IN THIS ISSUE

ABOUT THE COVER: Recolored detail from page 17 of Off Course: A Creative Exploration of Cartography, Cuisine, and Narrative, by Preethi Balakrishnan & Kelsey Boylan. The entire book can be found in Visual Fields, beginning on page 37.

The 37th NACIS Annual Meeting was recently held in Montréal, Québec, Canada, a long-overdue visit to the northernmost country in our region. As a time when many of our organization's members are able to meet in person, establishing friendships and collaborations both personal and professional, it is a highlight of the cartographic year for the NACIS organization. I know that for quite a few attendees, these personal interactions at the meeting have changed the way they think about their work or inspired new projects. The opinion piece in this volume speaks about one such experience from one of our members, Tom Koch, and his participation in a panel discussion on morals, ethics, and cartography at the 2005 Annual Meeting. I hope that reading his piece might prompt you to reflect on your own experiences at past meetings, and how you have found them to be of value. For those of you who have not yet been able to come to a meeting, I hope it might inspire you give it a try at the 2018 meeting in Norfolk, Virginia. If cost is a barrier, I encourage you to consider applying for a NACIS Regular or Student Member travel grant.

While re-reading the opinion piece in advance of writing this letter, I began to notice other connections to discussions at past NACIS Annual Meetings on the topic of ethics and cartography. First and foremost was Steven Holloway's concept of "Right Map Making," which encapsulates some of his ideas about ethical map-making, and which was published as a letterpress broadside and distributed to attendees at the 2007 Annual Meeting. For those of you who were not there in St. Louis, you can see a copy of this text at Steven's website (**www.tomake.com/rightmapmaking.html**). Revisiting Steven's text then led me to think about the organization's Corlis Benefideo Award (**nacis.org/awards/corlis-bene-fideo-award**), which honors mapmakers who "make maps for a future to be possible," to quote Steven Holloway. The perturbations of one presentation or session sometimes travel much wider and deeper than one might guess.

One of my goals as Editor is to help to bring some of the meeting's richness into the journal for those of our readers who were unable to be in attendance for one reason or another. One way in which we are working to do that is through enriching the video recordings of presentations given at the meeting with a contextual piece and additional resources provided by the presenter. Our first experiment with this was a piece by Emily Eros, based on a presentation from the 2016 Annual Meeting, **published in Issue 84** last year. In this volume's PRACTICAL CARTOGRAPHER'S CORNER, Jamie Robertson speaks about enhancing his productivity when working with Adobe Illustrator to update hundreds of bicycling maps at the Adventure Cycling Association. While listening to Jamie's talk in Montréal, the NACIS member next

to whom I was sitting commented that what he learned in that one presentation would more than save him more than the cost of attending the meeting in increased productivity. So we hope to pass Jamie's knowledge and experience on to a wider audience through the journal.

In *CP* 87, you will also find a PEER-REVIEWED ARTICLE by Alison Feeney, whose piece identifies an industry that is crying out for the skills that cartographers can bring—experiential tourism—in her piece entitled "Beer-trail Maps and the Growth of Experiential Tourism."

In CARTOGRAPHIC COLLECTIONS, Igor Drecki from the University of Auckland Library tells the story of how a digitization project in New Zealand has led to a number of new scientific discoveries through studies that were made possible by the improved accessibility to New Zealand's cartographic heritage that the GeoDataHub is providing.

I take great delight in presenting Preethi Balakrishnan and Kelsey Boylan's imaginative atlas, a fictional anthology of 13 maps about food and culinary pursuits, which is reproduced in full this volume's VISUAL FIELDS contribution. We are grateful that they generously allowed us to publish the entire piece rather than a few isolated selections.

