



PORTO

Maphazardly

Representation of Place in Graphic Design

Alice Bouvier McCarthy

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Abstract

This project, *Porto Maphazardly*, examines the role of a graphic designer in exploring alternate means of mapping a location. A square in the Portuguese city of Porto was mapped through five sensory approaches: sound, smell, taste, activity, and color perception. The data that was gathered was translated into visuals to create a generated, but totally unique, graphic portrait of a place. The portmanteau *maphazardly* in the title combines the word ‘map’ with the adverb, ‘haphazardly,’ which means to do something determined by accident rather than design, without a clear plan or at the mercy of chance. The coining of the word is meant to evoke the extent to which the illustrations developed in response to observations, encounters and circumstance, rather than a client brief or a designer’s pre-decided aesthetic.

In this report, the project is contextualized between the theory of critical cartography in the field of sociology, and the mapping works which already exist in the graphic design field, including the works of Paula Scher, Pedro Pina, Jeremy Wood, Alison Barnes and Kate McLean. The report presents a synthesized definition of ‘map’ for use in a visual, graphic analysis. A limited survey of the principles of information design is discussed, in its relation to traditional cartography, infographics, and our cognitive interpretations of maps. Finally, a brief analysis of changes in the nature of maps (smart-maps) is included, focusing on how user-centered maps have changed how one interacts with a city.

The project endeavors to work in the realm of ‘designer as researcher,’ and is influenced by the writing of Russell Bestley and Ian Noble on visual research, in which the experiential nature of the data collection influences the design process. The methodology was developed through a series of test projects and by the application of ‘walking as method,’ and the report introduces the generative systems which were used to transform data—notes, photographs, and recordings—into illustrations. The final mappings are presented along with an analysis of successes and failures.

Keywords: mapping, representation of place, information design, critical cartography

Resumo

Este projecto, *Porto Maphazardly*, analisa o papel de um designer gráfico na exploração de meios alternativos para mapear um lugar. Uma praça na cidade do Porto foi mapeada através de cinco abordagens sensoriais: som, cheiro, sabor, atividade e percepção da cor. A informação recolhida foi traduzida na forma de dados visuais, a fim de criar um retrato gráfico gerado —mas totalmente único— de um lugar. A palavra inventada do título, *maphazardly*, combina a palavra inglesa ‘map’ (mapa) com o advérbio ‘haphazardly’, que significa fazer algo de forma acidental em vez de programada, sem um plano ou determinada por um acaso. A criação da palavra é feita com o intuito de evocar a maneira através da qual as ilustrações foram desenvolvidas: em função das observações, encontros, e circunstâncias, em vez de um brief do cliente ou da estética pré-determinada de um designer.

Neste relatório, o projeto está contextualizado entre a teoria da cartografia crítica na área da sociologia e a análise do mapeamento que já existe no campo do design gráfico, incluindo as obras de Paula Scher, Pedro Pina, Jeremy Wood, Alison Barnes e Kate McLean. O relatório apresenta uma definição de “mapa” que pode ser usada numa análise visual e gráfica. É também inserida uma pesquisa limitada dos princípios do design de informação, através da sua relação com a cartografia tradicional, a infografia e as nossas interpretações cognitivas de mapas. Finalmente, é incluída uma breve análise das mudanças na natureza dos mapas (smart-maps), com um foco nos mapas ‘centrados no usuário’ e como estes alteraram a sua interação com a cidade.

O projeto esforça-se para trabalhar na esfera do “designer as researcher”, sendo influenciado pelas obras de Russell Bestley e Ian Noble na pesquisa visual, onde a natureza experiencial da compilação de dados influencia o processo de design. A metodologia foi desenvolvida através de uma série de projetos de teste e da aplicação do “walking as method”, e o relatório intruduz os sistemas generativos que foram usados para transformar os dados—notas, fotografias, e gravações —nas ilustrações. Os mapeamentos finais, três posters, são apresentados juntamente com uma análise dos sucessos e fracassos.

Palavras chaves: mapamento, representação de lugar, design de informação, cartografia crítica

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Porto overlooks the Douro River and the Atlantic Ocean on the very western edge of Europe. The second-largest city in Portugal has a labyrinthine downtown neighborhood in whose medieval streets the casual wanderer will stumble upon many appealing parks, squares, and places to window-shop, as well as shadowy crevices, colorful street art, chipped ceramic tile and stray cats. I arrived in October 2014, planning to stay in the city for ten months. I had neither the skills in Portuguese to effectively communicate with people, nor an existing visual vocabulary to describe and make sense of a place that was very different from where I had come from. From this backdrop, I developed my mapping project into illustrations of place. I had the opportunity to think about the representation of place from a graphic designer's perspective, but also from that of a foreign resident. In Steve Dietz's essay "Mapping the Homunculus," he says that "one of the most common ways to place ourselves in relation to the incomprehensibly vast, be it God or the The Matrix is by creating a map" (Dietz, *Else/Where Mapping* 2006, p. 200).

Not to imply that Porto is an ‘unmapped’ territory—quite the contrary. In a heavily visited country such as Portugal, which received an estimated 14 million tourists in 2013,¹ free paper maps are ubiquitous. In fact, when a visitor walks through the arrivals door of Porto’s Francisco Sá Carneiro airport, a helpful employee is stationed there to offer them the same city map that is available in tourist offices and kiosks all over town **[Fig 1]**. This example of a static, shared map (Owens 2012, p.17) might seem quaint in a time when smartphones provide us with a dynamic and personalized mapping with ourselves as the locus. The digital map effectively maps its user as the user uses it (2012, p.18), and so promises a single and objective answer to the question, where am I?

011

2 Quercia’s Ted talk
from TED@BCG
Berlin, 2014

However, what if this question is philosophical in nature, rather than the plea of the lost? What if it seeks an answer that is more emotional or evocative than what essentially boils down to a set of coordinates? Researcher Daniele Quercia, leader of Yahoo’s *Happy Maps* project, says “Mapping apps help us find the fastest route to where we’re going. But what if we’d rather wander?”² When I arrived in Porto, knowing that I would be staying for about year, I sought to orientate myself not just spatially but also contextually. A GPS-enabled map, with the user at its center, does the latter less well. Having a true sense of place is less about a dot on the map than about what one sees, hears, and smells, one’s sense of proximity to other cities, the nuances of the neighborhoods and the rhythms of everyday life. The project will focus on representation of place and cataloging multiple layers of information and experience in an attempt to arrive at a detailed description of a place - albeit a subjective and personal one.

In addition, the subjective and personal nature of the project grew as I worked, thanks to many failed test projects and through the course of my physical and metaphorical journey through the city. I will readily say that my approach is quite specific to me as a designer a visual researcher, however, I hoped and I sought to demonstrate that the methodology can be applied in another location where similar data can be gathered. For example, the Color Map, which sought to proportionally record all the colors visible along an (imagined) horizontal band around Praça Carlos Alberto, could just as well be performed in a plaza in Barcelona, or around a city block in Los Angeles.



Fig 4 Porto skyline



Fig 5 Praça Carlos Alberto

“

**The possibilities
for mapping are as
multiple as people
who choose to
make maps.**

”

Rhiannon Firth

1.2 What is a map?

What is a map? The word “map” is derived from the Latin term *mappa*, meaning a tablecloth or a napkin, and still appears in other European languages such as Spanish, Polish and coincidentally, the Portuguese *mapa* (Brotton 2013, p.4). This original definition refers the map as a physical object; although now the term can refer equally to the physical form as well the “graphic document” (Brotton 2013, p.5). In the History of Cartography, edited by J.B. Harley and David Woodward, the broad and accepted modern definition is given as “Maps are geographic representations that facilitate a spatial understanding of things, concepts, conditions, processes, or events in the human world” (Harley & Woodward, 1987). Simply put, maps translate three-dimensional space onto a two-dimensional surface. “This map gives no sense of the vertical, the emphasis is on the ground—suggesting ‘the city is a place to be traversed... not an area to be lived in and through’ (Black 1997, p.13). Our internal mental projections of places are flattened and the map, in effect, becomes the city. For example, the famous London Underground Map [Fig 6], originally designed by Harry Beck in 1933 (Eskilson 2007, p. 152), is so iconic, and so synonymous with the city of London, that it has been shown that Londoners’ ‘mental maps’ of their city conform to the shape of the subway map (whose lines and points are not spatially in line with what is going on aboveground) rather than the physical reality.³ The map became an efficient and idealized version of the actual city.

According to Allison Barnes, “the geographic visualization of space has been dominated by science since the Enlightenment, lending the map an air of neutral authority and unquestionable truth. No other image generated by human effort is granted such exemption from the personal, the subjective, the assumption of interestedness with which we automatically invest paintings and drawings (even photographs), essays and history (even eye-witness accounts)” (Wood 1992, p.66). According to William Owens in Mapping Graphic Navigational Systems, “Maps inhabit the realm of fact, although not exclusively. They are figurative representations of dimensions, attributes and

³ Else/Where:
Mapping, essay by
Paul Elliman, p. 173

relations of things in the physical or logical world, reproduced at a scale [almost always] smaller than life-size” (Owens 2012, p.5). We are habituated to accept a map as factual, although I will discuss later how this is considered among scholars of critical cartography to be a common and damaging misconception. He continues, “Princes, popes and governments have used maps to exert their rights, extend their trade, tax their subjects and know their enemies. Oil magnates use maps to locate and claim the earth. Newspapers use maps to tell stories of war and peace. Social scientists use maps to publicize social problems. A city resident sketches a map to bring a friend from the station by the shortest or most scenic route—the mapmaker decides” (2012, p.5).

By using maps we can find our way and get a sense of a place before we arrive, we can see things from a bird’s-eye view and at a scale that exceeds our physical capacity. We can convey information at a glance, give and receive directions, orientate ourselves, mark a spot, find something we were looking for, visualize territories, boundaries, populations and spheres of influence. However, even traditional maps are not always completely prosaic. Jerry Brotton writes in *A History of the World in 12 Maps*, “Maps also allow us to dream and fantasize about places we shall never see” (Brotton 2013, p.14). That will be familiar to anyone who has ever wasted time on Google Maps looking at somewhere halfway around the world or, as I remember from my childhood, by spinning a globe to see which exotic place my finger ‘landed.’ Certainly, this very sense of whimsy that some maps can cause us to feel also serves as one of the inspirations for this work.



Fig 6 *London Underground Map*, Harry Beck, 1938. “With excellent color printing... [and] only horizontal, vertical, and 45 degree lines, the map became a beautiful organizing image of London. For apparently quite a number of people, the map organized London (rather than London organizing the map),” (Tufte, “London Underground Map,” 2015).



1.3 The Project

This project examines the possibilities of mapping through representation of place using the visual language and processes of graphic design. The goal is to design a system that can be used to turn observational data related to a physical place into visual output. Integral to the work is my ‘outsider’ perspective, both as a designer working the geographic sphere and as foreigner living in Porto. In my exploration, I am inspired by the five sensory categories of seeing, hearing, feeling, tasting, and smelling, which provide me with a set of experiential archetypes in which to situate my data gathering. In the report, I outline the extensive theoretical and conceptual work that has been done in the field of graphic design on representation of place, and how that context is foundational to my creative process. Finally, I analyze and document the iterative process that I undertook to arrive at my final visualizations.

I believe that from a research perspective mapping methods and methodologies in graphic design are territories ripe to be explored. If a map is a completed document, mapping is a process—ongoing, incomplete, indeterminate, mutable. Mapping refers to “plotting points and finding common points of reference with which to analyze data; it benefits from the lack of finality denoted by the word map” (Abrams & Hall 2006, p.2). That is why I have chosen to frame the project I undertook in Porto using the word mapping rather than the word map; the project revolves primarily around my process and experimentation as much as the finished result. The final designs, while crucial to my thesis and final analysis, become illustrations that cannot be detached from the data collection methodology that generated them.

Fig 7 (facing page)

Four photographs of Praça Carlos Alberto taken on different afternoons.

“
**Always make
maps, always
question maps.**
”

Dennis Cosgrove

2.1 Critical Cartography

The story of cartography, the “Art, Science and Technology”⁴ of map-making, is the story of people seeking to understand and visualize the physical world. Naturally, this understanding is bound to be limited by the scope of our human capabilities and imagination. As I noted in the first chapter, Owens begins his definition of maps by saying that maps are factual—but not completely so. This acknowledgment is one of the contextual backgrounds that has most informed this project. The limitations of traditional maps are two-fold. Our capabilities to record data continue to improve, but at their essence, maps will always remain a facsimile of the physical world. Furthermore, the mapmaker must make many choices in the making of the map—what to represent, what information to include and exclude and finally, what will be the limits of the representation. Artificial borders are necessary to contain the map’s scope, which often don’t exist in physical reality, creating a harsh separation between what is ‘on the map’ and what is off. The expression *off the map* is an idiomatic term which has been used to denote a place far removed from civilization, or to describe a subject considered out of date, out of fashion, or consigned to oblivion.⁵ Its cousins are *fall off the map* or *drop off the map*, meaning to become irrelevant. Therefore, the connection between what is mapped and what is important or worthy is clearly embedded even in our language.

In response to the perceived limitations of traditional cartography, during the 1980s a new school of thought emerged in the field of geography. Historical geographer John Brian Harley pioneered what would eventually be termed critical geography. He argued in his writings “the development of a critical cartography depends on cartographers engaging in the theoretical innovations taking place in human geography more broadly” (Del Casino 2010, p. 38). He posited that cartography, as a practice, and maps, as a product, are inextricable from existing systems of power and knowledge, and should be examined as such. Graphically speaking, critical cartography is the idea that representational maps—like any other form of created content such as books, images and films— are not (and cannot be) value-free or neutral. Maps reflect and perpetuate

⁴ British Cartographic Society, 2015

⁵ “Off the Map” Wikipedia definition. Retrieved: August 2015.

relations of power, more often than not in the interests of dominant groups (Firth, 2014), and historically, maps have been used to claim territories and demarcate spheres of influence going as far back as the Babylonians (Brotton, 2013). In *A History of the World in Twelve Maps*, Brotton neatly explains that a “A world view gives rise to a world map; but the world map in turn defines its culture’s view of the world. It is an exceptional act of symbiotic alchemy” (2013, p.6).

A classic and now well-circulated example of ‘how maps lie’ is the story of the Mercator projection. Unveiled in 1569 by Flemish cartographer Gerardus Mercator, this projection of the three-dimensional planet onto a two-dimensional surface indelibly changed how people viewed the world’s countries [Fig 8]. The ultimately arbitrary decision to place Europe at the center of the map was an obvious euro-centric choice, but Mercator’s calculations also caused the European powers’ countries to appear larger than life, and compressed the countries near the equator. Whether it was intentional or not, the tropical, often colonized, countries were rendered smaller and more insignificant compared to their colonizers. It is due to this reason that many people have no idea to this day how large the continent of Africa is compared to Europe and North America,⁶ among other inaccuracies that have persisted in our mental maps of the world.

“By teaching the simple facts of the shape, size and position of a country relative to all the others, the political map of the world has become intrinsic to our sense of national identity. When I was growing up, in Britain in the mid-1960s, our school maps portrayed the British Isles (we just called it ‘England’) sitting comfortably and naturally at the exact longitudinal centre of a flat world, north at the top and south at the bottom, the country subtly and significantly exaggerated in size by the Mercator projection and colored prettily in pink. We learnt from the beginning that this was the natural way of things. A lot of the rest of the world was pink, too: these were the twilight years of the British Empire. The map was probably 20 years old by then and

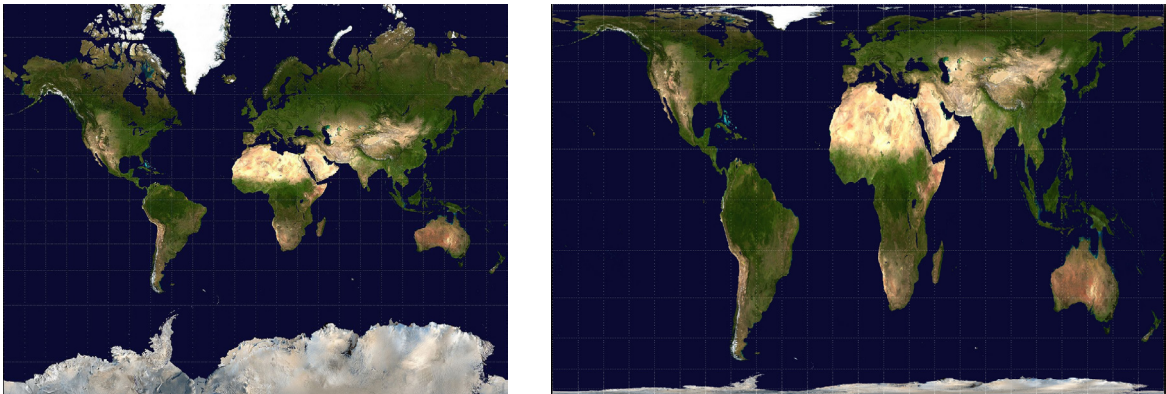


Fig 8–9 The Mercator projection (left) distorts the continents at the poles, the Peters-Gall projection (right) distorts the continents around the equator, but displays the true areas of individual countries.

its representation of demi-global dominion in superabundant pinkness had already been made obsolete by national liberation movements across Africa, the Mediterranean, Arabia, India, East Asia and the Caribbean. But it wasn’t easy for a school geography department to keep up with the winds of change and so we clung to the fiction of empire” (Owens 2012, p.25).

Arno Peters proposed a revised projection in 1967 [Fig 9], however his version was also not without its own distortions and therefore detractors (Garfield, 2013). In the field of cartography, where the picture on a map can be so important to how we view ourselves, this constant murmur of controversy is not surprising. The practice has long been “dominated by those in power: delineations, labels, emphasis, relations, detail, scale and many other factors are determined by labels, emphasis, relations, detail, scale and many other factors are determined by political, military and economic forces” (McCarthy 2013a, para. 7), because more often than not, that was who was funding expensive surveying, designing and printing endeavors. However, Harley himself did not propose a concrete solution to this dilemma of maps supporting the agenda of the powerful.⁷ The critical map theorist does “emphasize the importance of multiple perspectives and multiple maps” (Del Casino & Hanna 2010, p.39) in order to get closer to a more accurate representation of place. Different and multiple mappings might inform on demographics, language, landscape, neighborhoods, landmarks, skyline, topography, culture, spatial and metaphorical distances, goods and services, graffiti, materials, or traffic and migration patterns—and more subjective experiences such as impressions or memories. Likewise, different mapmakers will bring different biases, approaches and sensory perceptions to the same space. No two people’s physical experience of the same

⁶ The Economist, “The True True Size of Africa,” published online November 10th, 2010

⁷ Harley’s theorizing was cut short by his untimely death and he would never finish a complete critical methodology of maps and mappings (Del Casino & Hanna 2010, p.39).

place will be identical, nor their emotional one. In short, mapmakers operating outside the structures of power make valuable contributions to our understanding of place. According to Rhiannon Firth, writing online in the *Occupied Times of London*:

Critical Cartography is therefore...interested with theoretical critique of the social relevance, politics and ethics of mapping. The assumption that this is even a possibility – that maps are not simply neutral tools but rather strategic weapons that express power – leads to a second, practical, aspect of critical cartography. Groups and individuals at a grassroots level can also use mapping for a variety of purposes. Maps can be used to make counter-claims, to express competing interests, to make visible otherwise marginal experiences and hidden histories, to make practical plans for social change or to imagine utopian worlds. It is important to note that maps are expressions not only of power, but also of desire. Maps themselves can be objects of desire – some people enjoy looking at maps, or collecting historical ones. Maps also project our desires onto the landscape, they can map our hopes for the future, what we desire to see and that which we wish to ignore or hide. (Firth, 2015)

Reading multiple mappings from multiple perspectives and analyzing the maps of the oppressed as well as the oppressor represent one of the central tenets of critical geography. Harley emphasizes maps as tools of resistance when he recounts the ‘Columbian encounter’, and he notes that “in some Indian cultures,⁸ maps were part of the intellectual apparatus by which the imposition of colonial rule was resisted”, and that “making a map became a conscious strategy of resistance” (Harley 1992, p. 527) [Fig 10]. According to David Pinder, writing in the journal of *Environment and Planning*, “Harley’s later adoption of a more deconstructive approach, influenced by Jacques Derrida... certainly expands the potential for subversion, shifting the onus away from the development of alternatives to the reading of existing maps in an effort to expose the conflicts and competing discourses” and question them as arbiters of the natural order of things (1996, p.411). This skepticism of the ‘naturalness’ of maps serves as the critical geographer’s unpacking of the biases inherent to any mapping, whether readily apparent or not. Pinder also posits in the essay, titled *Subverting Cartography*,

⁸ referring to Native American peoples



Fig 10 *Indian Country Today* by Jane Quick-to-See Smith, 1996. “The wash is to indicate a complete make-over of a land formerly roamed and named by other inhabitants” (Harmon 2003, p.95).

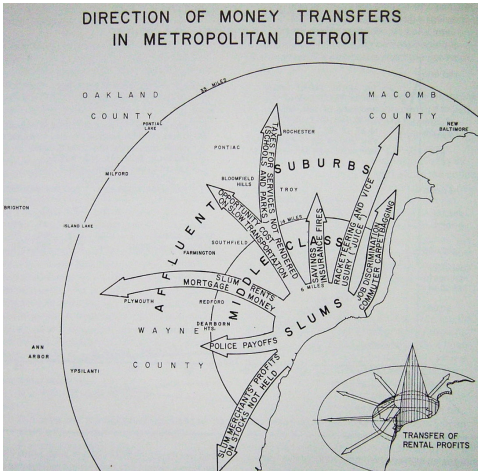


Fig 11 Excerpted map from *An Atlas of Love and Hate: Detroit Geographies*, William Bunge 1969. Retrieved from *Vice Magazine* online, “Wild Bill” Bunge’s Radical Geographies of Detroit Explain Everything,” Michael Byrne, 2013.

that “In the absence of a clearly marked point of view the map assumes a more general tone: it appears as the universal point of view” (1996, p.407), the assumption that critical geography attempts to deconstruct. Since the early days of critical geography as a field of study, various groups have been able to appropriate and utilize the practices of cartography and to deconstruct and reconstruct maps, often in an oppositional manner. An example are the urban maps created through the geographical expeditions initiated by William Bunge during the late 1960s and 1970s [Fig 11], which commit to social change by including something he termed ‘oughtness maps,’ which indicate how the city ought to be. The works of artists, activists, and post-colonial thinkers does not replace the authoritative version, but supplements it with alternatives (Del Casino & Hanna, 2010, p.78).



Fig 12 *Mappa do Coração [sic]*, 1904, author unknown. Retrieved from “Heart-Shaped World,” James Trainor, <http://www.jamestrainor.net/1946>

2.2 Psychogeographic, Cognitive and Personal Maps

Another area worth including in the theoretical background for the project is the concept of personal mapping. What does it mean to author our own personal maps? A personal map might be a city resident mapping places of significance to them, an apartment dweller sketching their floor plan. It could also be a map of the geographic but intangible, such as the impressions that happened in particular places, or a map of the body corresponding to physical memories or sources of emotion [Fig 12]. It also could be the school-age child asked to draw a map of the United States from memory (as in the United Shapes of America project [Fig 13]) where inevitably their home state will loom large and Florida will be recognizable, but other less familiar shapes will need to have their borders invented from a hazy recollection. Also, as in the Amsterdam RealTime maps project, a personal geography could map the routes taken through the city by an ordinary resident going about his or her daily business, etching the routes most taken deeper and deeper onto the ‘map.’ In the Amsterdam RealTime project

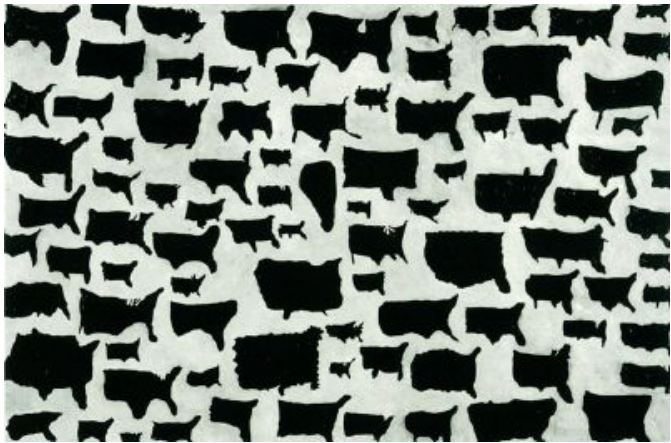


Fig 13 Kim Dingle, *United Shapes of America*, 1991. The artist asked American teenagers to draw the country’s shape.

