, and one can easily imagine them on a census spreadsheet or as a field of hotspots across a city plan. And yet, such representations would reside firmly in the area of tracing, not of mapping, because they disempower and simplify so dramatically. For one, these graphics would miss the human experience that accompanies such shifts, which includes the introduction of...
biometric sensing at customs entry and passport chips in recent years. They would also fail to represent the tangible changes to the city as these new Buffalonians’ paths converge and tangle around the city.

“Refugee urbanism”, then, is a phrase that can describe the dynamic and evanescent physiognomy of US cities as they are today, affected by both the INA’s evolving rules and the implementation of sensory tracking to enforce those rules. Refugee urbanism denotes neither a form nor ideology of this city-citizen amalgam, as the melting pot and glorious mosaic attempted previously. Rather, the phrase names the spatial and ontological condition of urban physiognomy: how it is lived and experienced.

While Buffalo is by no means a city of refugees, nor are all its immigrants asylees, the phrase can be extended to describe displacement generally as it touches on the condition of tracking movement to and within cities across the globe.

How are user interface (UI) and visualizations an actuation of urban and individual identity in the era of big data? If visualization—tracing and tracking—is today rooted in both big data collection and in the sensory systems that collect that data, then the task of mapping is rooted in making that physical experience visual. In other words, the visual and the haptic are linked as never before, because the body itself is touched, identified and counted as it enters the city. Hence, urban mappings that rethink the basemap need to originate from a physical experience, one in which a city resident can opt in to the experience of being sensed and the chance to be heard. A visual language of sensing is one that can engage and reverse the sometimes disenfranchising experience that things like biometrics and tracking impose on the city and its citizens, by allowing willful and individual participation, as opposed to visualization, which results from forced movement and passive data collection.

In response to all these considerations, the Beau-Fleuve project (initiated in 2012) is conceived as a media-architecture installation, a workshop and a website that map the intense mixture of immigrant and refugee paths to the flows of environmental, political, legal and economic turbulence that now catalyze urban and global shifts (Figure 2). These mappings reveal some of the complex information infrastructure that augments global migrations today, while the installation empowers the subjects of those processes to self-identify and mark their place.

The installation sits in public space, such as the entry to a neighborhood center in the city’s most ethnically diverse part of town (Figure 3). Here it operates as part urban spectacle and part recording booth, in which kids answer questions about their migration stories. A soft, floppy geodesic, the heart of the project, is an interactive play structure made of thick felt that serves as an acoustic buffer and malleable shared space. Custom electronics in the structure wirelessly produce voice transcription and translation, and mine oral history responses to plot points on a developing online map. The custom electronics and software embedded in the skin of the felt structure mimic the sorts of biometric protocols that children might already be familiar with as they entered the country. Here, however, a misplaced knee while climbing might trigger a voice recording that asks for a story to be told. As participating kids navigate the soft structure, the structure is itself listening, and in fact recording. A wandering hand might block a light sensor just as a fingerprint scanner does, triggering the structure to ask two kids within to tell each other memories of an earlier home.

The project mediates learning about the intrinsically messy relations between refugeeism and migration with identity and urban demographics. Its choice population is kids because children play a vital yet fraught role in refugee urbanism. Rarely does anyone explain to them the mechanisms that influence their dramatic movements around the globe, and their subsequent contribution to change in a new city; yet their line of movement on the map remakes the city. In the Beau-Fleuve website, participating kids are able to literally identify their own line on a world map, their part in a larger phenomenon. By querying that line, they can see a tag of the US foreign policy that facilitated their movement to this new home (Figure 4).

The geodesic thinking that underlies this whole experience is itself both homage to and a commentary on the ideas that precede Beau-Fleuve: R. Buckminster Fuller’s “Dymaxion Air-Ocean World Map” and his geodesic domes, both of which contain global social visions within their simple geometries. To these, Beau-Fleuve offers the “saggy” geodesic; a structure that is soft in touch and program for a world of less-clear boundaries.
ENDNOTES

1. According to the University at Buffalo’s Regional Institute, “Between 2003 and 2006, over 27,000 foreign nationals received legal permanent resident status in upstate’s five largest metro areas [...] these recent arrivals represent [...] 5.5 per 1,000 in Buffalo.” International Institute of Buffalo. 2010. 2008 Policy Brief p. 1

2. Most of this refers to the Immigration and Nationality Act, Sec 207. INA Sec 244 (amended by PL. 101-649 Imm Act of 1990, Title 3, Sec 302). Countries designated for Temporary Protected Status (TPS) by Secretary of Homeland Security, and their years of protection, as they have affected Buffalo’s population influxes: Somalis (September 4, 2001), Sudanese (October 7, 2004) and South Sudan (November 3, 2011). US Department of Homeland Security. USCIS Temporary Protected Status Retrieved at http://www.uscis.gov/ August 2013

3. The term “big data,” born around 2008 to describe the emergence of data sets so large that they exceed the capacity of most commercially available hardware and relational database storage or software, has been subject to many studies and changing definitions as capacity—and demand—grow. A recent definition sums it up generally: “Size is the primary definition of big data.” Method for an Integrated Knowledge Environment (MIKE2.0). Big Data Definition. Retrieved at http://mike2.openmethodology.org/wiki/Big_Data_Definition November 2012

4. Beau-Fleuve online interface, which maps migration lines using workshop participant input

WORKS CITED


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