The works of three book reviewers complete *CP* 87. The first is Mark Denil's review of *Mapping and Modeling Weather and Climate with GIS*. The second is Russel Kirby's review of *American Capitals*, in which he concludes that maybe the topic doesn't warrant a monograph-length treatment. Gregory March assesses the strengths and weaknesses of a recent addition to the Making Spatial Decisions series from Esri Press, *Making Spatial Decisions Using GIS and Lidar*. Finally, Mark Denil is on double-duty in CP 87, also reviewing the *Cartographic Japan: A History in Maps*.

I encourage you to spend some time over the holidays perusing this latest volume of CP and wish you all happy mapmaking in 2018.

Amy L. Griffin
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A Thank-You, Long Overdue

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In 2005, I attended my first NACIS Annual Meeting. My attendance was as much from a desire to see Salt Lake City, Utah and hear the Salt Lake Tabernacle Organ, as it was to meet with others interested in cartography. And, too, I had the rather base desire to promote my book, *Cartographies of Disease*, then recently published.

What I did not expect was that the tone and tenor of the meeting and its conversations would set my research agenda for the next twelve years. While reading the proofs for the book whose origins were in that meeting, it seemed time to tender my thanks to the members of NACIS.

In those days, I was co-teaching Spatial Data Analysis for GIS at the University of British Columbia and working in gerontology and medical ethics, my other lines of research and work. When ethics became a subject in some of the Salt Lake City discussions I was . . . intrigued. It had not occurred to me that questions about propriety would be a subject of interest to professional mapmakers. Then, during the Map-Off, a studio-like critique session, I used ethics as a way of critiquing the entries. That lead to several lengthy discussions with members about morals, ethics, and what they mean for working cartographers.

After the meetings, as well as a year of consultation and thinking, I published an article, "False Truths," in *Cartographic Perspectives* (Koch 2006). Its intent was to create a way to talk in a non-academic, practical way about the issues that members had raised about ethics and appropriateness. That basic program and its ethical set-up became a centerpiece of my teaching, thinking, and finally, writing over the next decade. The end result is a new book: *Ethics in Everyday Life: Mapping Moral Stress, Distress, and Injury* (Koch 2017).

What was clear to me from the start was that some NACIS members faced situations that were troubling. What should a mapmaker do when an assignment seemed biased, limited, or somehow antithetical to their own sense of right and truth? How can members reconcile their "professional" duties—make the maps people request—and their personal duty as citizens? This isn't a new question or one unique to the cartographic community. The literature calls it "moral stress," and it is found in many parts of society. Today it's central to discussions of post-traumatic stress in first responders, military, and police. It's also raised frequently in discussion of distress among medical workers—mostly doctors and nurses—whose sense of personal "agency" is restricted by professional directives (Jennings, Wert, and Morrissey 2016).

What I did not know in 2005 was the degree to which the concerns raised by NACIS members might (or might not) be the same as those raised by members of those seemingly more critical, life-and-death professions. "False Truths" gave me the tools with which to ask this question not only in cartography and geography, but across a range of professions. It turned out that the dilemmas of some NACIS members were the same as those faced not only by first-responders but also by graphic artists, journalists, statisticians, and others.

Along the way, I made a fundamental and, to me, surprising discovery: maps are a terrific medium to empower questions about ethics, morality, and how we act as individuals and citizens in the world. The old debate between "objective" and "persuasive" mapping falls by the wayside when one realizes that maps present our ideas about the world and what we think important in it.

Whatever the subject, data are gathered and then presented at one or another scale of address to prove (or disprove) a thesis or idea. Maps are therefore no more or less objective than the ideas behind the collection and organization of the data. This isn't a new idea, of course. Denis Wood argued something similar in his *Power of Maps*, for example (Wood 1992). But in thinking about both mapping

and ethics, what quickly became clear to me was that the ideas that dictate the form of the map carry implicit and sometimes explicit ethical arguments. No wonder NACIS members are sometimes queasy about an assignment when they are ambivalent about the nature of the work they are asked to graphically summarize.