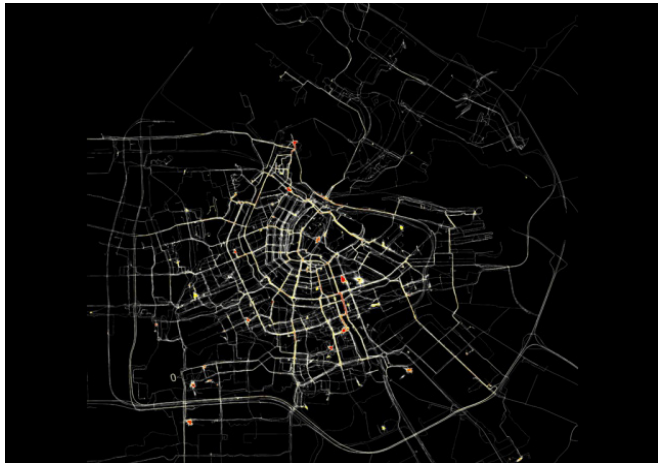


Fig 14 *Amsterdam RealTime*, Waag Society, 2002, retrieved from waag.org

mentioned, project organizers The Waag Society gave GPS trackers to sixty volunteers to record their daily movements. The idea was to create “a collective synchronous map” that would be the “most current map of Amsterdam” (Ross, *Else/Where* 2006, p. 185). According to the project creators, “Every citizen of Amsterdam carries an invisible map of the city in his head. The way he or she moves through the city is determined by this mental map. Amsterdam RealTime in 2002 visualized those maps.” The traces were mapped on a group map, with routes and places more traveled by the project’s participants gradually becoming thicker and brighter. Individually the lines cannot represent the whole city, but if multiple subjects’ personal maps are layered on top of one another, a larger and clearer image emerges from the GPS data—the ghostly tendrils of the city’s thoroughfares and roads begin to form—many personal maps combined to make a collective one. In cartography, “aspiration toward exhaustive accuracy is forever thwarted by the constant changes” (Abrams & Hall, 2006, p.15). Personal cartographies are immune to such a concern, capturing as they do a much more singular snapshot in time—of a place, a smell, an impression, and a time.

Psychogeography is the practice of examining the effects of a space or location on emotions, and psychogeographers decode the environment by journeying through the city and recording their impressions. According to scholar Wilfred Hou Je Bek, “Psychogeography is the fact that you have an opinion about a space the moment you walk into it” (O’Rourke 2013, p.7). Sociologist Paul-Henry Chombart de Lauwe wrote “an urban neighborhood is determined not only by the geographical and economic factors, but also by the image that its inhabitants and those of other neighborhoods have of it.” (Dietz 2006, p. 200). In acts that combined psychogeography with an element of performance, the Situationist Guy Debord’s art explored the value of drift,⁹ wandering

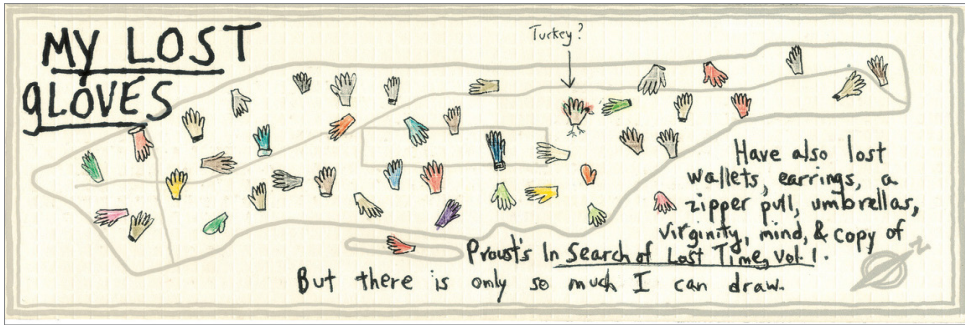


Fig 15 A map from *Mapping Manhattan*, Becky Cooper, 2012, map artist anonymous.

aimlessly through the city with an open mind, and later situating places on his maps by emotional proximity rather than physical closeness. “Psychogeography focuses on ‘the hidden, forgotten and obscure’ within ‘the settings and practices of the streets, in their fragments, everyday materials and detritus’” (Pinder 1996, p.389). The influence of psychogeographic map-making was important to the development of this project, as one of my goals was to explore illustrating a place through its ambiance, rather than solely focusing on its physical details, and from the work of these artists and designers and thinkers I was able to find a precedent for doing so.

Cognitive or mental mapping is another facet of personal mapping that is worth discussing. In behavioral geography, a mental map is a person’s point-of-view perception of their area of interaction. Although this kind of subject matter would seem most likely to be studied by psychologists, it is most often studied by geographers, who study it to determine subjective qualities from the public such as personal preferences and practical uses of geography such as driving directions. The media (news reports in particular) also has an effect on a person’s mental map of the geographical world. The perceived geographical dimensions of a foreign nation (relative to one’s own nation) may often be heavily influenced by the amount of time and relative news coverage that the media may spend covering events from that foreign country. Thus, there is physical space, and there is one’s mental map of the location. Mapping memory and mapping the city can overlap nicely: in the art project by Becky Cooper, *Mapping Manhattan* [Fig 15], Manhattanites drew the locations of their memories on a map of the island—first kisses, first apartments, favorite foods, drunken nights gone wrong, etc. It features the cartographic memories of seventy-five New Yorkers, some anonymous and some famous. A cognitive map can show what is important to a person, and by omission,

⁹ *Theory of the Dérive*, 1956



Fig 16 *50 Years of Helvetica*, Cartlidge Levene, 2007

reveal what is less important—also, it can allow a person to mentally experience a place without being there through memory; this innate human skill is referred to as place learning.

Cited in Roger Fawcett-Tang’s book on mapping in graphic design, an example of a personal mapping project is a poster by studio Cartlidge Levene, which chronologically maps the studio’s use of Helvetica during a single year through what is essentially a self-survey **[Fig 16]**. In another example, the designer Vincent Meertens created what he terms a “subjective map of New York City” by using the tracking software Open-Paths. Meertens created his personal map from over 10,000 data points, gathered from about a year of his and his girlfriend’s movements around the city **[Fig 17]**. According to Meerten’s website, “When combined, a subjective map emerges, a visual diary of our lives during one year. Each dot or route holds a memory and has a meaning to us” (Meertens, 2012, para. 1). One could also argue that a dynamic, GPS-enabled digital map such as Google Maps or Apple Maps is a version of a personal cartography. The democratization of GPS, thanks to the proliferation of smartphones, allows any of us to map ourselves in real-time. This technological ability was nothing short of a revolutionary change, not only in how we navigate, untethered from the paper map, but also in how we view ourselves moving through space. Graphically, the upside-down teardrop icon used by Google has become a short hand for ‘I am here’ or ‘it is there’. Likewise, who among us hasn’t, when trying to envision where a particular neighborhood is located, imagined the city’s blocks and streets colored in light yellow like Google’s version? In Simon Garfield’s entertaining book on the history of maps, *On the Map*, the author observes that in today’s world “We each stand, individually, at the center of our own map worlds. On our computers, phones and cars, we plot a route not from A to B but from ourselves (‘Allow current location’) to anywhere of our choosing; every distance is measured from where we stand” (2013, p. 19).

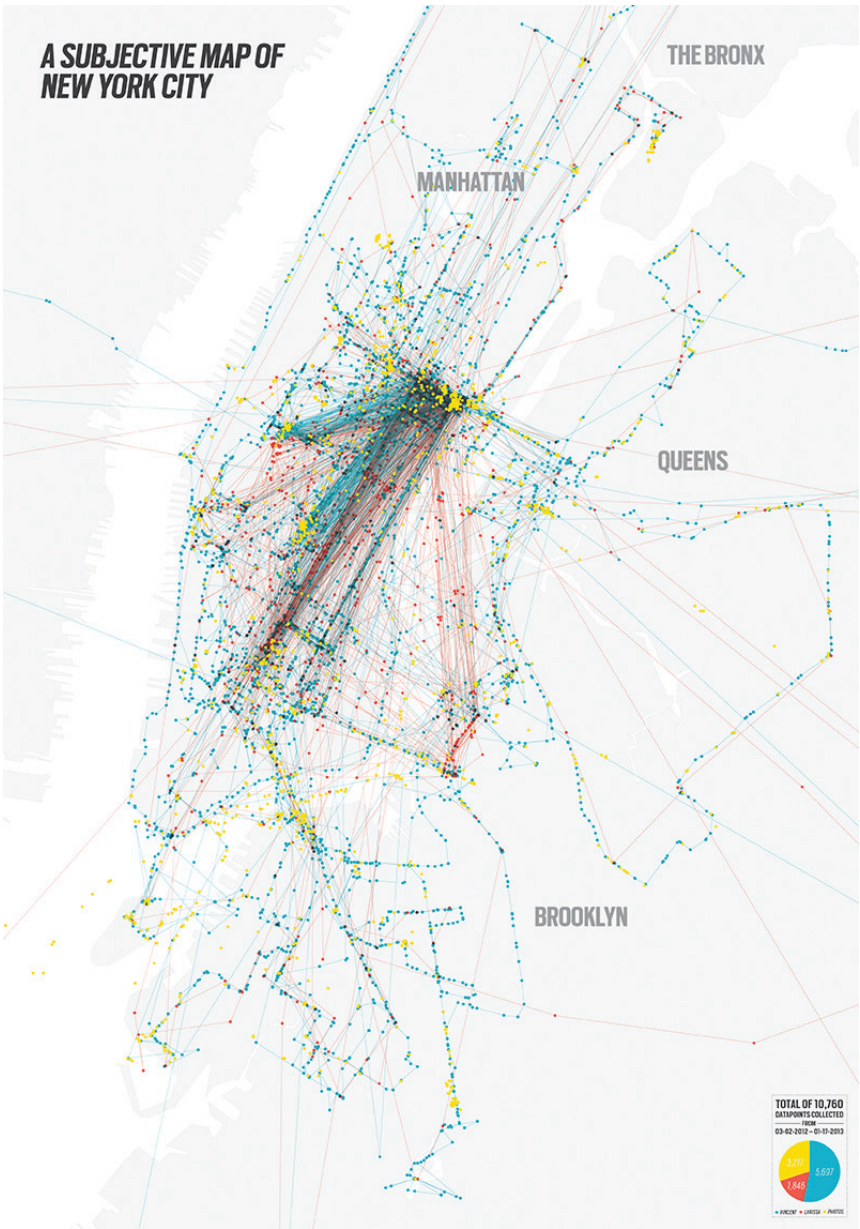


Fig 17 Blue dots represent Meertens’ movements, red dots represent his girlfriend’s and yellow dots represent the locations of photographs taken. *A Subjective Map of New York City*, Vincent Meertens, 2012.



“
**With a map, we can
extrapolate from
what we know to
what’s possible**
”

Dirk Van Weelden

2.3 Reading the Map

There is a third participant in the graphic exchange besides the subject and the map-maker: the map-reader. The audience is a stakeholder that must also be considered in a mapping project. According to Bestley and Noble, mapping is the systematic organization of information in a way that can be transported and also *interpreted* [emphasis mine]. They write that “Designers have a responsibility to create work which is both accessible and understandable to its intended audience. As such, it is essential that research is conducted into the target audience for a particular message in order to ascertain the quality and appropriateness of materials used and visual language adopted, together with the range of contexts within the work might be viewed and interpreted” (Bestley & Noble 2005, p.73).

Maps stretch beyond their physical boundaries; they are not limited by the paper on which they are printed or the wall upon which they might be scrawled. Each crease, fold, and tear produces a new rendering, a new possibility, a new (re)presentation, a new moment of production and consumption, authoring and reading, objectification and subjectification, representation and practice. (Del Casino & Hanna 2010, p.36)

But what about un-readable maps? It has also been argued that there is a place for maps that are more abstract. In Katherine Harmon’s book *You Are Here: Personal Geographies*, she writes that artists’ maps are maps to the imagination, envisioning “voyages of the mind” (Harmon 2003, p?). Maps can be revealing without delivering useful data or way-finding information. Artists have explored the symbolism of the map, repurposing it in creative, introspective or whimsical ways. Speaking of his illustrated maps [Fig 18], the illustrator John Held said, “One of the charms of a map like this is that nothing is anywhere near correct. What are you going to do about it?” (Harmon 2003, p. 84). Quite right—what are we going to do about it? Attempt to read it like a real map, of course, because that is what we have been trained to do.

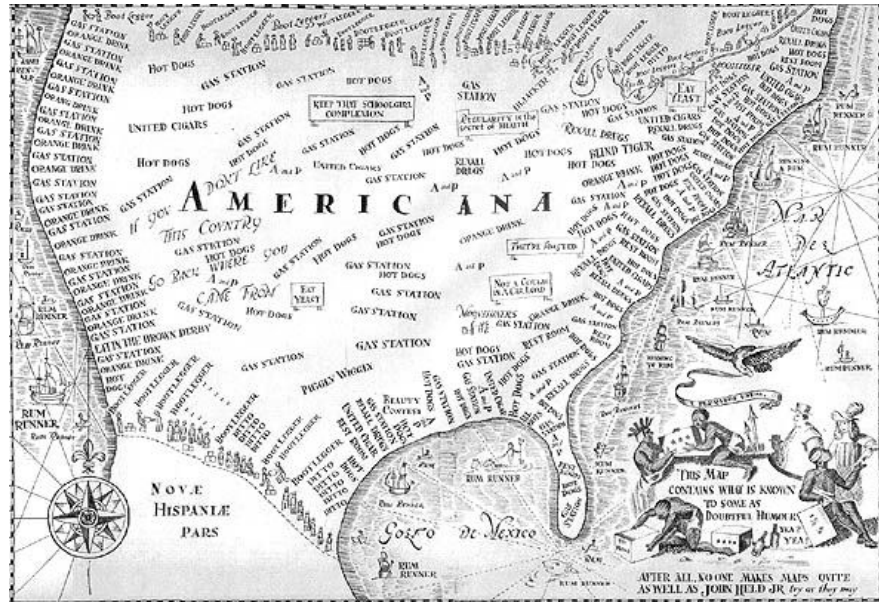


Fig 18 *Americana*, comic map of America by John Held

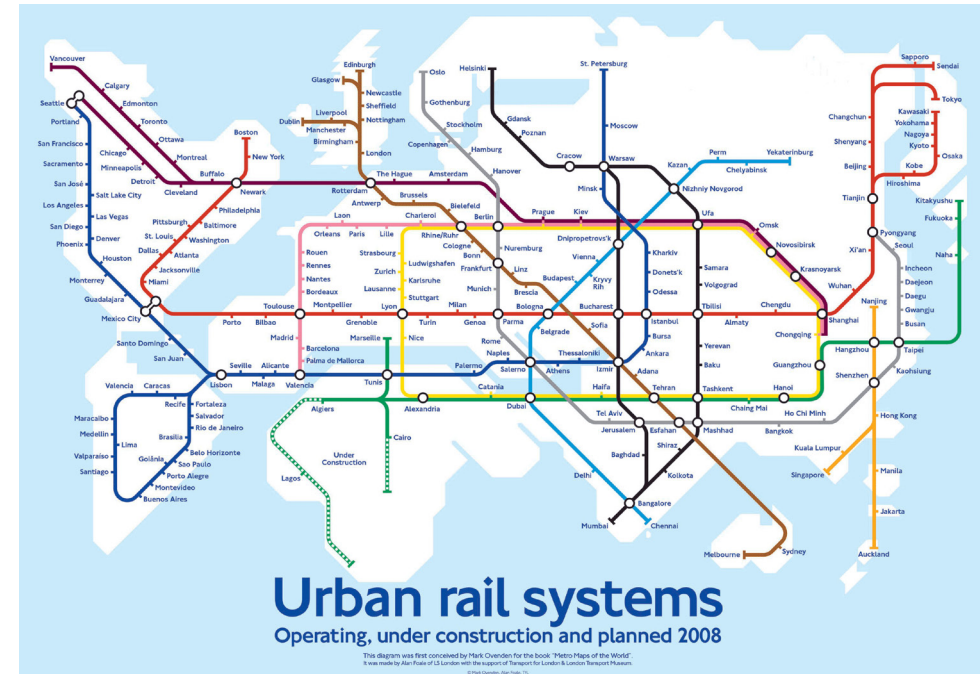


Fig 19 *Metro Maps of the World*, Mark Ovenden, 2007.



Fig 20 *Mapping the Stars: The Great Bear*, Simon Patterson, 2002.

When using the visual language of cartography, it's important to keep in mind that humans have had a long time to get used to using maps—a recent finding by archaeologists identified what could be a 14,000 year old map carved on a rock,¹⁰ and therefore as a culture we are already familiar with the existing conventions coming from maps. For example, always placing north at the top of the map, which has been the standard ever since Ptolemy put it there in the second century.¹¹ “The language of cartography has become so ingrained that it has become invisible,” writes Owens (2012, p.7). Without thinking about it, we understand a blue squiggle as a river, a dot as a town, a star as a capital city, and a double black line is a road (2012). The London and New York subway maps are other examples of mappings that have become so globally iconic that we understand at a glance how to interpret the colorful lines, even when applied tongue-in-cheek to organize things that aren't trains, such as world cities **[Fig 19]** or famous historical figures **[Fig 20]**.

10 carving found in Spain, as described in the *New Scientist* online, 2009

11 Ptolemy's
Geographia, 150 AD

“

**Maps are too
important
to be left to
cartographers
alone.**

”

John Brian Harley

2.4 Representation of Place in Graphic Design

Graphic designers are aptly positioned to explore the representation of place through both visual and textual approaches. A client may enlist a graphic designer to create an infographic or to map points of interest of a pre-selected space, but graphic designers can also work in the areas of critical and personal cartographies using the tools of graphic design. Several research projects have been developed by designers in the area of mapping, and some, such as the projects of Alison Barnes or Kate McLean, take a graphic design approach. Even in the social sciences, Michael Pryke’s study of Potsdamer Platz in Berlin “employs forms of visual and audio montage to show something of the making of spaces.”¹² Such methods relate to traditional geographic methods such as exploration and fieldwork. In the project, video clips, sounds, and pictures portray the atmosphere of the Potsdamer Platz, and although Pryke doesn’t have a design background, his use of image montage to capture to document the square and the dramatic transformation of Berlin can be considered an example of a geographer using the tools of a visual artist to explore notions of place.

Alison Barnes

The research and creative work of Alison Barnes has been highly influential on my project. Her 2003 work developed an early iteration of her mapping methodology by mapping all the graffiti in New Basford, Nottingham, UK. Barnes described her exploration as such:

“beneath the surface of New Basford, going beyond the seemingly identikit streets and houses, and attempting to represent a sense of place. My methodology was that of the anthropologist, seeking out signs and interventions of a low-tech, personal and vernacular nature. These were recorded and used to develop a series of maps charting non-traditional elements such as graffiti, decorative brick features and memories. The maps (approx 900mm square) were produced on translucent stock that enabled two different maps to be overlaid and further conclusions drawn” (Barnes 2011, para. 3).

12 The rapid construction of Potsdamer Platz in the former East Berlin. Full article: <http://cgj.sagepub.com/content/9/4/472.full.pdf>

The project was later profiled in Bestley and Noble’s *Visual Research* as an example of graphic design used as a research method, in a case study entitled *Mapping Meaning*. In the project, Barnes made an extremely thorough survey of the graffiti markings in her bounded area [Fig 21], and the map she created records all readable instances in the neighborhood in the location where it was found (Barnes, 2007). According to Bestley and Noble, Barnes’ project “attempted to investigate the human dimension often lacking within traditional forms of urban mapping such as street maps” (Bestley & Noble 2005, p.73). By focusing and zeroing in on the minutiae of alternative visual signs that others might completely discount for the petty vandalism that it is (scrawled street graffiti), Barnes is able to paint an alternate portrait of place (Bestley & Noble 2005). The work can also be positioned as a study in the vernacular—which in this context means the non-designed, such as these graffiti markings, which can offer valuable information about the people and culture of a neighborhood. According to Barnes, writing in the journal *Cultural Geographies*, “As a graphic designer I had appreciated the design of maps, accepting them as graphic representations of space and an unquestioned truth. However, through this project I became interested in cartography, as it is the intersection between geography and graphic design. I wished not to pursue the craft of map-making to a purely aesthetic end, but rather to explore a geo/graphic approach, developing content and meaning, and engaging with the human dimension that seems lacking within conventional forms of mapping” (Barnes 2007, p. 139). The results of Barnes’ experiments are not visually splashy. Instead they seem to be intended for a closer reading, as they consist of many small textual elements. In the New Basford projects Barnes plays with the use of generative systems, foreshadowing her dissertation work. For example, the graffiti is categorized by subject, which is represented by different colored dots. In addition to the position and orientation, she also maintained the misspellings and the upper/lower case of the writings.

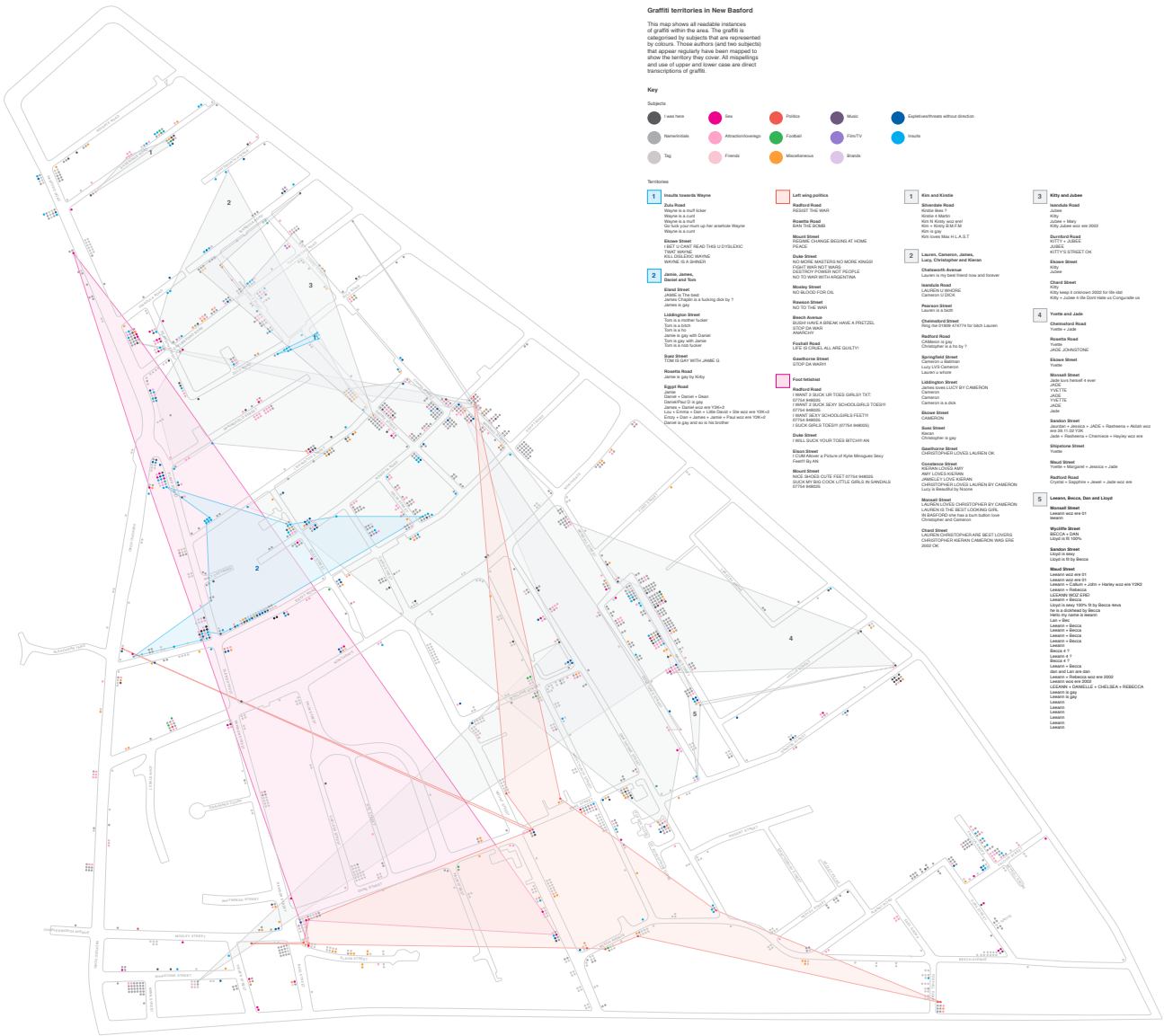


Fig 21 Graffiti Territories in New Basford, Alison Barnes, 2003

Barnes’ dissertation, *Realizing The Geo/Graphic Landscape Of The Everyday: A Practice Led Investigation Into An Interdisciplinary Geo/Graphic Design Process*, is a perfect example of looking at the creation of maps from an exploratory and experiential perspective [Fig 22] [Fig 23]. Her dissertation, produced for her PhD at The University of the Arts, London, focused on a single London neighborhood, Hackney, and delves into the cultural and sensory facets of this specific place in order to present a portrait of a neighborhood on the cusp of great change (Barnes 2011). Through observation and experiments, Barnes was able to gather an unconventional data set, and rather than mapping it according to the rules of traditional information design, she applied the visual vocabulary of letterpress printing, typography, book-making and other skills to map the neighborhood through a graphic design approach. So, as graphic design was as vital to the research process as to the design and map-making process, Barnes’ work

was instrumental in paving the way for this project and her research methodology was highly germane to the subject at hand. Barnes addressed how she avoided the pitfalls of working in a self-directed way by referencing the work of the walkwalkwalk collective¹³ and the idea of salience hierarchy, which I will discuss in more depth in my methodology section. Barnes’ project takes a very simple and somewhat automatic action—that of walking and observing—and through her thoroughness and thoughtfulness in content gathering, she transforms it into a designed narrative. In her introduction, she writes that she highlighted the practice of walking as a valid way to explore place, both from an artistic and a geographic approach (Barnes, 2011, p.29).