The other thing about maps that was critical to this exploration is that they are always ecologies, always about things *together* rather than about this or that dataset alone. Mapmakers take a data table's rows and fashion them into event classes that are then posted in a geography (political jurisdictions, streets and roads, streams and rivers, etc.) that argues a relationship between these event classes and the environment at one or another scale. Often, two event classes are joined in an attempt to show causal effects (poverty and resulting disease, for example).

So, in examining this or that map from an ethical perspective, one sees ethical ideas for which data have been collected and presented based on a single point of view. This means we can use the map to interrogate the ideas *behind* the map and, sometimes, the data that were chosen to support a singular point of view. A map, in short, doesn't just show "x," but places "x" in a geography based on ideas about the good or bad, the right or wrong of a thing. Ethics, in short.

Consider, for example, John Snow's famous 1855 map of the ferocious cholera outbreak in his Soho neighborhood of London (Snow 1855). It is "scientific" in its promise of objective data. It "shows" cholera incidence during the late summer of 1854. But: what lies behind and beneath the mapping? It presented public data collected by the Registrar General to identify the extent and effect of cholera during the first weeks of the outbreak. That dataset was collected as part of the government's obligation to its citizens to protect their health and in doing so to identify threats to the public good.

Snow's map argued that cholera is exclusively waterborne and not airborne. That was the idea he was testing, and so in the map he identified a single central water source—the Broad Street pump—as the likely origin of the outbreak. Why did he make this argument? Well, first, Snow was a physician who believed deeply in medicine as a Hippocratic, environmental discipline, and in the role of the environment in the health of peoples. His science was not disinterested but bound up in an ethical obligation to

Detail of Snow's cholera map.

care, and for the social address of unhealthy environmental dangers.

But for Snow there was also a personal agenda. Yes, as a medical scientist he wanted to identify the specific cause of the disease that was ravaging his neighborhood, his nation, and, indeed, western countries generally. There is nothing wrong with ambition. But as his writings repeatedly demonstrated, Snow's fight to tame cholera owed to his past. In the first cholera pandemic he was an apprentice apothecary caring for mining patients near Newcastle-Upon-Tyne (Vinten-Johansen et al. 2003). He watched them die and was traumatized by his inability to help them. So in seeking a simple source of the disease he sought to address what had been medicine's (and thus his) limits in treating people who came to him for health.

So the famous map of the Broad Street outbreak carries behind it a series of ideas. Its central thesis is, indeed, that cholera is waterborne and not airborne. But it—and other maps of the outbreak—also carried a commitment by government and by medical professionals to the health and welfare of citizens. That's why the data were collected and made freely available. And in searching for the causes of cholera, Snow and other physicians held the idea that their duty was to identify the source of illnesses as well as to find the best treatments for their patients.

But because Snow was arguing a narrow thesis—cholera as a solely waterborne disease—his map did not include

the sewer lines and former plague areas that others believed were implicated in an airborne disease. So yes, the map's data were objective, but they were limited by Snow's thesis. Other maps, arguing other origin theories, were different. But behind all of these was the central ethical argument that both government officials and civil authorities (for example the London Sewer Commission; Cooper 1854), as well as physicians, were responsible for the health and welfare of peoples.

How do we know all this? Well, one can deduce it from the map and one can confirm it in the writings of Snow and his contemporaries.

MAPS ELSEWHERE

When one starts looking at a map's underlying ideas, at its organizing thesis, one begins to see these things everywhere. Almost any map, or for that matter any graphic, can be similarly interrogated for both its meaning and its ideas of good and bad, right and wrong, and the ethics and the morals that support them. And so from the limited story of "False Truths" and the questions of NACIS members, I began to look at maps in newspapers and science journals as not simply a geographic mapmaker but also as an ethicist. Why not? They are frequent publishers of maps.

In looking at maps as they are used I began to ask not only about the ethics of the map but the means by which a map may hide its truths. In this, I was fortunate. Alexandra Enders, then at the University of Montana, sent me a map of poverty in the United States by county. It wasn't a particularly radical map; indeed, government websites permit the automatic generation of similar maps today. But, looking at the map, I wondered why I felt unmoved by it and by the legend's statement that 12.5 percent of all Americans lived in circumstances that, by government definition, limited their ability to obtain daily necessities.

Well, what is the proper unit for discussions like this? Is it states or counties or something else? And in asking about where poverty is, we can also ask what does poverty mean and why do we care? Is this about nationalism—the promise of a "more perfect union" among equal peoples—or is a map of poverty simply the tallying of winners and losers in a capitalist scheme where nobody owes much to anybody else?

The poverty maps I reviewed open the door to questions about maps as a tool to look at the ethics of civil programs and policies in a range of subject areas. These included inequalities in educational funding in the United States, accessibility in public transit systems, and the ethics that supposedly direct United States graft organ transplant programs.

These were not new subjects to me. But what the NACIS meeting did was force me to review my previous work and reinterpret it in the context of ethics and moralities, personal and public. And so, in doing so, I was able to extend the work I had previously done.

CONCLUSION

Professional meetings serve many functions. Besides the obvious, they're convenient ways to see new places, visit friends, and, of course, advance one's career. But we sometimes overlook the truly important boon of a good conference: the opportunity to think new thoughts and think differently about the things we already do competently. This is just a belated thanks to all those members who helped me do exactly that back in 2005, when I opened my big mouth and thought I understood the issues that were perplexing to others.

So . . . thanks.

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Beer-trail Maps and the Growth of Experiential Tourism

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A well-designed map can influence tourists' activities, yet tourist maps and their designs remain under-examined in the cartographic literature. Today, many Americans are traveling to indulge in new food and drink experiences, which can potentially increase revenues in other related tourist amenities. Specifically, travel to craft breweries is increasing, and tourism agencies throughout North America promote beer trails. This study identified 100 beer trails promoted by official tourism agencies, inventoried how many of those trails' marketing materials included a map, and evaluated those maps using Quantitative Content Analysis (QCA) for common design elements. The overall goal of the project was to determine if the maps featured only the breweries or if they promoted visiting additional experiential activities that contributed to the creation of a sense of place, and that in turn, may provide potential benefits to the travel destination.

The results found that tourism agencies aggressively advertise local breweries, but the maps developed for beer trails significantly underutilize effective cartographic principles and do not promote other regional activities. Most trail maps were made with Google Maps, an effective tool for navigation, but one that often produced unbalanced layouts and did not use symbology to effectively emphasize tourist activities. Additionally, Google Maps tends to suggest travel on main roads or highways rather than smaller back roads that are more likely to host additional local activities. A limited number of maps were artistically designed to focus the viewer's attention on the regional landscape and other available activities, but were designed in a highly generalized, cartoon-like style. Only two agencies mapped breweries along with suggested routes and additional activities using symbols, colors, fonts, and pictures appropriate for the age demographic of their market audience.

KEYWORDS: beer trails; craft breweries; tourism; quantitative content analysis; map design

INTRODUCTION

TOURISM IS A GLOBALLY IMPORTANT, dynamic industry. It constantly changes based upon shifts in the popularity of different activities and interests, economies, politics, and the perceived value or condition of the destination. One of the recent changes in the US industry is the increased number of Americans travelling to places where they can sample the food and drink from different regions. Not only can they consume the product close to where it is made, but they can also experience local traditions and customs. One such type of tourism destination is the craft brewery. The number of people traveling to enjoy a beer, see how it is made, learn something about the process, and even socialize with the brewer is on the rise. Craft beer tends to be consumed by a particular demographic, one

that has some disposable income, available recreational time, and is likely to seek out experiential tourism activities (McLaughlin, Reid, and Moore 2014). "Tapping" into this consumer market offers regions surrounding brew trails the potential to create experiential tourist destinations and generate additional income.