Bridging the divide between experiencing and signifying place, the time Barnes spent on the ground and immersing herself in the neighborhood culture resulted in the design of small books that collected and analyzed pieces of her experiences in Hackney through typographic exploration. For example, the *Freecycle* project [Fig 24] used postings from the London-equivalent of the ‘free’ section on Craigslist as its material. On her portfolio website, Barnes (2011) writes “This book was developed from an analysis of messages posted to the Hackney Freecycle group over a six month period from July to December 2009. The Hackney Freecycle group is very active, with up to seventy-five messages posted per day. I therefore sampled the data by extracting one week’s messages per month. Analyzing the data over a six month period brings a temporal aspect to the project, one which shows something of the ongoing ‘process’ of Freecycle and the circulation of stuff within Hackney” (Barnes 2011, para. 2). This book essentially mapped a non-physical network, but it doesn’t look like a traditional infographic.

Barnes’ presenting and re-presenting of the tidbits she gathered during her primary research is an example of a graphic designer using the processes of graphic design to create and add layers of meaning to the map—often of things that wouldn’t tradition-

¹³ <http://www.walkwalkwalk.org.uk/toplevelpages/about.html>



Fig 22 *Stuff*, Alison Barnes, 2010.



Fig 23 *Type Cast*, Alison Barnes, 2009. All Barnes images retrieved from: <http://alisonbarnesonlineportfolio.tumblr.com/>

Fig 24 *Hackney Freecycle*, Alison Barnes, 2011.

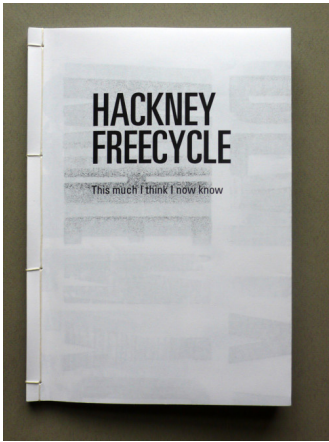
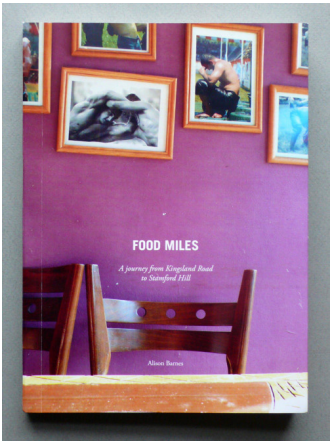


Fig 25 *Food Miles*, Alison Barnes, 2011.



ally be mapped. For example, Barnes writes, “Whilst geographers have predominantly challenged the nature of representation via written means, large numbers of artists have explored the potential of the city, and its representation, within their work. Cosgrove (*Else/Where: Mapping*, 2006, p.150) goes as far to suggest that ‘scientific’ cartography is unable to capture the contemporary city.” In Barnes’ book *Food Miles* (part of the Geo/graphic Hackney exploration), Barnes takes a very contemporary approach—the city as its food. *Food Miles* [Fig 25], which was the final design test project examined in the dissertation, emphasized Hackney’s diversity and multi-cultural composition. Barnes writes:

“I identified the old Roman Road, the A10, which stretches from Kingsland Road at the southern tip of Hackney, to Stamford Hill at the northern-most, as something of a ‘spine’ of the borough. It is a stretch of road that offers multi-sensory evidence of Hackney’s diverse population—from the pocket of Vietnamese restaurants at the bottom of Kingsland Road, through the Turkish community in Dalston and Stoke Newington, up to the Jewish shops at Stamford Hill. Whilst mapping the street, and recording images of interest, I became acutely aware of just how many of the commercial premises are restaurants or grocery shops, with the majority quite clearly defined in the type of cuisine or products they sell. Food is clearly an important part of maintaining one’s identity, particularly amongst diasporic communities...to build new groups on shared cultural or social identity, but also to define and create division between immigrants” (Barnes 2011, p. 202).

Food becomes a visible marker of identity—a local proxy for a place actually geographically far-removed. To experience the diversity in a sensory way, Barnes realized that she needed to eat and drink what was on offer. In the three miles mapped, there were over 150 eating and drinking establishments, and in the project, Barnes visited restaurants and tried a range of food that included all the different ethnic communities that were represented in the neighborhood (Barnes 2011, p.203). Using journaling and photography, Barnes developed a system to record her tasting experiences and turned the results into an artist’s book.

Barnes wrote in her conclusion that “it is the interdisciplinary nature of this study in particular that has proved so rewarding. To situate oneself between two disciplines is at once nerve-wracking and hugely stimulating,” (Barnes, 2011, p.341). The new territory—for a traditionally-educated designer—that she explored, that of cultural geography, helped Barnes to develop a third way of working: neither geographic, nor graphic, but geo/graphic in its aims, methods, outlook and execution (2001, p.341). De Silvey & Yusoff (2006, p.573) state that “art and geography share a common route in the search for knowledge through the medium of vision” and that “art plays an important role in questioning geography’s visual methods.” Works by contemporary artists have increasingly begun to reference geographical forms, such as maps and field notes (Barnes 2011, p.44). Using the principles of typography and the natural parallels to mapping of text on a page, Barnes explored redefining maps in an innovative way, and even though not all of the maps are readable or informative, or even visually pleasing, the interesting and time-consuming nature of the process imbues them with meaning that supplements what appears on the page. Barnes draws from ideas in personal geography and critical map-making to create experience and people-specific mappings. These innovative processes were highlighted in her dissertation, and I will discuss in greater detail how Barnes’ data gathering methodology influenced my approach in the Process section.



Fig 26 Barnes' maps.
Hackney Freecycle spread
(left), Alison Barnes, 2009.

Fig 27–28 (below)
Posters made for *Hackney Conversations*, Alison Barnes, 2009.

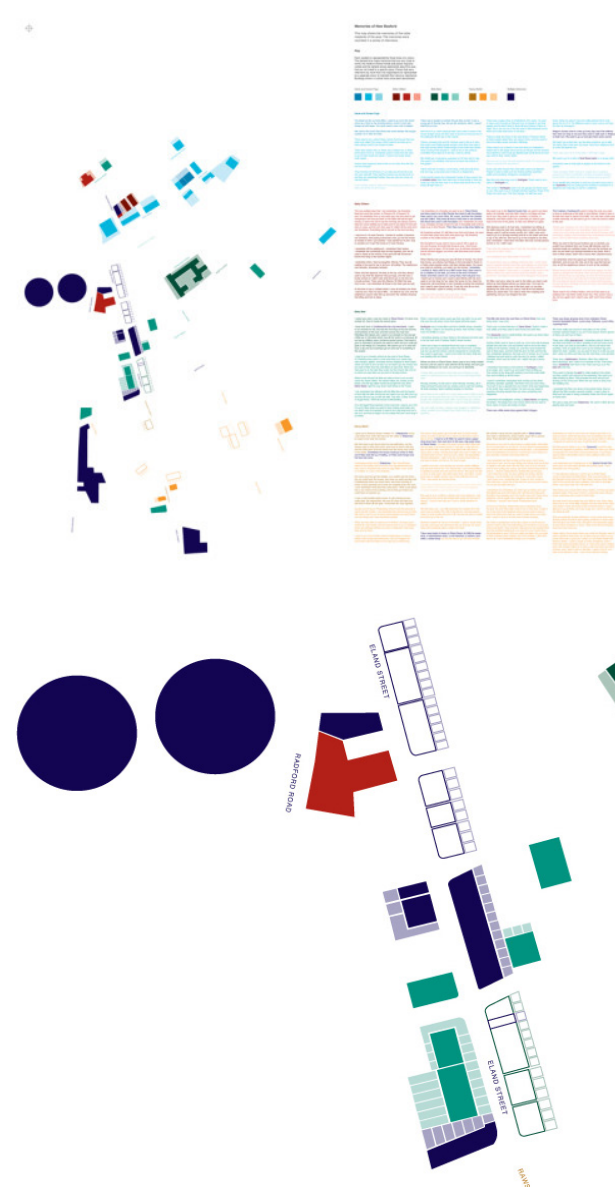


Fig 29 *Memories of New Basford*, Alison Barnes, 2003.

Memories of New Basford

This map shows the memories of five older residents of the area. The memories were recorded in a series of interviews.

Key

Each resident is represented by three tones of a colour. The darkest tone maps memories that are very close to home, the medium shows friends and places regularly visited and the lightest shows statements about the area that are not linked to a specific place. Places that were referred to by more than one respondent are represented by a separate colour to highlight their obvious importance. Buildings shown in outline have since been demolished.

Derek and Doreen Page

Betty Chiltem

Betty Beal

Derek and Doreen Page

The street we live on looks filthy. I used to go out in the street about six o'clock in the morning before I went to work and sweep up both sides. You never used to see a bit of rubbish.

We used to live at 83 Zulu Road with some friends. We bought number 75 in 1955 for £300.

There used to be a school there, before that the pub that was there was called The Haven. Didn't used to be many go in, there always used to be trouble in there.

There were shops near us, there was a bakery two or three doors down from us. Everybody used to come from the area to go for their bread and cakes. It used to be lovely bread, fresh baked.

Doctors and surgeons used to live on our road, from the City and the General.

They knocked em all down on our side and across the road, but ours were left. They built the houses now across from us and they are absolutely terrible, they are only two rooms up and two down.

If any houses come for sale now the housing associations buy them, put all the riff raff in them.

Betty Chiltern

The very earliest days that I can remember, me Grandma lived just round the corner, on Pearson St, 5 Pearson St, and I do remember from a very early age, that she used to get everybody's rent and put them on the table with all the right money on each one and it was the morning she always used to take her cocoa matting up to make sure it was clean for the rent man to come, and the rent man used to collect all the rents from me Grandmas. Everything had to be just so the rent morning.

I was born in 10 Irene Terrace. I moved to number 2 because me Grandma, with paying everybody's rent, got me the house at number 2 when I got married. I was married at 18 and I was so excited cos I'd got this house at 2 Irene Terrace.

I remember all the neighbours, I remember their names.
I remember the community that we had together, how we all

There was a murder in number 83 just after we left. It was a young girl on Boxing Day, she got life sentence. Mind, I expect she'll be out now.

Next door to us, when anybody died, they used to come to her house straight away and she used to lay em out and put em on the sideboard till the day of the funeral.

There's a hostel at 26 and 28. Doctors used to live in it, then they sold it and Polish people bought it and when they died it was sold and the MIND hostel bought it and when that closed down Turning Point bought it. I used to be on the advisory

Mrs Smith got a road party organised on VE day and VJ day. She used to do cobbling, she had a hut down the bottom of the garden.

There were lots of shops, a wool shop, a fish and chip shop, fruit and veg, a pop shop and a beer-off, a Shipstone's.

At the bottom where the Community Centre is there used to be a cobbler's shop there then there was a shop facing it, then you

come up a bit and then near to us there were about five or six shops all right near us.

I do remember on a Sunday we used to go to Eland Street and there used to be a Mrs Revels that used to sell chocolates, there used to be a post office, Mr Levers, and then the chemist was Mr Collins. They were all more or less next to one another.

Mrs Revel she used to sell chocolates and I remember we used to go, Sundays we had a treat of a bar of chocolate each and we used to go to Mrs Revel's. Then there was a chip shop higher up.

My husband worked, it's still there now that wood place, he used to work there years and years and years ago. My husband worked on the trolley buses as well.

Me Grandma's house used to have a porch with a gate on,

but now its gone, its lovely that house is now, I don't know whether you've been. Oh its lovely now, its all been blocked in and its all been leaved, you know, with that stone and it looks

Pedro Pina

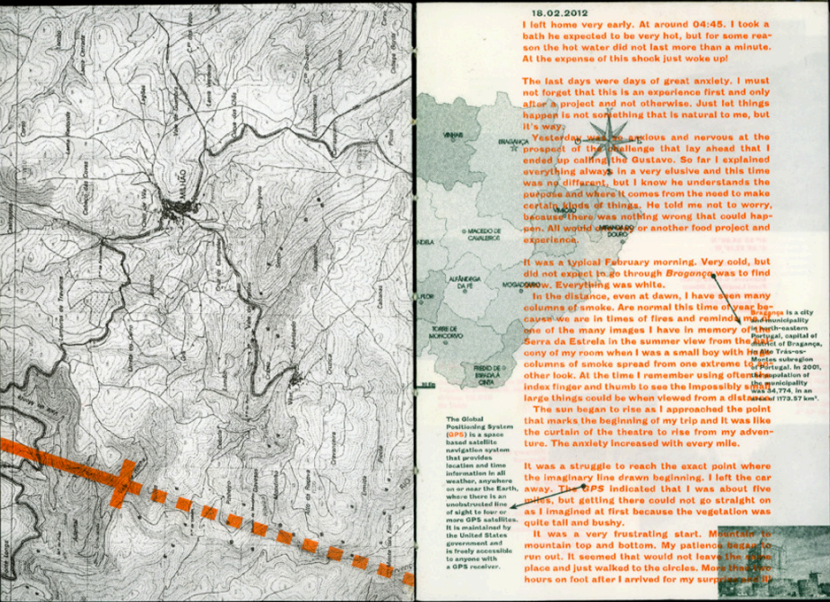
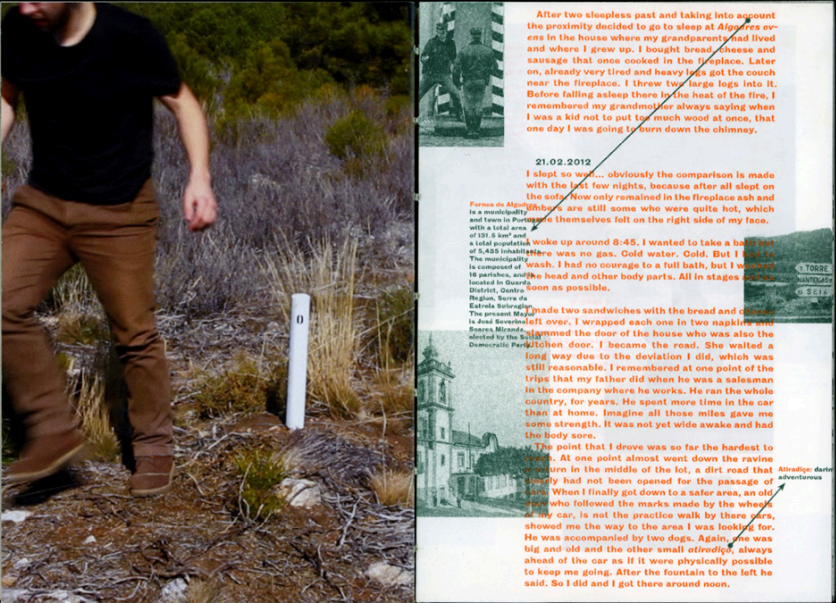
Another important inspiration is the work of Pedro Pina, a Portuguese designer who during his master work at the Royal College of Art in London developed a project that touched on elements of mapping and generative systems [Fig 30–31]. Pina’s work involves the design of systems that a designer sets in motion to turn data/input into visual output. I had the opportunity to discuss with him the development of this process and various obstacles he encountered along the way. Pina drew the longest straight line that he could across Portugal on the map—from the northeast down to the cliffs of Sagres at the westernmost point of the country. He then attempted to walk that line, initially on foot. However, after some attempts this proved impossible. He re-calibrated his plan to drive around the line, stopping to rejoin it on foot and then placing markers down every certain number of kilometers. During the journey, he collected items and talked to people he met along the way. Once, he told me, an irate farmer even chased him off his land with a hatchet.

Part of what I found really interesting about his project was how it was as much about the concept of translation as it was about mapping. This seemed particularly relevant to me as a foreigner in Porto—constantly getting things ‘lost in translation.’ He used Google Translate to automatically change his journals from Portuguese to English (which provided the text) and kept all the inevitable errors in. He took no pictures and instead used only the first result on Google Images. Pina’s commitment to happenstance is both liberating to the designer (freed from needing to make every single little decision) and risky. This data-driven approach remained personal however, as everything was filtered through the lens of Pedro’s journey and his impressions of the places and people he encountered. Looking at a design project from this angle is an interesting approach, as it frees the designer from the tyranny of needing to micromanage every single decision, even while working with personal and subjective material. Pina’s final work consisted of a small, hand-made book documenting the journey and including photographs, journal entries and maps, and a video installation ‘zooming’ to each of the markers he placed to demarcate the line [Fig 32].



Fig 32 Pina’s line marker on the ground. Video still. *Elsewhere*, Pedro Pina, 2012.

Fig 30–31 Spreads from Pina’s book. *Elsewhere*, Pedro Pina, 2012.



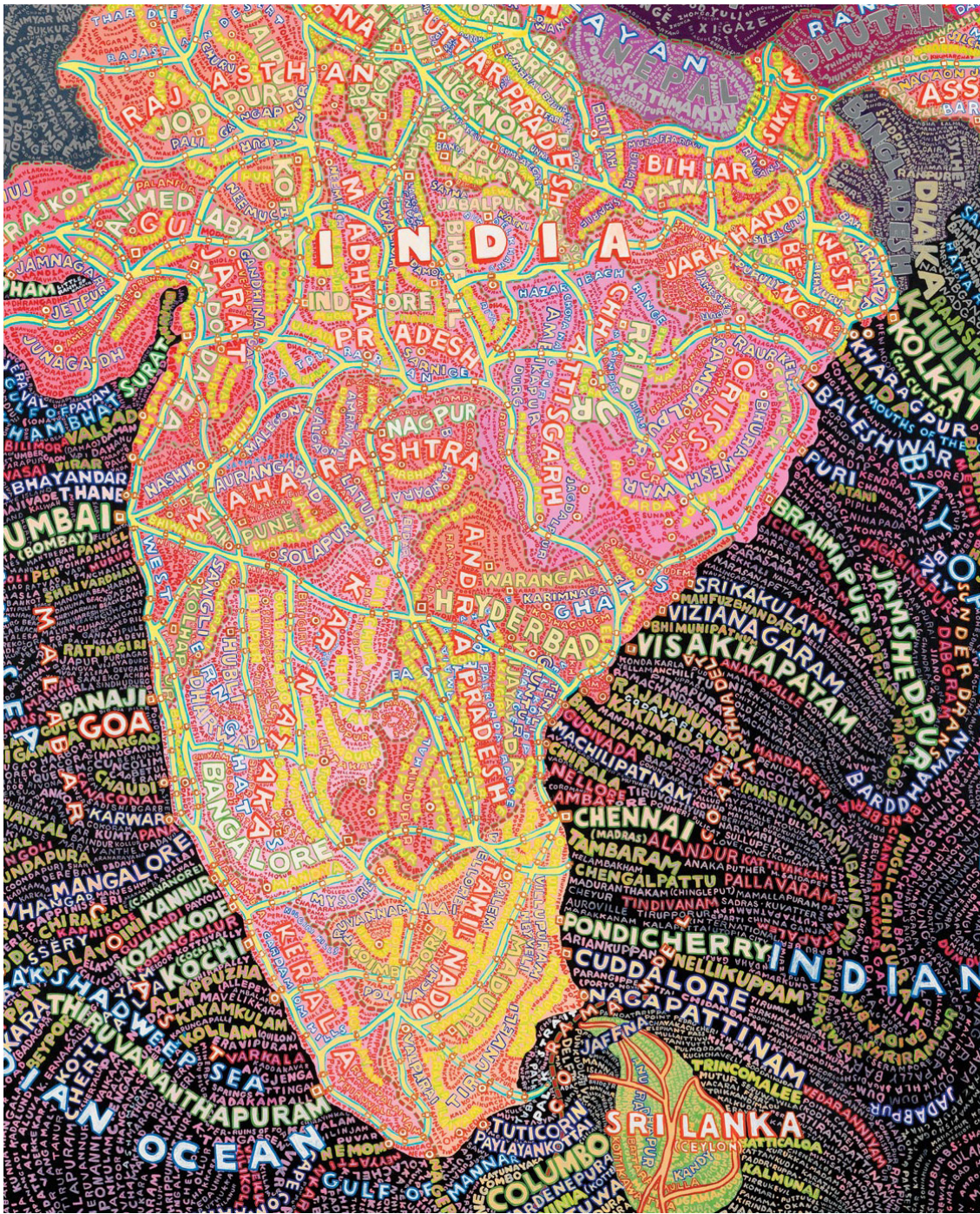


Fig 33 Scher's map of India. Paula Scher, *India*, 2010.



Fig 34 Detail. NYC Transit, Paula Scher, 2007.

Paula Scher

The wildly colorful and lettering-packed maps of Paula Scher delight the viewer, and they are also an example of a self-initiated map-making project by a graphic designer, although she now also makes maps for client commissions (McCarthy, 2013b, p.145). According to the New York design studio Pentagram’s website, where Scher is a partner, “In the 1990s, Paula Scher began painting colorful typographic maps of the world, its continents, countries, islands, oceans, cities, streets and neighborhoods [Fig 33–34]. Obsessive, opinionated and more than a little personal, the paintings were a reaction against information overload and the constant stream of news, which, like the paintings, present skewed versions of reality in a deceptively authoritative way.” Seemingly detaching themselves from reality, Scher’s painted maps revel in visual chaos, with place and country names crashing into one another and the lettering forming the shapes of countries in greens and pinks, oranges and reds. According to Scher herself:¹⁴

“I began painting maps to invent my own complicated narrative about the way I see and feel about the world. I wanted to list what I know about the world from memory, from impressions, from media, and from general information overload. These are paintings of distortions.”

One of Scher’s most iconic and reproduced maps is the map of global commerce, called World Trade. Wobbly borders and overlapping lines representing trade routes criss-cross the map. Scher’s maps are also a nod to critical geography—Scher says that her father, “worked on aerial photography for the U.S. Geological Service in the 1950s and taught her that maps were never totally accurate.” With a this critical eye, she paints an exuberant picture of an out-of-control, alive, and crowded planet and blurs the lines between art and design.

¹⁴ <http://new.pentagram.com/2011/10/new-work-paula-scher-maps/>

15 Conventional placement of the Prime Meridian, or 0° longitude.

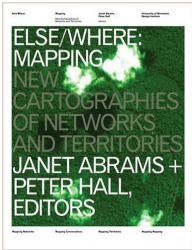


Fig 35 *Else/Where: Mapping*

Meridian Drawing

In the comprehensive book of essays on mapping in graphic design, *Else/Where: Mapping New Cartographies of Networks and Territories*, the editors Janet Abrams and Peter Hall commissioned an impressive project to illustrate the book [Fig 35]. Rather than mapping a territory, artist Jeremy Wood mapped on the territory, writing, using his footsteps, giant letters across the landscape in Greenwich, U.K.¹⁵ Seen from above, the GPS tracks write a Herman Melville quote, “It is not down on any map; true places never are” [Fig 36]. In his essay he described in great detail the painstaking process it takes to create his GPS-lettering: avoiding obstacles and aggressive dogs (he was bitten on the chin while trying to draw out the word PLACES, but didn’t want to deviate and spoil his line), climbing fences and tramping through mud. Woods developed his methods on many walks, even some air trips, to the point where he was able to gauge distances from the ground with fluidity in order to create legible lettering.

Looking back from nearly a decade in the future from when this project was created, the technological aspect of this work no longer seems impressive, now that we can all easily be equipped with GPS tracking apps and watches that report our movements back to us with ever increasing levels of fidelity. For example, I once unknowingly left a training app running in the background of my phone and then took a flight across the Atlantic. I opened it a few weeks later to read with surprise “Congratulations Alice! You are in the top 1% of runners! You ran 5,041 miles!” and see my progress drawn as an eerily straight diagonal across the ocean from New York to Madrid.

However, the intersection between lettering and the landscape in this project create some interesting thinking points. Woods was the designer, however he functioned inside of the limitations of what was on the ground and the limits of his own physical capabilities. The events and moments he experienced during his mapping become part of the map itself. Of creating part of the *Meridian* drawing on a golf course, he writes,

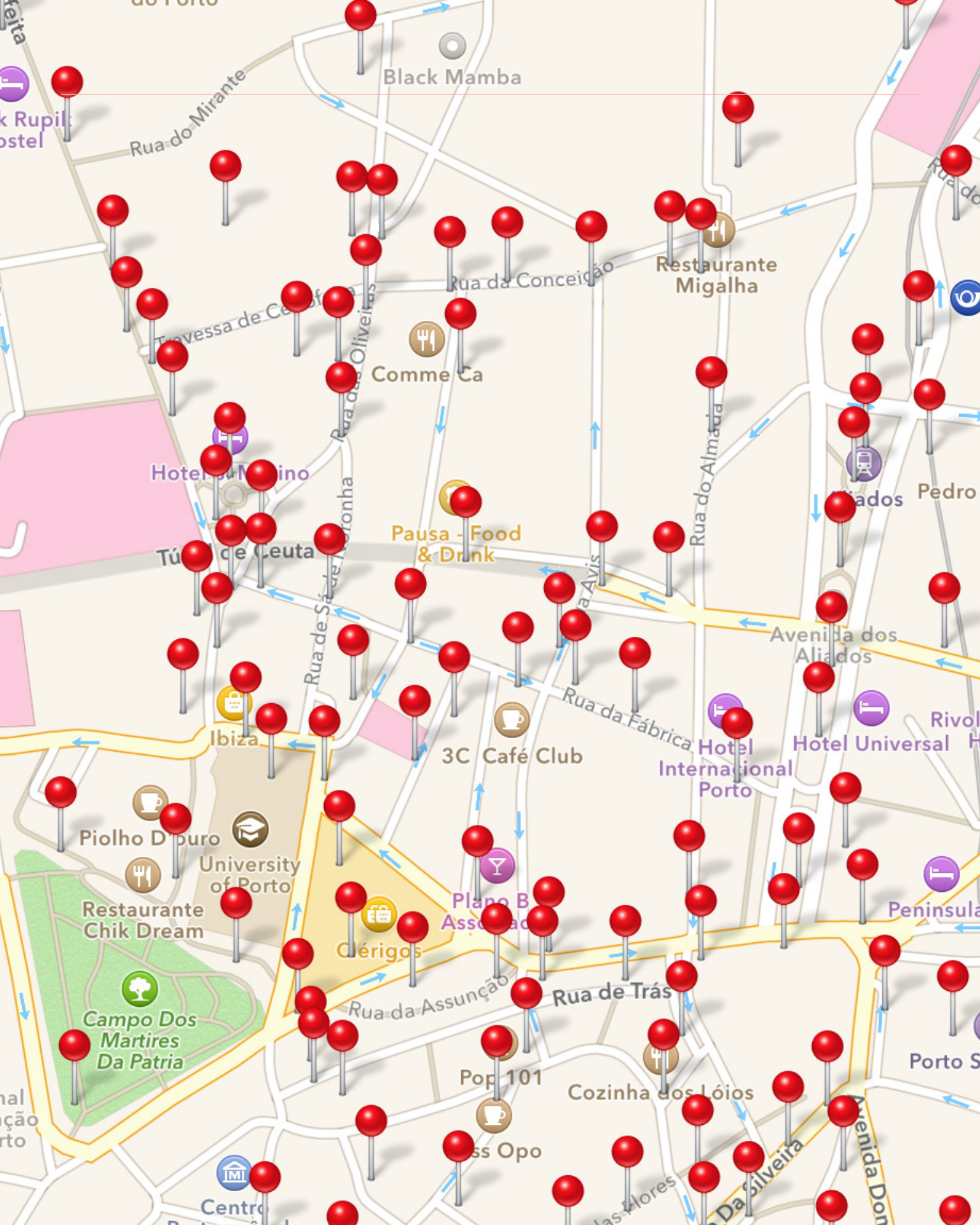


Fig 36 “It is not down on any map, true places never are.” —Herman Melville

Meridian Drawing, Jeremy Wood, 2005.

“I started writing immediately, criss-crossing the fairways and greens, climbing through the roughs and stepping over bunkers and holes. Still unsure of golfing etiquette, I momentarily froze as a man who was lining up his shot asked what I was doing. I swiftly told him that I had permission to be there but he asked and specifically about the thing in my hand, whether it was the same type of thing he had in his car. I couldn’t really stop and chat because I was carefully traveling along the main stroke of the T in IT and there was a 90° turn ahead” (Woods, *Else/Where* 2006, p. 274).

In reading Woods’ journal of the process, the audience can experience the visual map as well as Woods’ memory map simultaneously, giving a second layer of meaning to the quote: the story of the lettering. Clearly there are many interesting precedents for exploring mapping and map-making through graphic design processes. In particular, examining the work of designers Barnes, Woods, and Pina and how their mapping interacted with the place being mapped was invaluable to me as I set out to create my own project methodology. Furthermore, I gained inspiration for the whimsy in my project from how Woods’, Scher’s and Pina’s work blurred the boundaries between designing and creating art. Finally, Barnes’ innovative use of visual research methods made a valuable contribution to my investigation of Porto as a city, and Pina’s use of generative systems particularly informed the process that I developed for working in Praça Carlos Alberto.



3.1 Mapping Porto

I arrived in Porto in October 2014 to study at the Escola Superior de Artes e Design, which is actually located in Matosinhos, a beach suburb adjacent to Porto. My interaction with the city up until that point had been limited—just two rainy days the previous February. During that visit, the city felt very visually foreign to me as an American, even for one who had already spent periods of time in Europe. With its baroque churches, hundreds of *azulejo* [Fig 37] ceramic tiles (usually blue and white) covering the buildings, pink and ochre colored stucco, and steep streets paved with patterns of black and white marble, there was so much to look at when I stepped outside my apartment. Even on a gray day, the city explodes with color and graphic elements—type, lettering, color, shapes, mosaic, architecture, and street art [Fig 38]. However, underneath the visual exuberance, the city remains infused with the characteristic national melancholy; the Portuguese call it *saudade*, a feeling of nostalgia, or a longing for what was or what might have been. Although gentrification has already begun its inexorable march forward, I wondered if this nostalgia had anything to do with why so much of what was old and dilapidated in the city still remained standing. In Porto, craftsmen and artisans are responsible for the majority of the city’s landscape, including, and in particular, the signage. The unique visual heritage was appealing to me from a research perspective, and as a designer interested in place, the city was perfect for exploring.

The modern city, too, is subtly and not so subtly marked many hundreds of ways by objects, signs and symbols that exist only to map it and help us read the way. We insert small clues throughout the built environment to enable identification and orientation in cultural and geographical matters. Church spires and skyscrapers over-reach sight lines and provide orientation and locus, textured curb stones mark the boundary between road and walkway, signs identify buildings and their purpose or ownership, brass studs set into the pavement delineate property boundaries, viewpoints along major routes relate goal to starting point, and different districts are identified by their unique building types (Owens 2012, p.16).

Fig 37



Fig 38



My perspective as an outsider in Porto would affect my research. According to Allison Barnes, “Retaining this perspective is vital, and Hammersley & Atkinson (2007, p. 90) suggest that ‘the comfortable sense of “being at home” is a danger signal’ and that there must always be ‘some social and intellectual distance’ to enable the analytic work” (Barnes 2011, p.110). I have had the opportunity to think about the representation of place from a graphic designer’s perspective, but also from that of a foreign resident and I realized that my curiosity was a tool that I could leverage in the course of the research. When I initially begin the project, it took both a different form and explored a different area of research than currently. However, my initial research was also motivated by the experience of being a foreigner in Porto and seeing things with ‘fresh eyes.’

From this contextual backdrop, I developed my mapping project by moving from a more objective categorization/mapping project into a more subjective one consisting of illustrations of place. The project was begun in October of 2014 as a much more limited endeavor. I had the idea to map all the vernacular lettering in Porto, in an app or another digital platform, so that visitors could access this rich visual legacy and go on a typographic walking tour of Porto. I had noticed immediately that the city was full of amazing examples of vernacular type, relics of the past with a whimsy, naiveté, and attention to craft that has been lost in other cities wherein the urban landscape has become increasingly sanitized and homogeneous. Or instead—for better or for worse depending on one’s perspective—the original signage has been reincarnated in a faux-vernacular style that seeks to evoke a retro or rustic flavor, but is unable to shed its own ‘designedness’. When I decided to change and broaden my research question, I wondered if there was any way to keep the research I had already completed, but approach it from a completely different direction. I realized what was most interesting to me about my project was the mapping aspect. I started to consider the project more about the act and process of mapping and less about the specific theme of vernacular lettering. It seemed natural to use the city of Porto as a case study because it was the landscape that was accessible to me to explore in depth.

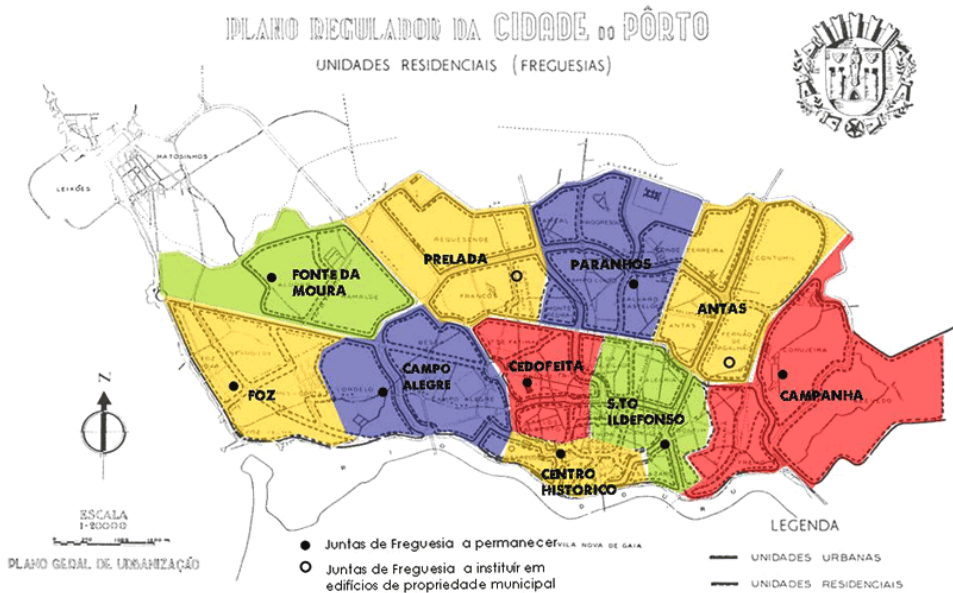


Fig 39 1940s map showing the areas of Porto. The *Centro Historico* is where the research was conducted. Retrieved from: <http://portoantigo.taf.net/dp/node/8015>

My initial area of inquiry was the city center, the *centro historico* [Fig 39]. The bounding area included the *freguesias* (officially demarcated neighborhoods) of Sé, Santo Idelfonso, Miragaia, Vitória, Cedofeita, and São Nicolau and I found it to be rich with data but exhausting to cover extensively, because I was relying on little more than my feet and my sketchbook. I began to consider other ways to limit the scope of my research that was better suited to the project’s time frame and allow me to focus deeper. After discussion with my advisor, I settled on the exploration of a single plaza: the Praça Carlos Alberto. Located in the northwestern part of the city center, near a large double church and adjacent to the pedestrian shopping street of Cedofeita, the plaza has many cafés and small restaurants and sees a diverse foot traffic of students (coming from the nearby university), shoppers and professionals. In the center is a World War One memorial. I did not undertake much research into the history of the location before beginning my primary research, preferring instead to let the sensory (especially the visual) landscape guide me on my journey. I considered how I could take a graphic design approach to create a visual “portrait” of this place, and I arrived at the research question: How can a graphic designer’s tools be used to map a place?

“
**Showing
complexity is
hard work.**
”

Edward Tufte

3.2 Information Design

As I completed the first phase of my secondary research, I began my research into the field of information design. I hoped that a background in the principles of design for information and data would inform me as I considered how to turn my primary research into visuals. I knew that I wanted to collect a wide range of data points (photographs, recordings, words, measurements, observations) and explore different ways to represent or illustrate them. But first I needed to immerse myself in the conventions of designing for information.

Information design has exploded in recent years as a valuable tool for communicating and understanding networks, connections and movement on a scale that stretches from the personal to the global. Typically, the information to be handled is given to the designer by a client, likely one who has a vested interest in seeing the information presented in accordance with their agenda. However, according to Bestley and Noble, “An important aspect of design authorship and the self-initiated editing and visual communication of the content lies within the field of information design. The designer can collect information and treat it in such a way as to emphasize new meaning which may be inherent in familiar content” (2005, p.73). Likewise, if a designer is doing the mapping, from data collection to display, these same possibilities exist—as it can be argued that mapping is a sub-field of information design. Maps can organize and present data in a way that is useful or revealing or beautiful. The latter two are of the most interest to me in this investigation. In *Information is Beautiful*, designer David McCandless challenged himself with an independent project to represent all kinds of data about the world, from global economies, to different flu strains, to types of sandwiches. McCandless writes, “80% of the work involved in creating an infographic is data-gathering, shaping and checking. Making the data juicy” (McCandless 2015, “Our Data,” para.3).

Conventions of Cartography

Cartography already has “an arsenal of iconographic, geometric, linguistic and formal conventions with which to mediate source data into pictorial representation” (Owens 2012, p.7). Maps use two systems of signs, icons and text, to relay information. Furthermore, Owens outlines the four important conventions of designing maps, which he calls metapatterns: Matrix, Network, Point and Nest. Matrix simply means boundaries and divisions (what is next to what?), a network shows systems (roads, communications, etc.), a point marks discrete objects, and a nested layer refers to contour lines or continua—for example, the bands in a topographic relief map. However, the universality of these general metapatterns means that they can also be applied to information maps as well. “The metapatterns, matrix, network, point and nest, are adaptable to infinite range or non-geographic narratives...Mapping can be applied to ideas and information,” (2012, p.8) adding that in the Western world, we tend to “restrict our definition of maps to faithfully scaled reproductions of linear spatial relations. Islamic and Southern Indian art pushes metapatterns much further, to create intuitive topological representations of human or physical relations independent of spatial relations” (2012, p.8).

Many maps that we are familiar with come with a legend or key included to explain the colors or symbols used. The term legend implies that its entries are generic, as with terrain types on a map, while a key implies that its entries are specific, and ‘unlocks’ a specific map. For example, a city map might use one particular shape to designate a type of building. According to Owens, the legend also establishes a rhetorical style for the map. Originally representing data in the natural sciences, thematic maps have exploded as tools for understanding our world. Blending information design and cartography, a thematic map is designed to show a particular type of data connected with a specific geographic area. At a glance, the cartographic language of maps can help the

viewer to grasp complex geographically tied data. In a thematic map, the designer presents just “enough contextual information about the general geographic place without overtaking the visual presentation of the thematic data” (Meirelles, 2013, p.122).

Other terms important to the discussion of cartography and design are:

- Projection:** The point of view, also refers to the mathematical calculation used to transform the three-dimensional globe onto a two-dimensional plane;
- Orientation:** The hierarchy of the map;
- Scale:** Refers to the degree of reduction on the map (Meirelles, 2013, p.120), and also refers to the time span and the horizons chosen for the mapping.

Cartography, which is by nature information rich, has also developed a number of conventions considered visual ‘best-practices.’ Meanwhile, the principles of map-making are frequently being applied to non-spatial information design. Below are some other principles of map-specific information design that I examined in my research.

Color

In mapping, for instance, color often serves to label or to distinguish between fields. In Edward Tufte’s *Envisioning Information*, he examines the example of *The Cartographic Relief Presentation* and its author Eduard Imhof’s design rules for Swiss maps (as one can imagine, there are a lot of rules involved in Swiss maps). Imhof’s cartography rules seek to “minimize color damage” (Tufte 2001, p.82); in the guidelines, light and bright colors shouldn’t be placed congruently, and strong, bright and/or heavy colors should be limited to indicate the extremes—deep turquoise for ocean trenches, for example, or bright orange for a mountain peak. Because these topographic extremes occur spar-

ingly and cover a small area, this advice has been very successful in traditional cartography. In another classic example, the ‘four-color map conjecture’ defines the minimum number of colors needed to make a map of the world, without two identically colored countries ending up contiguous (Sobel, Garfield 2013, p.13).

Color is a natural quantifier, with a perceptually continuous span of incredible fineness (Tufte 2001, p.91), meaning that the human eye can distinguish between two similar but different colors with an almost unbelievable accuracy. It is important to approach color with caution in both mapping and information design as to avoid competition between visual elements. Tufte writes that color should be used with restraint, saying that color spots against a light or muted field highlight data and create harmony (Tufte 2001, p.83). However, one can return to the mapping work of Paula Scher as a counterpoint to Tufte’s dictate, as an example of an artistic map with many, many bright colors—yet one that still works as a piece of design both on the level of the details and as a whole. If the objective of the map is to express abundance, it can make sense to use more colors than in traditional cartography.

Density

How much detail is too much? There is disagreement on this point among designers. Tufte rails against what he calls the “posterization” of data—meaning low-density, simplified designs. Simplification can result in data points being spread across multiple pages, separating the micro and macro views. Tufte argues that the designer should seek to represent all relevant information across a single page, as “micro/macro designs enforce both local and global comparisons and, at the same time, avoid the disruption of context switching. All told, exactly what is needed for reasoning about information” (Tufte 2001, p.50). A high data-to-ink ratio means a great deal of information delivered to viewers using fewer visual elements. On the other hand, in *Designing with the Mind*

in Mind, an introduction to user interface design, the author Jeff Johnson argues that the simpler presentations of data are easier to comprehend by the audience. Discussing the idea of ‘perceptual filtering’ (that is, we only see what we are looking for), Johnson writes that we immediately look for what matches our goal, and potentially missing out on other things on the page if they are unrelated (2010, p.6).

Semiotics

As mentioned above, maps use two types of signs, symbols and text, to convey information. But what exactly is a sign? According to Bestley & Nobel, language can be understood as a system of signs: a sign is made up of a signifier (a sound or image) and a signified (the concept or meaning). The relationship between the signifier and the signified is arbitrary (2005, p.95), and the study of signs is called semiotics. Therefore on a map, we understand meaning through the interpretation of signs, in particular, icons, indices, and symbols.¹⁶ Icons show a likeness to what they represent—an icon could be a small, simplified drawing of a factory to represent an industrial area, or could also be as close to life as a photograph. Indices or indications show meaning through physical connection or proximity (lines, arrows, circles of magnification), and symbols have arbitrary meanings associated by use (for example, the you-are-here inverted teardrop seen so often in digital maps). Maps rely so heavily on these three types of signs because most maps only map objects that are supposed to remain static for a longtime. One of the questions my research investigated was the result of mappings that were made from ephemeral data, for example sounds and smells. This means any final mapping of these qualities can only ever be an indication of possibility (McLean, 2015, para. 21), rather than a record of what is physically in place at the time the viewer reads the map.

16 Icon:



Indice:



Symbol:



Networks

Networks and information design go hand-in-hand. Networks are collections of nodes (data points) and links showing patterns of connections (Meirelles 2013, p.49). Types of network layouts and visualization include: matrices, node-link networks (lines connecting to points or objects), and surprisingly, lists. These networks can be subdivided into: geography-based, community structure, radial community structure, force-directed, circular, linear, and Sankey diagrams, which, fittingly, look like ‘snaky’ lines stacked on top of each other. An interesting geographic example of a network map is the groundbreaking map of all Facebook connections created by an engineer for the company scraping friend data in 2010 [Fig 40]. The map creates a ghostly map of the world (with some parts of the globe conspicuously dark—it was created before Facebook had penetrated Africa) just by an extended application of the node-link design representing human relationships.

Smart Maps

As technology changes, cartography intersects with user-interface design. We see this in everyday examples such as Google Maps, which has opened up many possibilities for the map-reader, and other applications that embed maps and track users’ location. For example, digital maps have layers that can be toggled on and off to show traffic (which Google chose to represent using the colors of a stoplight, with deep red being a near standstill, and green being a clear road). Audiences have become so fluent in the street view of the world from navigational applications that I knew it was something that I wanted to avoid in my illustrations of the *praça*. Still, there are many signaling conventions of map-making that are hard to shake—for example, when I first looked at the plaza on the map—after I had already been there many times—north and ‘top,’ fused in my mind, and now I find it hard to consider representing the plaza in another orientation.



Fig 40 Map of all Facebook connections created by Paul Butler in 2010. Retrieved from: <https://www.facebook.com/notes/facebook-engineering/visualizing-friendships/469716398919>

17 *Los Angeles Times*,
“California Commute:
New traffic apps may
be pushing cars into
residential areas.”
January 5th, 2015.

Smartphone maps are made possible thanks to GIS technology (Geographic Information System), millions of data points with their own geographical address. GIS can capture, store, manipulate, analyze, manage, and present all types of spatial or geographical data. Essentially, GIS transforms a database into a map (Owens 2012, p.9), and in the last two decades has fundamentally altered the way we interact with maps and the process of mapping. Take for example the smartphone navigation app Waze, which gained worldwide popularity as a traffic avoidance technology. Waze is an interesting example because it is an instance of a map mapping itself in real-time. With wide-spread adpotion, users are rerouted using aggregate GPS data to avoid high-density intersections and so side-streets become clogged (a phenomenon that has been observed in Los Angeles, one of the first cities to adopt the app on a wide-scale¹⁷), and the map must reroute users continuously in real-time to respond to the changing reality that it itself created. Due to this frenzy of mapping activity, a new frontier for information designers is using GIS data, unparalleled in its ability to present intricate patterns and trends. Maps are constantly produced and (re)produced through the democratization of production in participatory GIS, where we upload our own data, often without really being conscious of it. Critically speaking, it is also opening up a number of questions about the exact nature of a map or an infographic. For example, “When is a map first consumed? After it leaves the hands of its authors? Do authors not consume their own representation, see themselves in its images, reconstruct their own desires through this object? (Del Casino & Hanna, p. 35). Collaborative maps change as more and more users participate, blurring the definition between the map-maker and the map-user.