This study examined how often maps were used to encourage tourism surrounding prominent beer-producing regions in North America. Among those areas that did utilize a map, Quantitative Content Analysis (QCA) was used to determine if the maps were purely wayfinding tools, or whether they displayed other tourist attractions to market the surrounding region. Of the maps that did

promote the broader region, I asked what type of symbolization and design techniques were used. The overall goal of the project was to assess if these tourism maps are contributing to the creation of a sense of place, and in turn, providing potential benefits to travel destinations.

IMPORTANCE OF TOURISM MAPS

THE TOURISM INDUSTRY IS highly competitive, with destinations being sold as branded, marketed products. Monmonier (1996) states that cartography and advertising can promote a clear, favorable image, and that marketing maps can be an effective, eye-catching tool. All maps have some bias (Wood 1992), but some can be more persuasive than others. Maps can greatly influence the success of a region (Ashworth 2011), for they play a significant role in how we discover, learn, and communicate information about the world. While maps should be fundamental tools used in planning a trip (Richmond and Keller 2003), they are an underutilized resource in tourism (Bailey et al. 2012). Bailey et al. (2012) found that although most visitors use maps to acquire spatial knowledge, many maps in informational brochures and at tourist kiosks suffer from poor design.

Tourism maps and their design remain under-examined in the literature of tourism geography and cartography. Unlike thematic or cadastral maps, Muehlenhaus (2011a) stated that persuasive maps are not well studied in the cartographic literature, and argued that the goal of persuasive tourist maps is different than more scientifically-oriented maps. Del Casino and Hanna (2000) argued that this omission is in part because tourism maps are seen as blatant forms of advertising, with great aesthetic and cartographic license. Grant and Keller (1999) found the neglect of tourist mapping in the academic literature surprising due to the importance of promoting destinations, and a map's ability to contribute to both the production and perception of space. They argued that the fields of recreation and tourism could greatly benefit by improving their maps to help create a sense of place and regional attachment to the landscape. Hojman and Hunter-Jones (2012) found that most tourists conscientiously follow suggested routes, travel to recommended areas, and seek out other consumption activities and social experiences that are advertised. Maps, therefore, could be used to channel desired tourist activities.

The content and structure of tourism maps changes frequently. Increasingly, people are using websites, social media, and smart phone apps to plan and book trips and excursions (Fuggle 2016); such digital technologies remove physical barriers and eliminate printing and distribution costs. Along with these recent shifts from printed brochures to online maps, the types of activities promoted by such maps and the appeal of particular destinations continue to change over time. Martin (2011) provided historic evidence that representations of idealized activities and images changed over three decades of American tourism maps in the Caribbean. Schnell (2011) examined recent tourism guides from North America. Using quantitative content analysis, he found notable changes from 1993 to 2008, including an enormous expansion in the promotion of activity-based experiential tourism centered on local food and agriculture. Usage of the keywords "local" increased tenfold, "agriculture" tripled, and "farm" or "farmers" quadrupled in tourist guides from the United States.

GROWTH IN EXPERIENTIAL TOURISM

TOURISM IS ONE OF THE fastest-growing businesses in the world, and many tourists, particularly Americans, enjoy their recreational time by traveling to places of food and beverage production to seek out new palate experiences (Veeck, Che, and Veeck 2006). Variations in the language used to describe these experiences, such as gastronomic tourism, food tourism, agritourism, wine tourism, and beer tourism reflect a focus on the unique types of cultural experiences that a specific location's food and drink can provide. Travelers journey to farms, vineyards, breweries, festivals, trade shows, and farmers markets to indulge their palate, while also immersing themselves in local traditions, cultures, economies, and communities. This experiential consumption creates enjoyment for the traveler that extends past the basic intake of food and drink to include education at the source of production, while

travelers also glean pleasure from the regional environs, recreational activities, and cultural lifestyles (Hojman and Hunter-Jones 2012).