3.3 Initial Test Projects

My initial idea, as I had mentioned in the first section of this chapter, was to photograph, catalogue, and map the vernacular lettering in Porto. Molly Woodward, a designer who created one of the first online collections of photographs of vernacular signage from around the world, defines “vernacular typography as the found lettering that exists in the built environment and surrounds us everyday. It doesn’t have to be pretty or use an existing typeface, it’s just any visual representation of language” (Woodward, “Vernacular Typography,” 2012, para.2). “I took over two-hundred photographs of examples in Porto as part of my primary research [Fig 41], and, planning to compare Porto with a second case-study city, I took another one-hundred photographs in Los Angeles. An excerpt from my proposal:

An observant person walking in the streets of Porto, Portugal will notice the quirky, often looping lettering, crafted in metal and neon that advertises cafés, clothing shops, and optometrists. These storefront signs have been part of the city’s visual landscape for an unknown number of years, and many have resisted being eclipsed by mass-produced signage. Likewise, in Los Angeles, it’s hard to miss the iconic neon theatre names and the painted shop signs done in the Mexican *rotulista* [sign-maker] tradition hawking *tortas* or auto-repair.

This project will examine the tradition of vernacular lettering, specifically fascia lettering in a retail context, and how it can be a part of a visitor’s visual experience in these two very different cities. The project will catalogue examples that are permanent and can be viewed and mapped from the street, and with this data create a way-finding mobile app that will spark the user’s observations. In this era of gentrification and vanishing vernacular lettering, the intention of using case studies is to create a model for a user-interface that can be applied globally in cities to help pedestrians view and explore the signage.

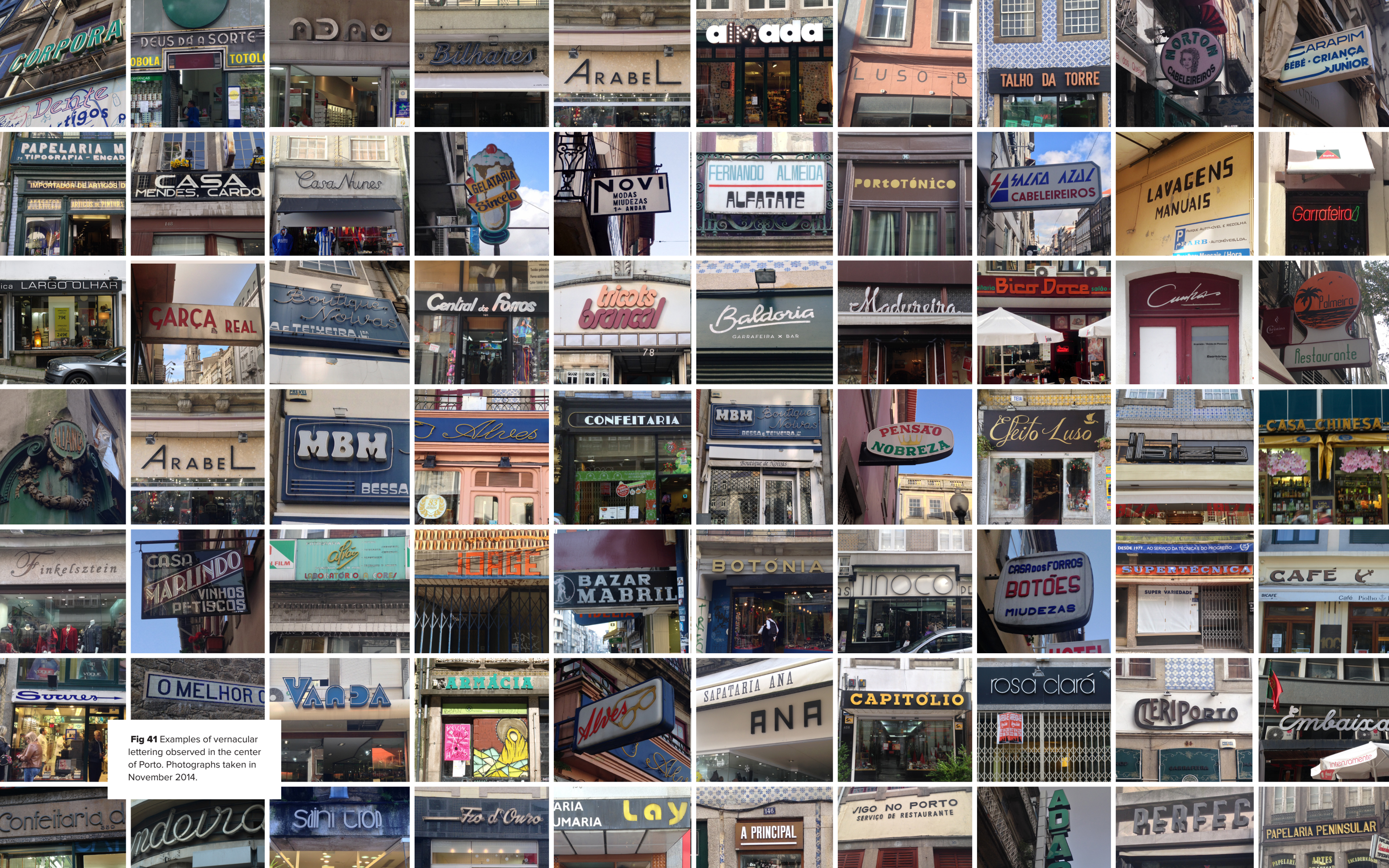


Fig 41 Examples of vernacular lettering observed in the center of Porto. Photographs taken in November 2014.

18 For further information: *Um Porto Gráfico* by João Mota <https://www.behance.net/gallery/9989345/Um-Porto-Grafico>

However, I abandoned the project when it became clear that the idea was too similar to existing in-progress works, including the *Um Porto Gráfico* photography project.¹⁸ However, the subject was so interesting I decided to retain it as one of my test maps when I began my first test projects in Porto in December. The initial part of my creative plan was to create six unique mappings of Porto—inspired by the ‘multiple maps’ philosophy from critical geography—as I decided that it would be difficult to set parameters and specify a final direction for the project without testing my process first. In my proposal I wrote that “Possible datasets include: smell maps, map of vernacular lettering, running maps, topographic maps, mapping coffee shops, flight route maps, and demographic maps. Furthermore, these are general enough categories that the methodology could be taken as a model for testing in other cities.” The final six mappings that I ultimately developed were:

- Vernacular Lettering Map
- Smell Map
- Color Map
- Activity Map
- Food Map
- Sound Map

I was also interested in seeing what layering effects and qualities of juxtaposition could be revealed by going the multiple mappings route—the novel possibilities of combinations intrigued me. My ultimate choice of subjects had to do with things I felt were integral to the ‘feel’ of a city, but that were things that would rarely be put down on a map. My objective was to explore the transitory territory of a designer acting as a field researcher, and then apply what I had learned about cartography and data visualizations to my results.

Vernacular Lettering Map

My first mapping attempt focused on *fascia* retail signage, a broad category, but one that excluded types of signs such as doctors/dentists, advertisements, public buildings etc. According to Phil Baines and Catherine Dixon, writing in their book *Signs: Lettering in the Environment*, *fascia* signage is applied to a building after construction and has a life of its own, such as storefront lettering (2003, p.118). Vernacular lettering observed on the street combines the lettering itself and the material, and great examples abound particularly in Spain and Portugal (p.136). I walked around the city center over a span of several weeks, choosing to take the photographs with my iPhone 5 rather than a camera so that the geotag would be embedded with the signs’ images. I made a thorough survey of the vernacular typography in central Porto, but had I continued with this test project, much more time would have been needed to create an exhaustive list of all examples. I sorted and organized my final collection of images, creating illustrations of the best and more original lettering. I planned to categorize the type of retail operation with colors, and I planned to place the colored lettering on their relative locations with as much fidelity as possible to create a final mapping of vernacular lettering in the city. However, the project evolved in the meantime and the map was never completed. Instead, my focus shifted to a smaller area of the city, a single plaza, and mapping vernacular lettering no longer made sense while focusing on a smaller location. Although I didn’t carry the initial concept over into the case study phase, I felt that the results of my data gathering were visually interesting, and the exploration formed an interesting first step in my mapping experimentations. Furthermore, the process of spotting and ‘collecting’ the lettering examples, my first attempt at conducting a visual research methodology, taught me to interact with the city in a more observant manner [Fig 42].

Fig 42 Examples of vernacular lettering from Porto

CAPITÓLIO

BAZAR

VANDA

saint trop

NOVI

Palmeira

Baldoria

Mendonça

Aí Proo

LAVAGENS
MANUAIS

BAC-ELAR. IRMÃOL

Staves →

MARLINDO

finogold

Central *das* Fomos

TOCA DOCE

TROPICAL

L U S O - B A Z A R

PENSAO
NOBREZA

Livraria LATINA

Feito Luso

PADARIA NACIONAL

TINOCO

— Fio d'Ouro

Bico Doce

Casa Nunes

ALFATATE

TUPI

O SALSICHINHA FAST FOOD

PORTOTONICO

BOTÕES

Abres

O Rei dos Queijos

ARABEL

Armazens Branco

BOTÓNIA

Boutique
Novas

“
**Walking blurs
the boundaries
between the arts.**
”

Karen O'Rourke

3.4 Methodology

After the first six test projects were underway, it became apparent that I would need to refine my methodology in order to achieve more meaningful and visually interesting results. My initial area of inquiry was the center of Porto,¹⁹ and I found it to be rich with data but exhausting to thoroughly explore, because I was relying only on my feet and my sketchbook, and as a single person there was a limited area of the city that I could observe in depth. “The sheer amount of ground to cover was immense, and much of my data was ephemeral of temporary, so as things changed I could metaphorically feel the ground shift beneath my feet in the course of a single session of data collection. One of my other realizations after the first period of data collection was how aiming for scientific accuracy in my research would be futile. First of all, as a graphic designer, I felt I lacked the social science training needed to conduct procedurally valid surveys. Furthermore, working with different kinds of data led to questions. For example, with the Smell Map and the Activity Map, I wasn’t really working with things that could be concretely measured, as in real, factual data. Instead, I was dealing with subjectivity, impressions and sensations—in addition to things that were ephemeral and would never appear the same way twice. I needed to streamline the methodology into something akin to taking the visual pulse of the city: a more creative methodology in order to generate more impressionistic results.

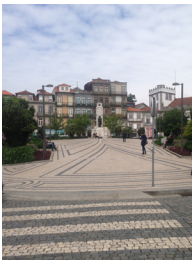
I decided to focus on a small sliver of the city—a particular plaza. I chose the Praça Carlos Alberto, one of my favorite places in the city, because it has a substantial amount of foot traffic, a modest number of tourists, and a variety of cafés and restaurants. The *praça* has several streets branching off it and it has a WWI memorial statue at its center [Fig 43], where black and white paving stones form a mosaic on the ground. The statue is inscribed with “Aos Mortos da Grande Guerra, A Cidade do Porto” (To the Dead in the Great War, the City of Porto). I felt it was a more or less representative place for the whole of Porto, because one can find there a whole spectrum of activity—people walking to work or going to shop, students and tourists relaxing in cafés,

¹⁹ bounded by the river, to the south, Trindade Station to the north, Santa Catarina shopping street to the east, and hospital Santo Antonio to the west

Fig 43



Fig 44 Praça Carlos Alberto



workers eating lunch during the day, elderly residents taking breaks on the benches, and because it includes a museum, an elementary school, a church, a hostel, a pharmacy, and a bar. I felt that changing the focus of the project to something more specific would allow me to dig deeper as a researcher, and to use the additional constraints as a designer to create more creative possibilities. After coming to this decision, I sat one sunny afternoon on one of the benches in the praça and recorded my observations. This type of quiet observation ultimately helped me develop test projects that responded to the space rather than came from outside ideas. My journal from the fifth of May reads:

“Flowers, flowering bushes, palm trees arranged symmetrically around the statue, with larger trees in the back. The buildings behind the statue appear to be almost ordered in ascending height. People resting, walking dogs, guy walking a parrot on his shoulder (?!), student groups dressed for a parade passing along the edge, older people under umbrellas. Several couples of all ages. Along the side, people are taking a late lunch or snack at various cafés. Tourists with cameras. Dogs digging and snuffling. Smell = slightly burnt.”

Designer as Researcher

First of all, I had to consider whether my project would be more about the process or about the final visualizations. In Allison Barnes’ dissertation, she outlines the idea of the designer-researcher as such: “a type of analysis through design practice that, through its physicality, can offer clarifications, realisations and conclusions that may not have been obvious before” (Barnes 2011, p.345). In *Visual Methodologies*, Gillian Rose writes:

“It is important to note that there is a dispersed but persistent body of work in the social sciences that uses various kinds of images as ways of answering research questions (questions which may not be directly concerned with visuality or visual culture), not by examining images but by making them. Both

anthropology and human geography have used visual images as research tools for as long as they have been established as academic disciplines, mostly photographs, diagrams and film in the case of anthropology, and photographs, maps and diagrams in the case of geography” (2001, p.6).

Attempting to work in the mode of designer as researcher was also informed by the concept of design authorship, representing “designers as authors, as entrepreneurs, as activists, as editors, as...___” creating self-initiated works (McCarthy, 2013b, p.9). I purposefully developed the test projects based on things I was curious about. In addition, the freedom and flexibility brought by ever-accelerating mapping technology has given both designers and researchers the ability to use mapping in their social projects and activism. For example, MafiaMaps,²⁰ an app developed by students in Milan, uses iconography to map and keep track of mafia homes, properties and incidents in Italy. “Different colors denote different groups, such as purple for Sicilian *Cosa Nostra* and blue for Calabrian *’ndrangheta*. Icons like handcuffs or buildings help pinpoint specific clans, crimes or investigations” (Marchetti, 2015, para.9).

20 mafiamaps.wiki

Walking as Method

One of the elements that was crucial as to how I integrated critical processes into my primary research was the element of the physical journey and/or walking. “Like walking, mapping is an embodied experience carried out from a particular point of view that makes possible both the finiteness both of my perception and its opening out upon the complete world as a horizon of every perception. Here it is considered as a way to locate ourselves in the world, allowing us to make some sense of our situation and act on it” (O’Rourke 2013, p.p xviii). Walking is one of the most primitive and integral ways in which we experience the city, and walking as a method of inquiry itself has precedence not only in the work of Barnes, but also in many projects coming from the practice of conceptual art. The methodology I developed was based off the “geo/graphic

mapping” process used by Alison Barnes in her mapping of Hackney, London, in particular her use of walking as an exploratory tactic when gathering primary research and developing a sense of ‘place.’ Barnes says that her particular methodology allows her to retain an outsider’s perspective and perhaps notice things that a person just going about the days’ tasks might not.

One of the more challenging aspects of the initial phases of the project was determining the criteria for inclusion. In Barnes’ dissertation, she qualifies the data recorded simply as things that were of interest to her. In my methodology, I drew heavily from Barnes’ work as well as her use of Wolfinger’s (2002) strategy of ‘salience hierarchy.’²¹ Salience hierarchy gives the designer license to decide what to focus on and ‘notice’ the things that capture their attention—again an example in which working as a designer-researcher can be a more creative and subjective enterprise than traditional geographic/social research. Acknowledging the subjective nature of the walking experience, Barnes writes of the researcher’s “ongoing dialogue with place,” (2011, para. 2) and the role that chance played in her journeys around her research area. The idea of dialogue—responding to and engaging with a place—informed the project’s transition from the entire city center to a single plaza.

And finally, I decided to discard the assumption that for a map to be valuable it needs to only indicate fixed features (i.e. permanent for at least ten years)—the *praça* was continually in a state of flux, posters were removed or papered over, graffiti appeared, the bench-sitters arrived or left, and window displays changed with the season. Even though some features remained constant, a visitor’s impression of the place naturally varied depending on the weather, time of day and day of the week. For example, I found it deserted on Sundays, but full until late into the night on weekend nights. One restaurant was almost never open during the hours I visited, but when it did, their sidewalk tables and chairs altered both the landscape and people’s walking paths through the space.

²¹ Wolfinger writes: “Irrespective of any formal strategies for note-taking, researchers’ tacit knowledge and expectations often play a major role in determining which observations are worthy of annotation” (2002, p.85).

Systemization

I had been spending a lot of time considering how to put the data into the visualizations, I needed to address the question of mapping physical versus non-physical characteristics. How could I visualize something as subjective as a smell or a taste? It led me to thinking about using a generative system to create visuals directly from the information and take some of the over-thinking out of the process. An excellent example of how this has been done using crowd-sourced data and an algorithm is the project *Flickr Flow* [Fig 45] by Fernanda Viégas and Martin Wattenberg, in which photographs of Boston Common sourced from Flickr were run through an algorithm that calculated the relative proportions of different colors seen in the photographs in each month of the year (Meirelles 2013, p.7). According to the designers, “*Flickr Flow* is an experiment whose materials are color and time.” In Karen O’Rourke’s comprehensive work, *Walking and Mapping: Artists as Cartographers*, she discusses the use of walking protocols (p.73), tracing the practice back to Marcel Duchamp’s art by instruction.²² In a walking protocol, the artist or designer pre-plans the parameter of the walk, and commits themselves (or the volunteer completing the walk), to stay the course and to respond to what they encountered on the way. The project from Pedro Pina that involved attempting to walk a line straight across Portugal is an example of a walking protocol, and his systematic and geographically-informed approach to book design was very inspirational for this work. Incorporating concepts from designer-as-researcher, walking as method, and generative graphic design, my final three map concepts attempted to achieve a balance between process and result. The following pages will outline my process for the creation of the five final mappings—smell, sound, food, activity and color—from idea generation, to the execution of the research methodology in Praça Carlos Alberto, to the visualizations themselves.



Fig 45 *Flickr Flow*, Fernanda Viégas & Martin Wattenberg, 2009. <http://hint.fm/projects/flickr/>

²² Marcel Duchamp, *Étant donnés*, 1966

Fig 46–48 “San-duiche especial com batatas,” and glass of sangria, and braised octopus.



23 Merriam Webster dictionary definition.

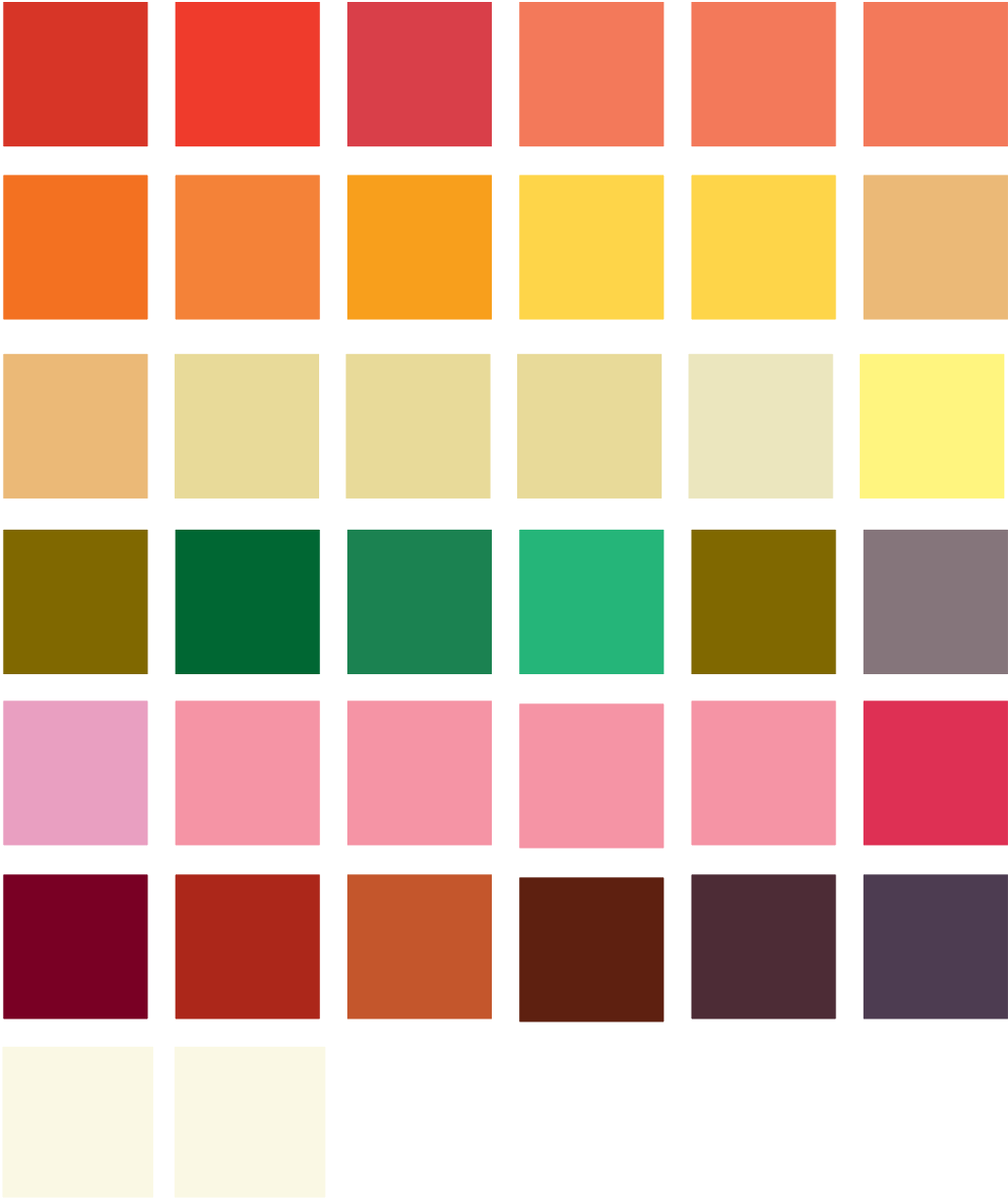
Food Map

The contextual background I researched led me to the *Food Map*, the first of my five final mappings—something that incorporated eating, journaling, and taking pictures. The system I enacted was to visit every eating establishment open for lunch in Praça Carlos Alberto and order the fifteenth item on their menu, whatever it might be [Fig 46–48]. The number fifteen was a purely arbitrary decision. The input information for my visualization would be a combination of observations and photographs of the meal experiences. There were eleven restaurants and cafés in the main part of the plaza, I ate at ten (one, Restaurante Romão, seemed to go on an extended hiatus, and I didn’t see it open until after I finished to collect my data). That left a bakery/take-away shop, three restaurants, three traditional cafés, an American-style coffee shop, and a pizzeria.

I enlisted the help of a friend to go on this food journey with me, and kept track of our orders, observations and general dining experiences, the people we talked to, and the overall bewildered response we received up ordering exactly one item to split between two people. We ended up with some surprising results—braised octopus, a glass of sangria, a banana milkshake, and pizza with anchovies—the only pizza neither of us liked!—and also some typical local fair, for example, *prego no pão*, a piece of steak in a roll, and a “special sandwich,” a grilled ham and cheese sandwich wrapped in melted cheese, sauced up and surrounded by french fries.

I found it initially difficult to design a ‘mechanism’ to translate them from data into visuals. An example of an initial attempt is presented at right [Fig 49]. The colors project, as I explained above, was more self-evident in how the process translated into the visualization. I mentioned the idea of translation above, and also in my earlier analysis of Pina’s project. The word *translate* is defined as ‘to change words from one language into another language’ from the Latin root *translat-*, or “carry across.”²³ Most closely associated with language, the concept is particularly applicable to the idea of cross-cultural encounters. Speaking of foreign languages, Google Translate is the software that most people encounter in terms of programmatic translation based on the input we feed into it. Anyone who has every tried to use Google Translate extensively can recognize the limitations of the programmed translator versus a human one—sometimes the results can be comical [Fig 50]. After several unsuccessful tests,

Fig 49



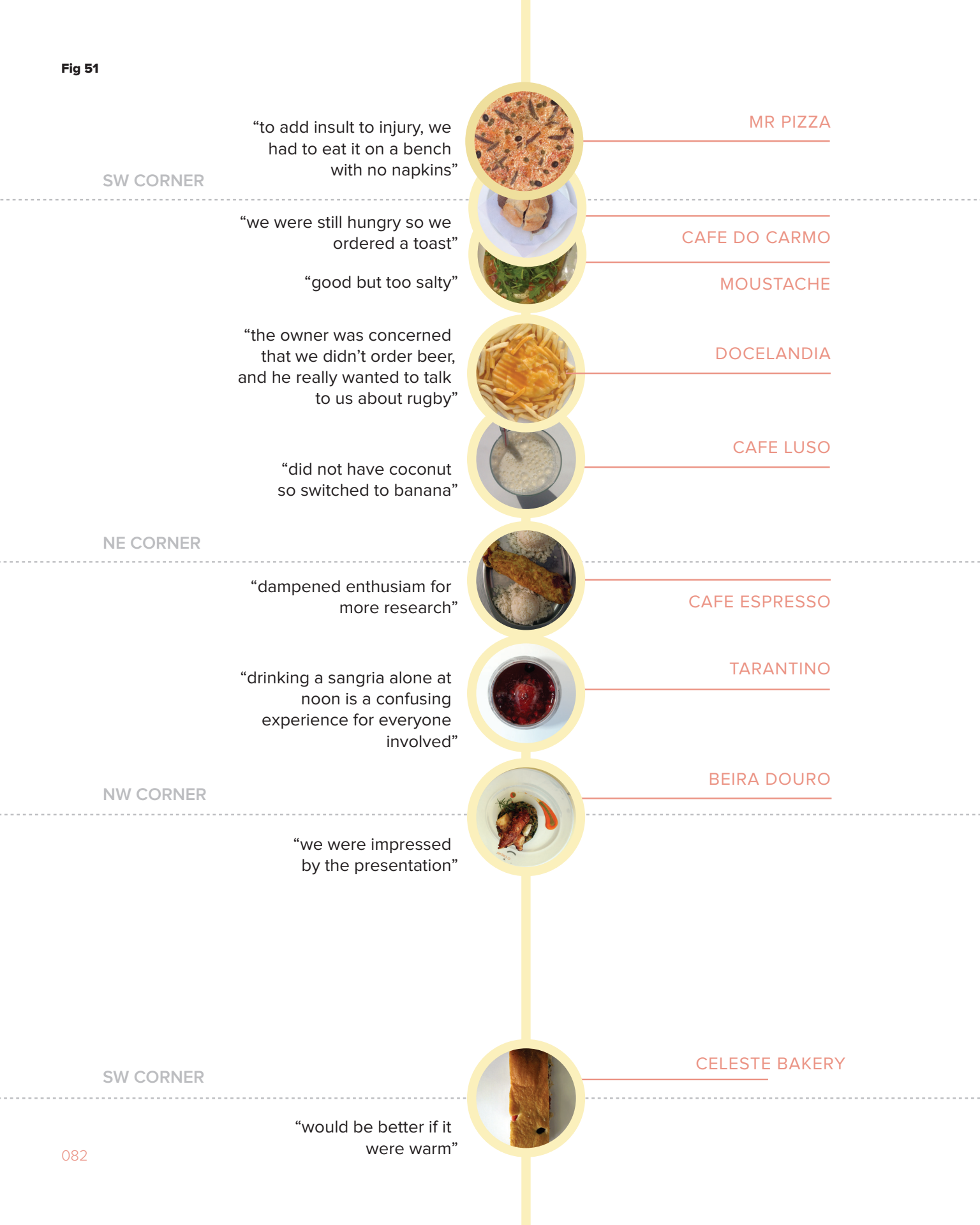


Fig 50

Docelandia | *Tosta Mista Especial com Batatas*
(Google Translate: Joint Special Toast with Potatoes)

€5.40

A typical greasy lunch place. The nice barman/owner was concerned that we didn't order something to drink and he recommended a beer because the sauce was "a little spicy". There WAS a smorgasborg of sauce (spicy orange beer sauce), cheese, fries etc., over a soggy toasted ham and cheese sandwich. I couldn't finish, but the fries were pretty good though. He really wanted to talk to us about rugby, in specific the Italian national rugby team [my friend was Italian]. He told us he used to play rugby. Not very good food but nice people.

I decided that the connecting thread of the project was the eaters' experience and perceptions. The food order that we ended up with provoked many responses in us—amusement, queasiness, happiness, disappointment, and confusion. Because I had journaled the experience extensively, I decided to take my notes on the food journey and turn that into a infographic of the "dining experience" in Praça Carlos Alberto, connecting the dish to an emotion, which is what I ultimately included in the final work. After doing many visual tests of how to represent the eating experience in Praça Carlos Alberto, I decided that I wanted to use my journal entries to describe the experiment (ordering the fifteenth item on the menu on all of the eateries in my sample), and I settled on a presentation that showed the results both chronologically and in their relative geographic relationships. When I was doing the data collection, I made sure to visit the establishments in order (going around the square left-to-right), so I realized that I could use this to create a visualization of the 'food journey.' This simple graphic includes observations, photographs and the establishment's name [Fig 51]. This graphic blended a systematic approach with a sense of whimsy as the unpredictable nature of what the 15th menu item would be, and the reactions of the staff, provided for humorous moments. However, this made more interesting to experience than to design.

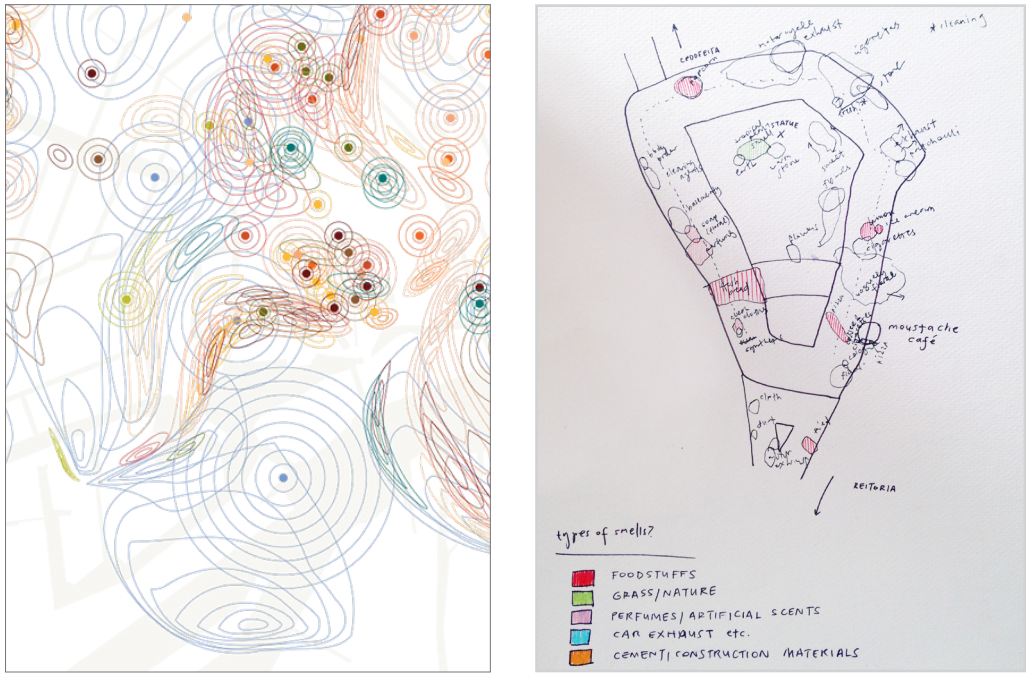


Fig 52 (facing left)
Amsterdam Smell
Map, Kate McLean,
2013.

Fig 53 (facing right) My sketch
of smells in Praça
Carlos Alberto.

People expect Amsterdam to smell primarily of cannabis. Cannabis has a strong smell, equal to asparagus, cleaning products, bacon and the dentists’ surgery in perceived intensity. But it only featured in a couple of neighbourhoods and missed inclusion here. Instead spring 2013 in Amsterdam revealed an abundance of the warm, sugary, powdery sweetness of waffles. Oriental spices emanated from Asian and Surinamese restaurants and supermarkets, pickled herring from the herring stands and markets – a link to one of the city’s key historical industries. Old books were detected in basement doorways and laundry aromas drifted up into the streets (McLean, para. 2).

Smell Map

24 sensorymaps.com

The designer Kate McLean’s smell maps²⁴ are interesting for both their subject and methodology. McLean went on “smell walks” around various cities, recoding information about what she could smell. These highly subjective measurements, specific to a location (as well as a time), allowed McLean to create beautiful and evocative mappings of cities, all from the nose’s perspective. Of course, mapping smells is by nature a highly subjective enterprise—we don’t even have a very good vocabulary to document the data. McLean circumvented these problems by designing a graphic vocabulary to represent her findings, and specifying the connections in a map key. What interested me about McLean’s smell maps were two things: that she was mapping atypical subject matter that was nevertheless crucial to our perceptions of the city, and that what was being mapped were ephemeral sensations [Fig 52]. McLean mapped entire cities, including Milan, Amsterdam and Glasgow. McLean employed “Smell Walks” as her primary method of investigation, writing in her portfolio, “It is estimated that humans have the capacity to discriminate up to 1 trillion smells and our experience is highly individual; to walk and sniff is to know” (McLean, 2015, para. 4). For the map of Amsterdam, she even enlisted volunteers to cover more ground simultaneously and over a period of four days they recorded written descriptions of the smells they encountered:

I decided to try to apply McLean’s methodology to Porto. First, I walked around Porto’s Baixa (downtown) area checking each street on my map, and recorded in my sketchbooks all the smells I noticed along the way, trying to capture as closely as possible its size, intensity and description. From the offset, I was able to distinguish many different smells, but not as many per block as I hoped—in this manner, my nose proved to be a more limiting research tool than I had hoped. Furthermore, a rainy day could obliterate the outdoor smells for the days to follow.

In Praça Carlos Alberto, I spent a part of an afternoon walking in a slow loop around the square, recording the smells in my sketchbook. Above left [Fig 53], is the drawing I generated, and then on the following page [Fig 54] is the cleaned up version. Walking and smelling are normally a subconscious pairing of activities, but through actively experiencing the place through my nose, I found myself automatically beginning to ‘see’ the smells in my mind’s-eye represented by shape and color. McLean described the process as, “an active practice, the whole body is involved as olifactors stoop, bend and stretch. Smell-hunting, they seek out olfactory possibility; road drains, keyholes, inside bushes, along park benches, materiality, humans, non-human animals and plants are all homes to scent” (McLean, 2015b, para. 3) Secondly, creat-

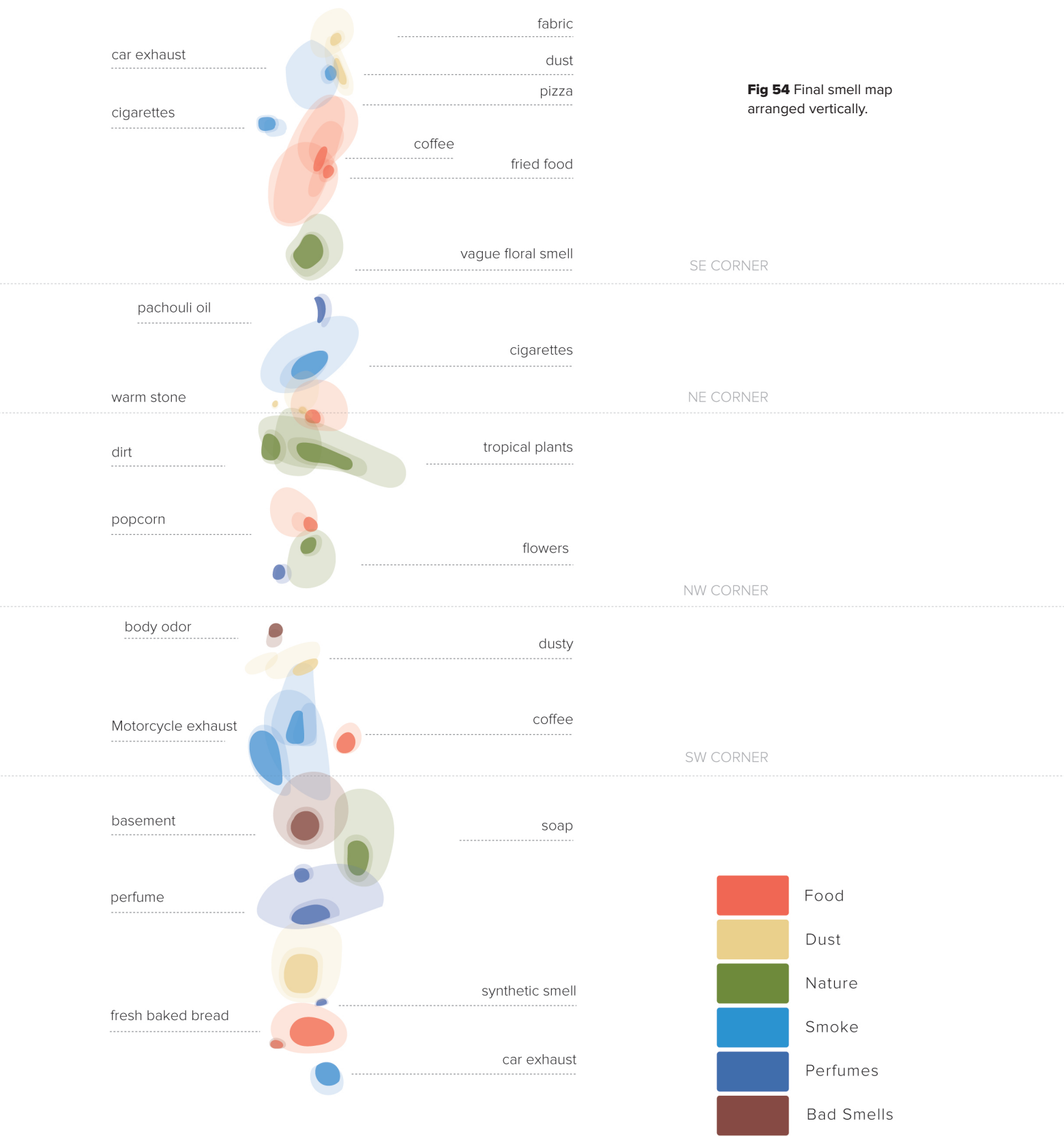


Fig 55 (above) Detail of smell map.

ing a smell map means capturing a unique moment in time—someone duplicating the research method on a different day would almost be guaranteed to arrive at different results. I discovered that smells are nebulous—something we experience horizontally on a geographical plane but also chronologically, and I needed to create a system for translating the non-visual to the visual.

As human beings we immediately and subconsciously categorize detected odors into pleasant, unpleasant, or neutral smells. In the English language, the vocabulary reflects this; an odor or stink connotes something that smells bad, a scent or fragrance generally something that smells good. Just saying “that smells,” or “you smell” without the adjective, is an negative statement, and needs to be qualified with “that smells good” in order to apply to bread baking or perfume. Based on this observation, I decided to use color to ‘code’ the smells I observed into the most common categories appearing in my research: culinary [food cooking, coffee], organic [flowers, rain, grass], inorganic [stone, dust, cloth], disgusting [garbage, feces, body odor, mustiness], artificial [cleaning agents, laundry, chemicals], fragrance [perfume, soap, scented candles], smoke [exhaust, cigarettes]. Then I interpreted the sensory experience graphically and placed the smells in their relative locations across the horizontal axis. I chose to represent the smells with concentric blobs of decreasing opacity because I felt that is how we experience smell while walking—one moment it is striking, and a few steps later it has faded from our ability to perceive it. Influenced by McLean’s methodology but resulting in a different visual style, this was a successful project because I was able to use a systemized approach to illustrate subjective observations.

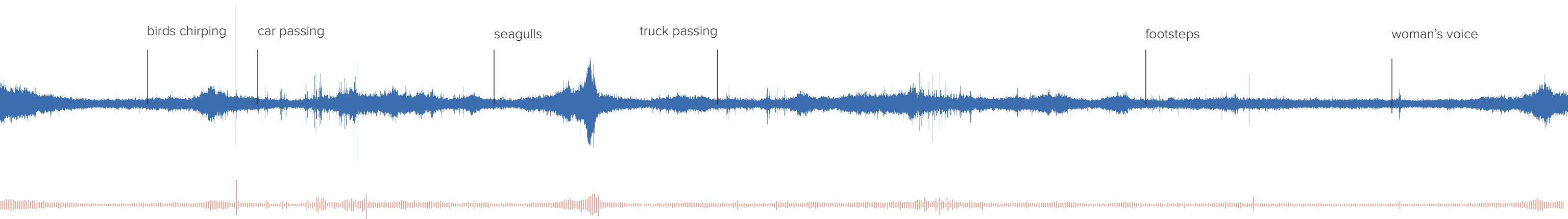
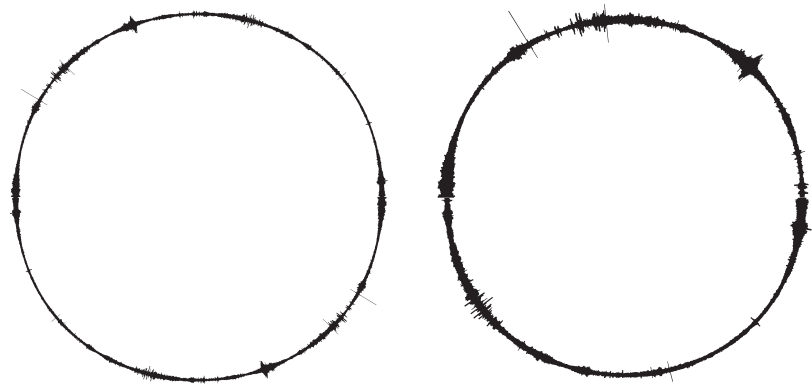


Fig 56 (top) The original waveform, as digitally extracted from an mp3, then redrawn in Adobe Illustrator.

Exploring the portraying the waveform as a circle.



Sound Map

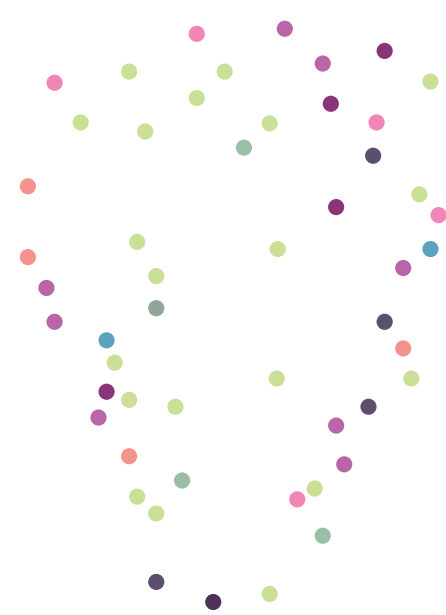
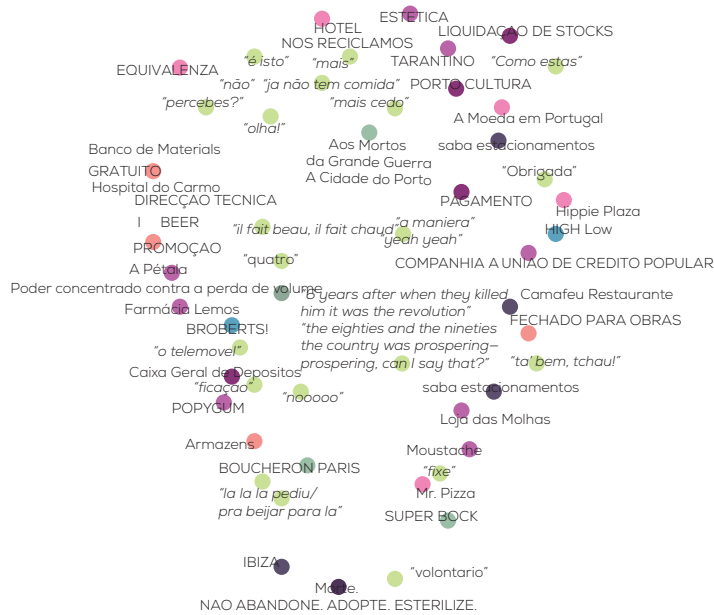
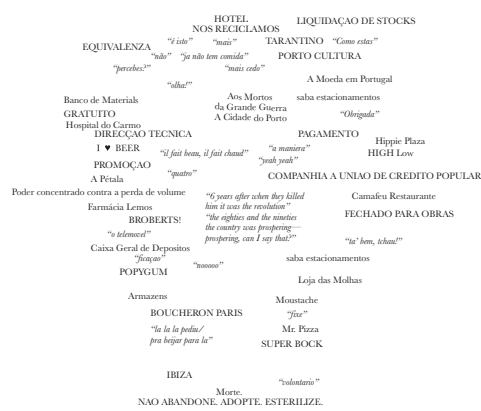
Sound maps are not a new concept. They are traditionally geographic maps, represented digitally, that put emphasis on the sonic representation of a specific location. Sound maps are created by associating landmarks (streets in a city, train stations, stores etc.) with pieces of sound that can be played back. In this case, I would be serving as the collector, arbiter, and interpreter of the sounds. In the first iteration of the map, I stayed in the praça for one hour, recording in my notebook what words I heard and read, and where. From this I developed my mini map as the typographic test projects on the following page [Fig 57], but I wasn't satisfied with the results. Furthermore, there had been much editing on my part—both by choice and not—in the project as there was only so much I could hear or understand of passer-bys' conversations, and I had been selective in general in which spoken and written phrases made it into my notes. In order to capture an additional sample to compare with my initial method, I decided to create a recording of five minutes of sound. I sat stationary on a bench in the center of the *praça*, using my phone microphone to try to catch the conversations of people walking in front of me. My eavesdropping achieved mixed results in terms of sound, but when I ran the mp3 file through a program to extract the sound waveform I was able to generate a classic and instant visualization of sound. Surprisingly, the sound quality was not bad, but because it was a fairly sedate five minute period (birds, cars, and people walking past), there is not a great variation of shape. Despite this, viewing the waveform as a horizontal left-to-right line inspired me to translate other sensory aspects of the *praça* into linear forms as you will see in the following examples. On the left [Fig 56] you can see experiments in which I tried to create a circular rather than linear waveform, but ultimately going with the horizontal version was more fitting.



Fig 57 (above and right)

Recording observations for the “words” test project, based on where they were observed/overheard in Praça Carlos Alberto.

Sometimes I wasn’t sure exactly what I was hearing in Portuguese so I tried to note it down phonetically.



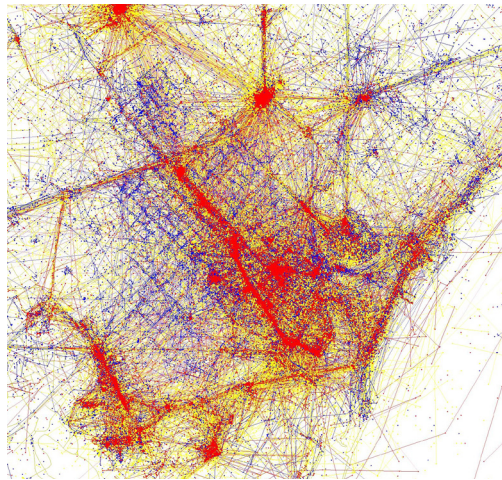


Fig 58 Barcelona, Eric Fischer, 2015.

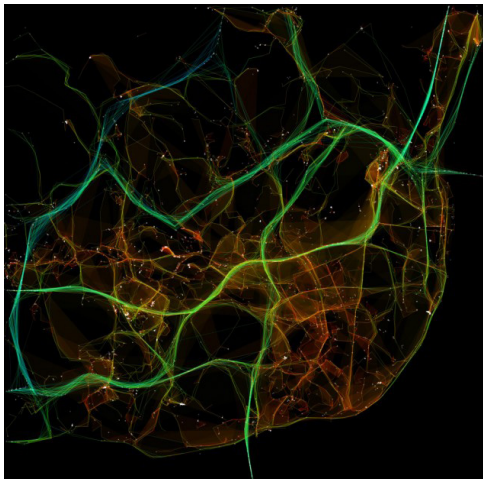


Fig 59 One month of traffic data (October 2009) was used from 1534 vehicles, and then condensed into a 24 hour ‘day.’ Green represents fast traffic and red corresponds to sluggish traffic (MIT Portugal, 2009).