The growth in experiential tourism corresponds to the larger farm-to-table movement. Food tourism fuels the notion that there is more to food than food itself, and that taken out of its geographic context, it loses its meaning. Schnell (2011) suggested that part of this growth can be attributed to recent food scares, such as mad cow disease, food recalls, and *E. coli* outbreaks. Meanwhile, Colton and Bissix (2005) stressed that the growth is a result of tourists seeking alternatives to patterns of hedonistic consumption. Additionally, with growing concerns of conflict, terrorism, and global economic meltdowns, many travelers yearn for an idyllic, rural vacation. This sector of the tourism industry feeds on nostalgia for the vanishing rural past, and on many people's affection for the countryside as our society becomes more urbanized. This growth of tourism can be seen as an extension of the neolocal movement described by Tuan (1991), as a conscious commitment to preserve and support local economies and social networks in an era of mass production and global consumption.

Many positive benefits come from experiential tourism. It has been hailed as a vehicle for regional development and strengthening local production (Everett and Slocum 2013). Tourism can potentially raise local incomes while offering consumers local products, education, recreation, and socializing opportunities. The notion of eating locally suggests unique choices produced in an ecologically friendly, sustainable way and implies empowering self-sufficient people. The region surrounding such tourist activities can potentially experience increased revenues for other related businesses such as hotels, gift stores, and gas stations. Ferreira and Muller (2013) described the growth in wine tourism as a driver of economic and social development in rural areas because of the collective lifestyle experiences.

Wineries, distilleries, and breweries are at the forefront of this growing industry. Parts of Europe and North America, such as Bordeaux, France; Tuscany, Italy; and the Napa Valley, California, have established themselves as experiential tourist regions, but Carmichael and Senese (2012) reported that lesser-known areas are also seeing rapid growth in the tourism and experiential sectors. Halladay (2012) reported that in 2012, Virginia's wineries experienced a 106% increase in tourism since 2005, contributing $747 million annually to the Commonwealth, Kentucky's Bourbon Trail reported over 450,000 visitors in one year, and the online travel company Viator saw a 50% increase of wine tour sales in 2011. Viator also reported that craft beer tours are becoming more abundant.

THE GROWTH OF CRAFT BEER AND ITS CONNECTION TO TOURISM

Beer has been an important consumption commodity in the United States from its early European settlement to the present day (Feeney 2015); in recent decades, marketing and advertising have had significant impacts upon the economic success of the industry. Following Prohibition, the American beer industry experienced steady growth, along with the consolidation of breweries, and entered an era of mass production. By 1950, the top five brewing companies held 24% of the market and by 1975, they held 75%, with Anheuser-Busch, Miller, and Schlitz-Stroh leading the nation (Batzli 2014). As the industry began to plateau in the 1970s, marketing and advertising became essential. Media advertising expenditures increased fivefold from 1977 to 1998, with brewers spending $752 million per year (Wilcox 2001). Advertising expenditures had a significant impact on market shares, and studies showed that creative commercials played a critical role in consumer behavior.

Today, Americans consume on average 20.3 gallons of beer per year, and although large mass-produced brands still hold the market, an increasing number of consumers are selecting craft beers (Reid, McLaughlin, and Moore 2014). Craft breweries are considered small and independent, use traditional brewing methods, and are known for their innovative flavors. The industry exploded from only eight craft breweries in 1980 to almost 2,500 in 2013, with 98% of all US breweries being small and independent (Hoalst-Pullen et al. 2014). In June 2013, craft breweries produced 7.8% of volume but 14.3% of dollar sales. Whitwell (2014) reported that this was a 16% increase in volume for craft beers, versus a 1.7% decrease for the mass-produced brands. Budweiser remains the third most popular beer in the United States, but declined in volume of sales 6% annually between 2008 and 2013 (Felberbaum 2015).