Activity Map

I found the work of data artist Eric Fischer and his tourists vs. local data-distribution maps [Fig 58]. “Blue points on the map are Tweets posted by “Locals:” people who have tweeted in a city during the span of a month or more. Red points are Tweets posted by “Tourists”: people who have tweeted in the city for less than a month and appear from their profiles to be residents of another city (Fischer, 2015). Yellow could go either way. The content activity map naturally lent itself to a dot-distribution mapping like the Locals map, but I also considered how I could factor in the element of time into the representation. A classic way to solve this problem is through side-by-side flow-network maps, such as the traffic flow in Lisbon maps [Fig 59]. However, it is challenging to create something so detailed without the aid of computerized data collection. I landed finally on creating a spatio-temporal solution, where the activity in the five minute period would be displayed as dots, with colors corresponding to people, cars etc. [Fig 62]. And, when the four mappings are displayed side-by-side, the element of time allows for a comparison to be made.

I had already completed research for activity maps of central Porto [Fig 60] at four times of the day: seven a.m., one p.m., seven p.m., and one a.m. Once I had focused

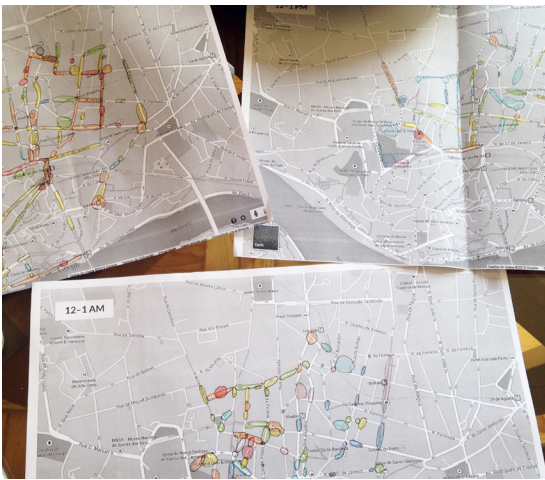


Fig 60 Original activity map sheets I made recording foot traffic in central Porto at different times of day.

my project on a smaller area, I repeated the four observation periods in Praça Carlos Alberto. I counted people, animals and cars passing by, and noted the tallies and where in the square they were. However, I wanted to represent the data in a manner that was more than just dots on a map. Depending on the style of representation, the differences in activity between the time frames considered become more or less pronounced. I also had to consider if my data was meaningful in the first place, as I had collected information on types of passersby (people walking, people sitting, animals, and vehicles) but not precise time-stamps or their directions. So I decided to represent my data on the same geographic y-axis that anchored the rest of my visualizations, placing symbols in their relative locations to indicate the presence of an individual, and using the proximity of the four graphs to set up a comparison of the relative ‘busy-ness’ of the four time periods surveyed [Fig 61]. I measured five minute periods four times during the day, and I was able to record distinct differences between the time periods. Even though I had refined my methodology from the original surveys of central Porto, my problem was not the area, but rather the sheer number of people passing and the manpower of myself working solo wasn’t sufficient. In conclusion, coming back to the book *Information is Beautiful* by David McCandless, it is a challenge to create an engaging visual without sufficiently ‘juicy’ data (McCandless, 2015, para.1).

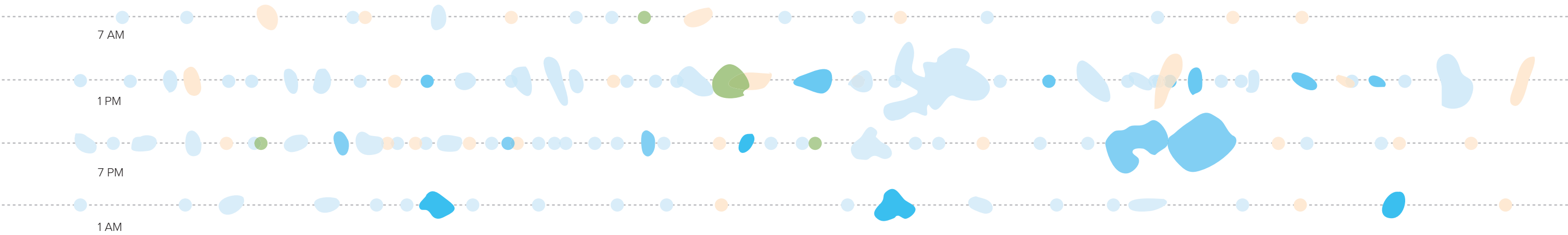
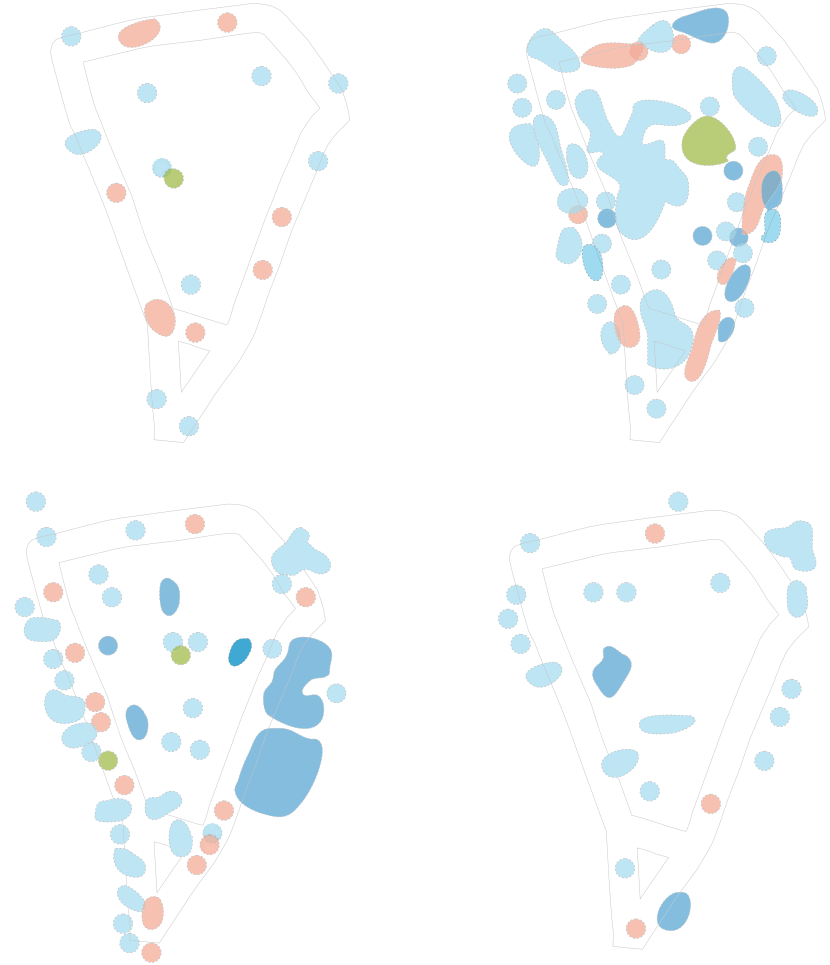


Fig 61 (above)
Activity maps
displayed linearly
from 7 AM, 1 PM, 7
PM, and 1 PM.

Fig 62 (right)
Activity maps
displayed
geographically from
(clockwise from top
left) 7 AM, 1 PM, 7
PM, and 1 PM.



- stationary people
- people in transit
- animals
- vehicles in transit

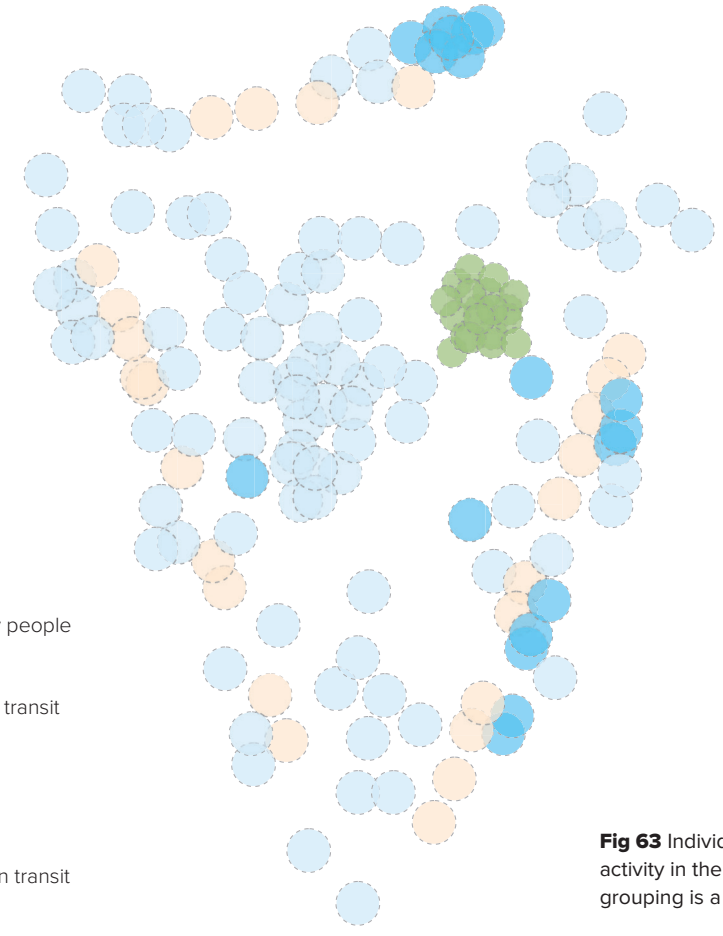


Fig 63 Individual dots representing
activity in the plaza at 1 PM. The green
grouping is a flock of pigeons.



Fig 64 Photographs from the streets of Porto.

Color Map

The prototype for my colors of the *praça* map was originally about the colors of Porto. The azulejo tiles and painted buildings inspired me. I chose three principal streets in the city to sample the colors from the buildings by taking photos of the surfaces **[Fig 64]**. Once I had the photos, I needed to determine a manner to extract or take a reading of their colors. I found the online application Color Thief,²⁵ a piece of code that extracts the primary color based on pixels and the rest of the palette from a photo. I was able to run through photos and quickly generate results. This technique gave me the idea to introduce more systemization into the project. My idea was to record and then map the colors of the streets, and when I changed the location of my project to Praça Carlos Alberto, it was a natural fit to approach the new location through the lens of color. Thinking about the projects I had begun and about generating visuals from data, I developed the final color map project. The systemization of photographs and observations in data visualizations was a challenge but also an opportunity to consider alternative ways of studying a location. My process was to carefully measure every horizontal ‘segment’ in Praça Carlos Alberto—for the purpose of this project I defined each segment as any horizontal length, for example a pillar, a door or a wall, but excluding windows and open doors—basically any segment where the texture changed, and this created something that looked like a multicolor bar code. I had to measure over three-hundred and sixty segments in order to fully circle the praça and then repeat the process with my camera. I acquired the colors from photographs I took of each slice by using Color Thief **[Fig 65]**. In the visualization, that became the color for the whole segment, which I represented with one centimeter equal to one pixel. The advantage of a generative system is that ideally it can be applied to other locations, applying the same basic processes to another place. I considered what other systems I could apply to the rest of my data in order to create visualizations without extensive interventions from me as the designer.

25 colorthief.com

Fig 66 (below)
Notes from the
measurements (in
centimeters).

12	
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22	
35	
22	
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35	
22	
21	
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36	
35	
21	yellow
8	
7	PIPES
8	pipes
20	
70	
42	
24	blk mailbox
42	
10	
9	
42	
9	
10	
10	red pipe
65	
25	
31	
22	
91	green door
27	
32	green tile
42	



Fig 65 The online application Color Thief allowed me to extract dominant colors from a photo of a piece of texture.

Presented on below is a representation of all the vertical sections at my eye-height (for reference, I am 160 centimeters tall) in Praça Carlos Alberto **[Fig 67]**. This creation proved to be one of the more successful translations in the project, because the methodology was simple, consistent, and could be reproduced elsewhere. The biggest challenge in creating this visualization was the sheer scope of the project. Not only was it difficult to measure and organize the data, but the line eventually exceeded the limits of Adobe Illustrator, and I had to ‘fold’ it and continue in rows. The decision to create a horizontal band was informed by my experience walking in a loop around the square from left to right.

Fig 67

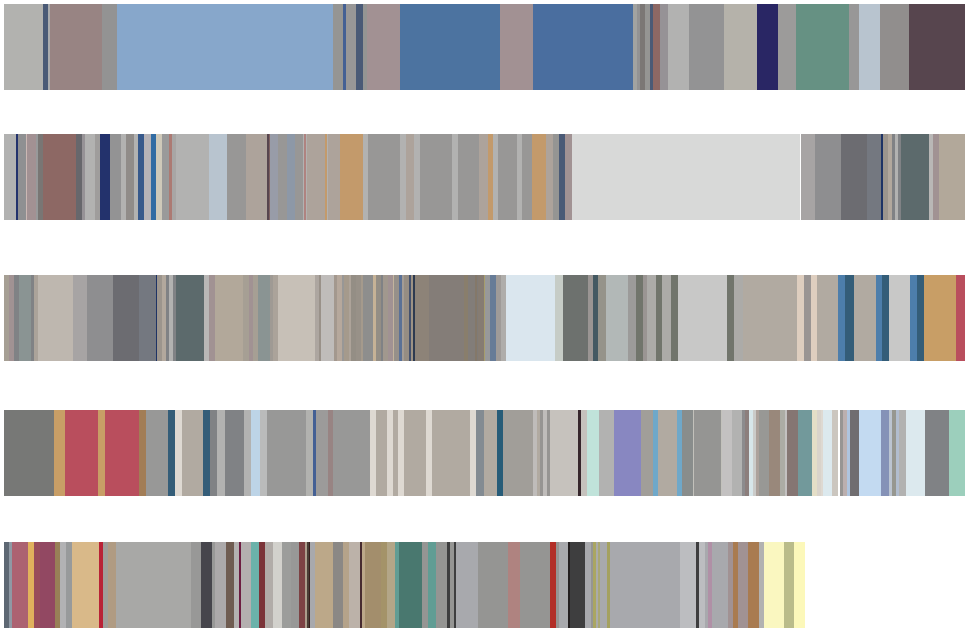




Fig 68 The online application Color Thief allowed me to extract dominant colors from a photo of a piece of texture. Each bar has a ratio of 1 pixel to 1 centimeter of the plaza.

“

**There is no
such thing as
information
overload, only
bad design.**

”

Edward Tufte

4.1 Successes & Failures

After the first six test projects were underway, it became apparent that I would need to narrow my focus in order to conduct a more in-depth study of place. The choice of Praça Carlos Alberto was a successful one, due to the diversity of use and foot traffic in the square, as well as its relatively small size. The sample sizes of my data sets were large enough to create interesting visualizations that gave a sense or generalization about the place, but not so large as to be unwieldy. However by the time I reached the data collection in the project, I had a limited time remaining in Porto. I keenly felt the time pressure while conducting my primary research, and I became aware that the amount of data gathering I needed to do did not leave a lot of time to re-do or tweak visual tests were less successful.

Furthermore, enacting the generative systems was one of the more challenging aspects of this project, as it impacted everything from the data collection to the final design. During my research, I found myself concerned with such trivial details as whether the two posts in the side of a shop door frame should be the same size, if the lighting in a photo of a doors peeling paint was good enough—minutiae that should not ultimately make a noticeable difference in the result and appearance of the final design, but whose correct execution seemed to make or break my methodology in the moment. I felt at times as if I was being held hostage to my own process. When I spoke with Pedro Pina, he expressed something related about the process of creating his project. In fact, he said that he abandoned several methods due to the sheer impossibility of the undertaking. These false starts aside, he impressed on me that the crux of the project was creating a system and setting it in motion. The important (and scary) part was committing fully to the plan and letting go of editorial control.

This ‘letting go’ enables the graphic designer to make a series of design decisions at the start of the experiment, then to allow his/her process to execute without second-guessing or the kind of interference which is so tempting in a results-oriented project but

can be considered micromanagement when the project depends on the application of a specific and formal methodology. Of course, this ‘autopilot’ must be programmed correctly at the outset to avoid a complete project breakdown. This is the challenge of the project: developing several systems that can run in concert and contribute to a holistic understanding of place while drawing from very small and partial bits of information.

There are some aspects of the project I would change significantly. While I was enamored by the large scale mapping of entire cities, I found that for the purposes of my experiments, it made more sense to use a smaller area in order to arrive at a more elegant methodology. Likewise, not all of the test projects were objectively successful. I am not sure if I completed the “heat” or activity map and the sound map in the most interesting ways. However, due to time constraints, I realized I had to select certain test projects to focus on. Given unlimited time and opportunity, I would create fewer test projects in general in order to develop three or four with more iterations. The color project and the food project were successful in terms of both process and result. I am also satisfied that the overall methodology in this project was considered and conducted in a way that was revealing both in its procedural steps and visual output. My investigation in the *praça* generated a number of interesting visuals and the territory was ideal for visual research. Through my collection and creation of images, and following the advice of Bestley & Noble, and in the footsteps of Barnes, McLean, and Pina, I feel that I was able to thoroughly explore mapping and maps from a graphic design perspective. Finally, I will evaluate the successes and failures of the final illustrations in the following chapter.

After I had completed the research and the visual testing, I considered the optimal way to represent and combine the mappings to represent Praça Carlos Alberto. As I discussed, this project drew heavily from the concept of making multiple mappings of the same location. Therefore, I looked at my color, food, sound, activity and smell maps and

considered manners in which I could display them together. Conceptually, I thought about how meaning would be added by layering or creating juxtapositions. I recognized that my mappings had strayed far from being representational, and this created an added design challenge, but I wanted to find a way to display the five mappings as a single work nonetheless.

I considered a layering approach—literally—but because of the wide visual differences in my final designs, I first decided to use concentric circles. I placed the food experience map, with its interweaving threads at the center. Circling it was the band of colors, the waveform, blocks representing smells recorded, and finally the activity diagram charting the number of people observed at four specific times of day—I was inspired by the *Flickr Flow* example I have referred to, because I realized the circle was able to represent both time and geographic location. The final attempt represented the information about the *praça* linearly representing the chronological experience of walking around the square. Through the testing, my maps had become untethered from a number of geographic conventions, and now from longitude and latitude. This was inspired by the idea of walking protocols and taking a ‘path.’ While on a traditional map our path creates a two-dimensional shape, we experience it more in the moment (as in a navigational app) as a straight line through time, always going forward. With this in mind, I remapped the data using five lines to represent each sense. The horizontal lines also remind me of how a person’s pulse is displayed on a heart monitor [Fig 69] so that the final design can be said to represent the pulse of a location, in this case a small and lively square. My five mappings were displayed together on a single horizontal axis, and the left border represents the edge of the church, with the line ‘circling’ back around to the start, but on the other side of the street.

In conclusion, the most successful of the five maps that I created were the Smell Map and the Color Map, because the visuals were the most striking graphically, and because



Fig 69 A pulse on a heart monitor.

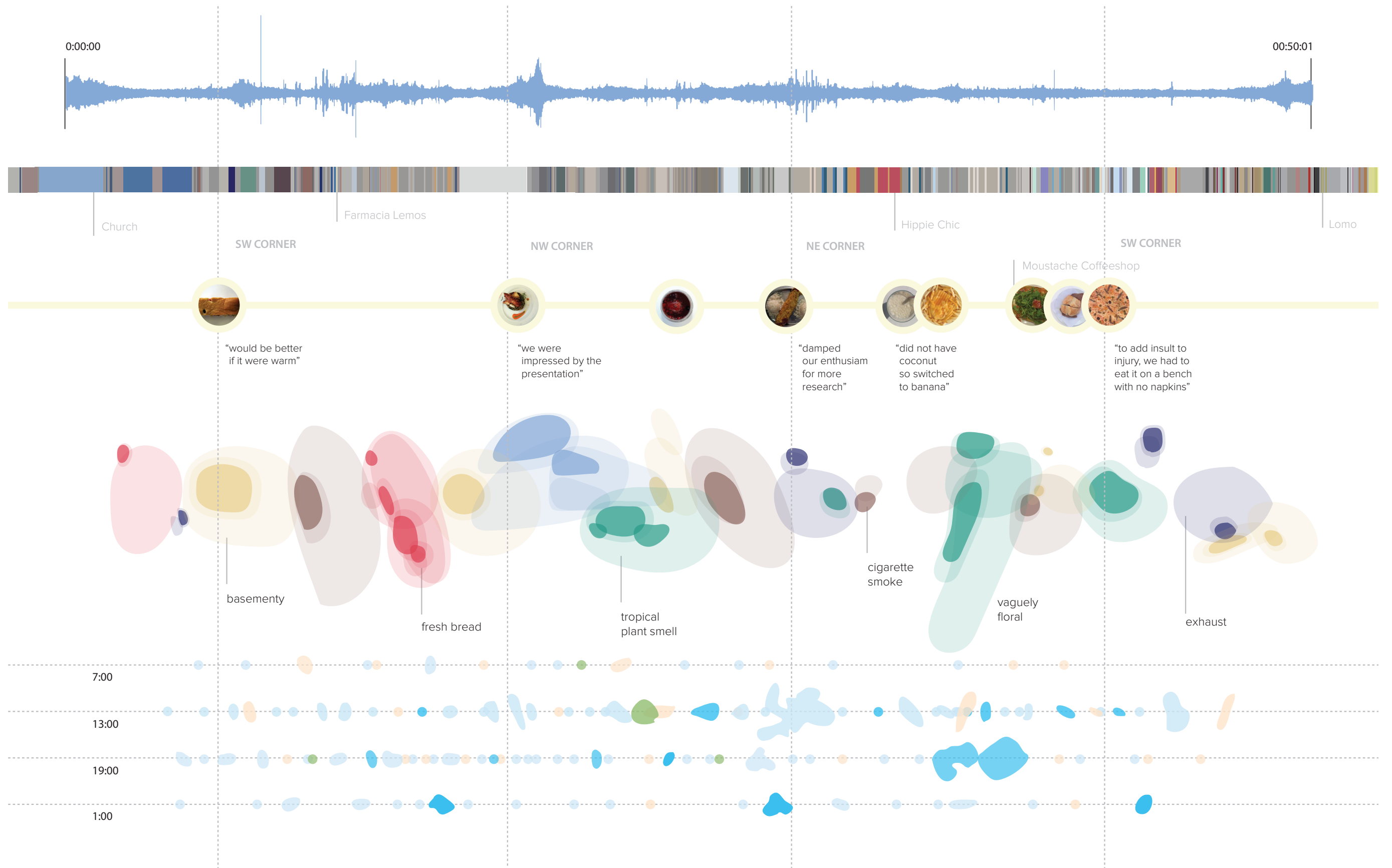
they reflected the process that had been undertaken. The waveform sound map, while simple, could also leverage its simplicity into an interesting illustration. To some extent the visuals are able to stand on their own, but with the contextual background on the process included, meaning is conveyed through the seeming visual abstractions. This connection between the sign and the signified is integral to mapmaking, and my successful test projects prove that there is a interesting area to explore in extreme abstractions that are created through systems.

I found that it was informative to view all of the mappings together in this way, in terms of representing as much data as possible on a single map [Fig 70]. According to designer Aris Venetikidis,²⁶ “First, we move along linear routes. Typically we find a main street, and this main street becomes a linear strip map in our minds. But our mind keeps it pretty simple, yeah? Every street is generally perceived as a straight line, and we kind of ignore the little twists and turns that the streets make.” Furthermore, it was possible to explore the map vertically, as I tried to line up the information with as much fidelity was possible to their relative proximity in real life. So by viewing the map from top to bottom, a single spot is represented in from several sensory perspectives—color, taste, smell and activity. However, there were some downsides to this presentation of the information. First of all, it is very visually busy. While in the beginning, the abundance of information was something that I wanted to embrace, over the course of my design process I recognized that the data-heavy approach was limiting the quality of my graphics, and that it was worth exploring them individually. It made sense for the final designs to focus on a few of the maps and present them ‘standing alone’ in an individualized and thoughtful manner.

26 Making Sense of Maps, TEDxDublin, 2012.



Fig 70 Detail
Fig 71 (next page) Completed map



“

**Logic will get
you from A to
B. Imagination
will take you
everywhere.**

”

Albert Einstein

4.2 Final Prints

As I reached the final phase of my project, I considered how to present the final work, and which of the mappings were worthy of inclusion. In the previous chapter, I described which of the maps were the more promising and deserved a final phase of exploration. I chose the Smell Map, the Sound Map and the Colors Map to expand into printed pieces for display, because I felt that they had the most striking graphic qualities and interesting parallels between my process and the visual that resulted. Ultimately, when the system was executed successfully, the map was the most successful. Formally, these three maps had the most potential for becoming part of the final work.

I decided to transform the three maps into poster-size prints. Printed maps are one of the original forms of the map—perhaps only preceded by drawn, painted and carved versions. Putting geographical information on paper is iconic, familiar, and natural even in today’s era of ubiquitous Google Maps. In fact, part of what appeals to us about paper maps is displaying them. In the act of framing and hanging a map on the wall, we elevate a useful, quotidian item to an art object or cultural artifact. The map’s boost in status from being framed and displayed as a print is something that can be observed in everything from homes to schoolrooms to governmental offices. In fact, during cartography’s infancy, maps were “things for cathedrals, shrines and palaces” (Garfield 2013, p.105), specifically made for prominent display. The abstraction that was an effect of my systematic yet subjective methodology provides for an interesting avenue to approach the work. From an distance and without context, the viewer would not ‘read’ the print as a map of a physical space, but with a small amount of context provided, the abstraction gains meaning. As the mapping process was not random, each small piece of the print correlates to an actual place and time. The process that went into it is what makes the work unique, and floats the interesting possibility of recreating the methodology elsewhere. I worked on paper trimmed to 16 by 20 inches, so that the sheet could be folded down to an 8” by 10” page size and fit inside the book sleeve I created, combining

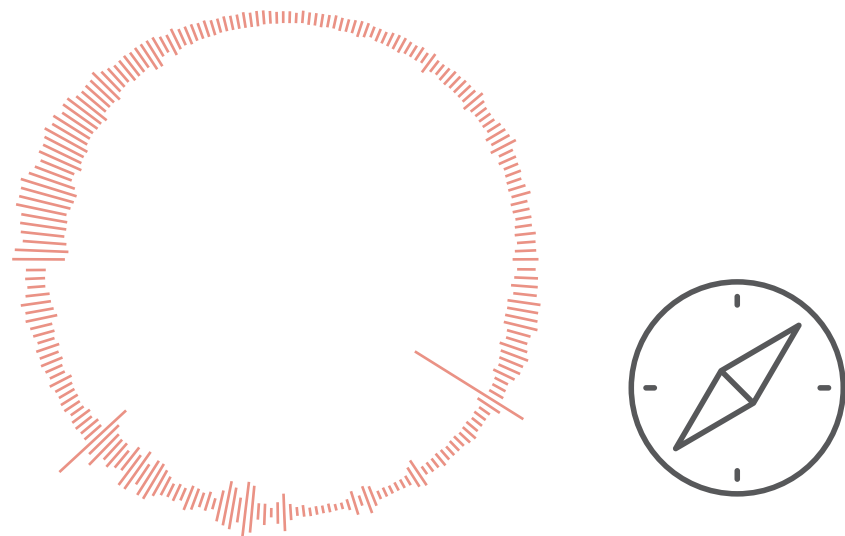


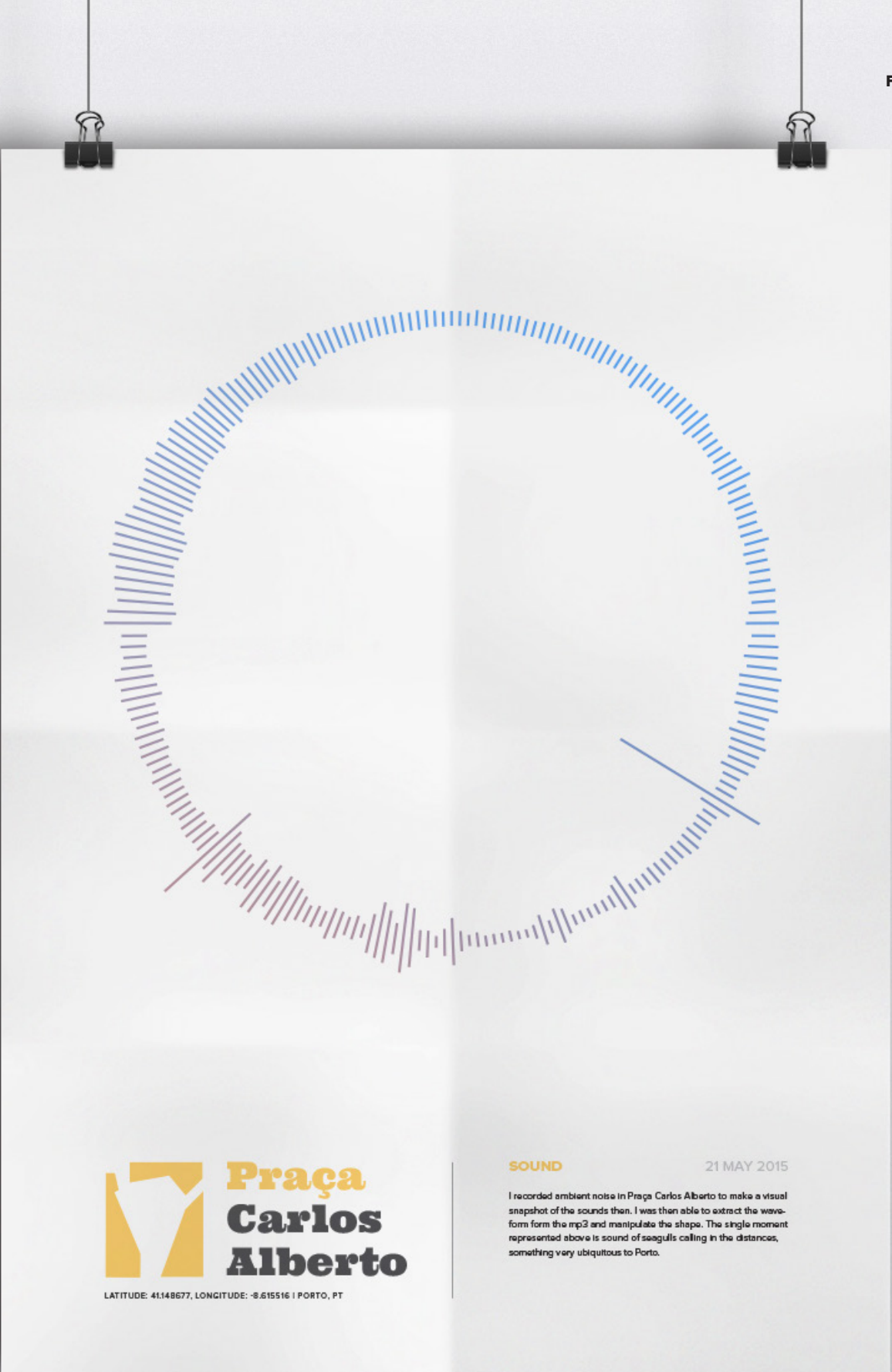
Fig 72 2:05 PM: Seagulls in Praça Carlos Alberto, and the inspiration for the shape.

the report and the designs to create a single complete package. I began by taking my visualizations, each developed by a system as outlined in the previous chapter, and transforming them into poster-size abstractions that were presented in a freer form than the linear map. Also, in contrast to the mappings presented before, I removed the captions. These indicators would feel unnecessary in a larger poster form that sought to embrace the visual qualities of the piece. Instead, I decided to place a small amount of text on every piece to explain how the design was created.

Sound Map

For the sound map, I knew I wanted to preserve the integrity of the sound-wave, while giving it more presence. I redrew the wave in Adobe Illustrator using small vertical lines that conformed to the actual shape of the sound-wave that I extracted from the mp3 file. I warped the wave into a circle, which masks the beginning and end of the wave and creates an eye-catching form—a snapshot of a piece of sound. Then I decided to focus on a single moment, in this case the distant sound of seagulls calling [Fig 73]. Also, the shape of the soundwave mirrors the round shape of a compass rose [Fig 72].

Fig 73





Final Color Map

This data set created the most interesting map, where each segment corresponded to a real piece of wall in the *praça*. When scaled down to a manageable size there are many, many tiny segments which create something that looks like a bar code [Fig 74]. There were many visual possibilities for how to transform the strip of colors into a poster, considering the number of blocks and colors involved. The facing page presents some of the iterations I created. I ultimately decided to amplify the visual impact of the piece in Photoshop by increasing the saturation by 30% and the brightness by 10%. This kept the gray bars from dominating the piece, but it is a subtle enough change that if I repeated the experiment in another location I could include it as part of the system without problems.

The text on the bottom right of the artwork briefly explains the concept, in this instance: “Each horizontal segment corresponds to a real piece of wall in the *praça*. I walked around the square and measured and photographed 361 segments in order to create a ‘bar code’ for the location. Originally, each pixel corresponded to one centimeter in real life, but I compressed the bar to have it fit on a page. However, the size of the segments are still proportionally correct!” I wanted to give the audience the opportunity to approach the design as an abstraction and then within the context of my methodology.

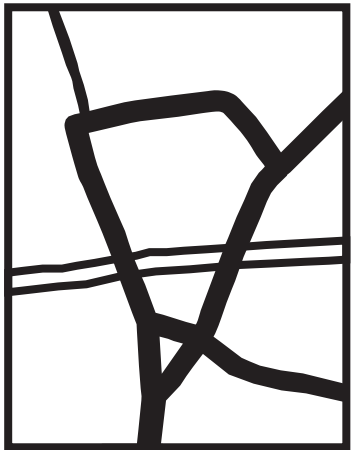


Fig 75 Illustration: the streets of Praça Carlos Alberto, Porto.



Fig 76 (facing page)
Rejected designs

To the left are several iterations of my designs for the final display of the colors. I made the decision that I wanted to preserve the ratios of the colors rather than the absolute measurements from my original conversion (1 cm = 1 px), because this converted better to a poster size. Ultimately I decided to go with the simplest illustration because I felt that the visual components made the most sense when interpreted with the map 'key.' What looks like a random series of strips is given an additional layer of meaning with the map viewer understands the system that went into making it—the idea is that the data could be taken from another place and presented in the same way.



Fig 77 Additional
rejected concept
for display

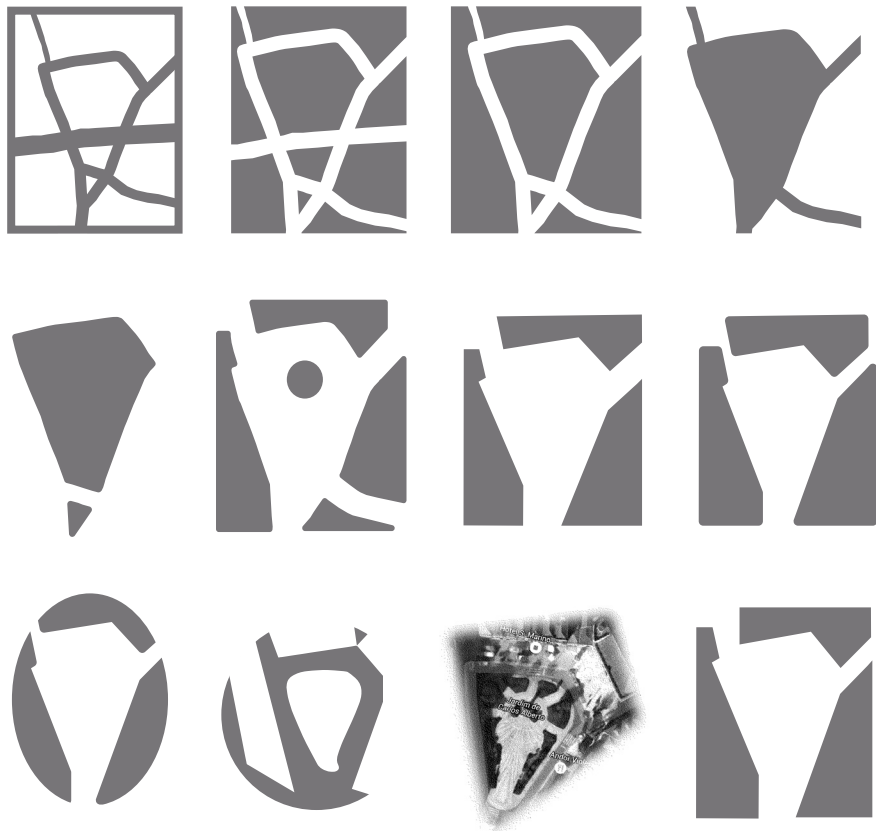


Fig 78 Iterations for the logo which appears on the poster.

Smell Map

I explained in the previous chapters why I chose the forms I did for the Smell Map—smells are nebulous and ephemeral. While they don’t have a physical shape *per se* we experience them in two and three dimensions, and the person performing the smell-walk and observing may pass in and out of a smell very quickly. In my initial mapping, the overlapping blobs made sense in terms of how I actually perceived the smells—sequentially—but neglected their physical relationships to the two-dimensional square, with its x- and y- axes. The transformation of the smell graphic was procedurally similar to the sound map—I warped the line into a circle first. Then I adjusted the shapes to conform more accurately to where they were recorded. The text on the poster serves as a key, reading, “Smells are nebulous and ephemeral and we experience them chronologically and spatially. One day in May I made a smellwalk in Praça Carlos Alberto and recorded what I sniffed—baking bread, tropical plants, motorcycle exhaust, cleaning agents, etc. The color code categorizes the smells by type: red is food, dark blue is chemicals or fragrances, dark blue is smoke or exhaust, green is natural smells, yellow is dust and brown is for unpleasant smells like garbage [Fig 79–80].

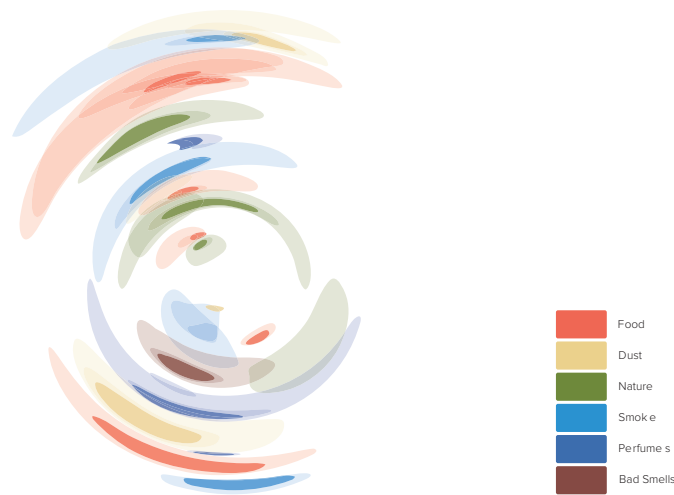


Fig 79 Smell map illustration iteration.

Fig 80



“
**The map is not
the territory**
”

Alfred Korbyzki

4.3 Final Form

The final report, which you hold in your hands, shows the final outcome of the project as well as the process in a book form. My intention in the report was to provide a broad explanation for my experiments into representation of physical space. It is a combination of the creative work and also a reflection on the steps that it took to get to that point—failures and dead ends included. The reason for this expansive perspective is that during the design process, I realized that the data gathering and investigation had become a crucial part my creative work, and that one could not be presented without the other. The colors used in the book were again extracted by Color Thief from photographs of the *praça* itself. The first run of this book was printed by an on-demand printing service. I then created a custom paper wrapper to hold both the book and the folded posters, laser cutting the title’s letterforms into the paper to reveal the image of the antique geographic map underneath.²⁷

The second portion of my final work is the outcome of the creative project, which are three printed posters. The printed posters are maps of the *praça* in their most abstract forms. They are able to be appreciated as graphic posters and also as mappings whose meanings can be revealed once the viewer understands how I as the designer arrived at the abstractions. These posters are intended to be displayed in conjunction with the written report, but also to be able to viewed on their own. Each piece is framed and includes a small textual element which briefly explains the process and the data from which the visualizations were created.

²⁷ Author unknown, A Baixa do Porto, retrieved from: <http://portoantigo.taf.net>



Fig 81 Title lettering

“

**Geographers
never get lost.
They just do
accidental field
work.**

”

Nicholas Chrisman

5.1 Conclusion

In conclusion, this work demonstrated a methodology for using graphic design to illustrate place, in a manner that departed from traditional cartography. Mapping is a method with which we process our world, and the conventions of cartography are familiar to nearly all of us in the western world. However, my project emphasized the exploratory nature of map-making, both from an academic and an empirical perspective—exploring the boundaries of what can be a map and what can be mapped, as well as exploring physically, on the ground, what was to be found on location. My illustrations were inspired by my research into maps and map-making, and a careful consideration of how and why we represent a location. I learned that the definition of mapping is expansive, that maps cannot be purely factual, and I hope that I was able to show how my mappings can fit into this area of study as valid representations of physical space.

I created five visualizations from five data sets, related to the sensory archetypes of seeing, hearing, feeling, tasting, and smelling. My intention was to process data through the visual language of graphic design. As a graphic designer, I had many elements in my toolbox—including those techniques I was able to learn about from traditional cartographic map-making. Specifically, I researched the precepts of information design and how I could apply them to subjective data sets. Working with a large amount of data was a huge and unfamiliar challenge, and something that I considered to be one of the most difficult aspects of the project to complete. I am not sure if I designed the elegant solutions I had hoped for, but in particular with the *Color* and *Food* maps I created, I believe, an interesting model for turning experiences and nuances of place into systematized illustrations. I owe a creative debt to the Portuguese designer Pedro Pina for providing me with a model for how to design the mini projects from a generative approach, wherein subjective data is transformed into visuals. I took the most successful systems and designed three 16” x 20” posters, *Praça Carlos Alberto: Sound*, *Praça Carlos Alberto: Smells*, and *Praça Carlos Alberto: Colors*, which took the linear maps and pushed them further into the territory of abstract illustrations. This

28 Speaking at TEDxAustin, 2011.

last step allowed me to create larger form visuals which could be approached by the viewer as abstractions but also through reading the text (similar to using a legend or key) as a map.

In the presentation of my research, I discussed in detail how critical cartography influenced the development of this project, in particular the idea of making multiple maps, and how maps reflect the biases and ideas of the mapmaker. As the mapmaker, I embraced how my perspective as an outsider in Porto would influence my work, and how as a designer I brought different tools and skill sets to my area of exploration than, for example, a sociologist or a geographer. According to designer Peter Hall,²⁸ “We need to stop asking, is the map good or bad—but what was the process, what was the agenda behind the map? The process, the mapping itself, can be quite a creative process.” I truly found that in this project the research became inseparable from the creative process. Additionally, after completing this year long project, I realized that my experience in Porto was distinctly altered by the experience. I made extensive walks through the city over the course of eight months, and I came to know the streets very well. Even so, I found myself constantly surprised by things I would notice, because as the work progressed I began to hone my observational skills. The opportunities I had in Praça Carlos Alberto to sit and observe a place were invaluable as well. The people I watched, the food that I ate, the smells that I smelled, the conversations that I overheard, all made their way into my illustrations of place but also formed indelible memories for me and helped me immerse myself in a foreign place. As an outsider, I had to accept that I couldn’t know everything about my area of exploration, but rather I learned to embrace the idea of looking at city through ‘fresh eyes.’

Furthermore, this project developed from a traditional mapping/user-interface design project (identifying an audience/client, gathering a particular data set, and then designing) to a project much more in the mode of design authorship. Because I based this

work on personal experience, executing the projects from research development to final designs tested my grasp of the design process. Not only did I have to decide what I wanted to research and focus on, but free of any parameters from a client-based brief, I was also responsible to give the work an editorial slant. The generative, systematic approach was ultimately the path that I chose, and while it provided a challenge for me in terms of creating parameters before I had a chance to iterate, it also opened doors creatively and provided license for me as the designer to take a leap of faith and begin a project without being able to visualize the final result.

Representation of place is a fertile territory for investigation. Through my data collection—which was influenced directly by systems to ‘translate’ information into visuals—I explored the possibilities of working in the mode of ‘designer as researcher.’ The idea of translation was also crucial to the themes I was working with, because it refers to the idea of translating a piece of data into a visual result, but also translating a foreign experience into something more easy to digest (be that a memory, a journal entry, or a photograph) and the idea of ‘lost in translation’ and working in the gray zone between two languages, English and Portuguese. This project sought to explore the place of alternative, illustrative and evocative map-making in the world of Google Maps, GPS and geotags, and what I discovered is that the project was more about the process and the ‘act’ of creating the map than the final illustrations because the process was my experiences. On a parallel note, I would like to return again to the *Happy Maps* project and the quote from its architect Daniele Quercia: “Mapping apps help us find the fastest route to where we’re going. But what if we’d rather wander?” When I arrived in Porto, I sought to orientate myself not just spatially but also contextually in a foreign city. The project cataloged multiple layers of information and experience in an attempt to arrive at a subjective depiction of a place. Despite the attempts at systemization, I found that the journey and the design was ultimately of a personal nature. Sensory

input is so unique to the experimenter, therefore the illustrations were personal to me as the designer.

Areas of future of research that could be explored include opportunities for public participation, modeled off the use of information gathering ‘probes’ by the designer/ researcher Alison Barnes in her dissertation, or the application of GIS technology and the presentation of the maps in an online, interactive context. As the test projects were almost completely systematized, in the future I am interested in reproducing my experiments in other locations. Other European cities of similar density and visual intensity would be natural choices for creating illustrations—for example: Barcelona, Edinburgh, or Milan. Another interesting angle would be to repeat the methodology in my home city of Los Angeles. The vast differences between the two cities, cultural, visual, geographical and dialectical, would make for a challenging experience, and would naturally bring up the question of whether the methodology could be reproduced successfully without significant tweaks. On the other hand, similarities exist: the two cities are both on the west coast, and they are both ‘second-cities’ in their respective countries. Because I live in Los Angeles, I would also have the time and space needed to develop a project similar to what I completed in Praça Carlos Alberto. The final posters left me with a flexible ‘template’ which I could reproduce for another location, as long as it would be possible to physically recreate the process there.

But Porto is a unique place, and it could be mapped over and over again and still turn up new and curious results. Delightfully strange *fascia* signage and black and white cobblestones; graffiti, street art and colorful buildings; tourists and locals; the smell of coffee and cigarettes and musty basements; sandwiches smothered in cheese and the custard-y *pasteis de nata*; advertisements and concert posters; the careening diphthongs of spoken Portuguese and the tour guides’ accented English—all of these are sensory experiences that made it into my work. Certainly, after my research and creative

process have been completed, I have gained a better sense of how to represent the essence of a place than when I initially picked up the free city map at the airport. This research and creative process hoped to show how a graphic design approach could be applied to questions typically answered through sociological or geographical methods, and I hope it was able to demonstrate how graphic designers are aptly positioned to represent place. In fact, we all have the opportunity to become map authors. Through very traditional means—walking, photographing, observing and sketching—I was able to introduce data sets into my process that are so ‘everyday’ that they often go unconsidered. According to illustrator Lucy Engleman, “[A map] doesn’t have to tell you where to go or what to do, it just has to tell you what it’s like to be there.”²⁹ After all, is the small sensory impressions that create a sense of place, and contribute to the future memory of being there.



²⁹ *Gestalten*, “Meet Lucy Engelman. The Michigan-Based Illustrator Makes Sentimental Maps.” <http://news.gestalten.com/motion/meet-lucy-engelman>. October 2015.

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