Del Buono (2015) argued that craft beer has gone from a niche market to a cultural phenomenon, and is one of the fastest-growing segments in the alcoholic beverage industry. People are willing to travel to experience drinking a beer at the place of production because craft breweries conspicuously promote traditional, wholesome brewing styles, advertise their use of local ingredients, demonstrate their connections to clean, local water sources, and name their beers in relation to local folklore and cultural events. Craft breweries clearly match their identities with their location, and it is nearly impossible to consume a craft beer without some awareness of its origin and cultural expression (Caroll and Swaminantham 2000).

Craft beer is an ideal product for the experiential tourism industry to market because of its ties to local geography, and it is an important product in the tourism market because it is often consumed by a specific demographic (McLaughlin, Reid, and Moore 2014). The typical craft beer drinker is a well-educated, white male earning at least $75,000 annually. This group tends to have plentiful disposable income, spends money on consuming food and drink, and enjoys the prestige factor that is associated with craft beer. Mowen, Graefe, and Graefe (2013) found that craft beer drinkers are adventurous, try new beers, and search out restaurants with craft beers. Their research also found that this group included many active tourists. Over a twelve-month span, the average craft beer drinker reported that they visited 30 craft breweries, made two 50-mile or greater trips that involved stopping at a craft brewery, and attended at least two craft beer festivals.

The growth of craft breweries across the United States is geographically uneven. The largest concentration of breweries is in California, the Pacific Northwest, and Colorado, with a secondary hub near the Great Lakes, and a third concentration in the Mid-Atlantic States (Hoalst-Pullen et al. 2014). Strong local pride and ties to historic immigrant settlement patterns are often cited as the reasons for growth in these areas, while religion and legal restrictions on home brewing that have only recently been removed can be linked to the scarcity of craft breweries in the South. Although analysis shows that the size of population heavily influences the number of breweries, Reid, McLaughlin, and Moore (2014) controlled for total population and found that Vermont had the highest number of breweries per capita, probably due to tourism. Similarly, Baginski and Bell (2011) used step-wise regression models and identified areas with large, tourist-based economies, such as Charlottesville, Virginia; Asheville, North Carolina; Myrtle Beach, South Carolina; and southern coastal Florida as having well above the expected number of craft breweries based upon their location and total population size. These studies demonstrate that craft breweries are a big draw for tourists, and that they can contribute to the potential success of a tourism region.

METHOD FOR EXAMINATION OF EXISTING BEER TRAIL MAPS

For this study, I inventoried beer trails promoted by official tourism agencies, and tallied how many of those trails included a map. Because most travel plans begin with the internet, I used common search engines to identify beer trails in regions with high concentrations of craft breweries. The top five search engines, Google, Bing, Yahoo, Ask, and Aol (eBizMBA Guide 2016) were used to identify beer trails from official tourism offices, brewery associations, and regional partnerships in areas with a high concentration of breweries. Searches included combinations of the following terms: *craft beer*, *breweries*, *ale*, *lager*, *food*, *trails*, *destinations*, *vacations*, *trips*, and *experiences*. Repeated searches looked for beer trails in regions of decreasing size, starting with North America and the United States, followed by regions, such as the Pacific Northwest, Northeast, or Midwest, followed by individual state-level searches such as California, Oregon, and Pennsylvania. Local areas, such as the Willamette Valley, Hudson Valley, and greater Philadelphia region were then searched. Finally, the most local scale was searched to identify beer trails in individual cities such as Portland, San Diego, Boulder, Grand Rapids, Asheville, and Pittsburgh.

Both descriptive statistics and qualitative measures were employed to examine the inventoried maps. Suchan and Brewer (2000) have suggested several qualitative methods that are valid for scientific inquiry, and have argued that qualitative research can assist cartographers to uncover patterns of inter-relationships. Additionally, Muehlenhaus (2011b) provides a critical review of the benefits of quantitative content analysis (QCA), and stresses its strength in examining changes in thematic map design. QCA allows for the construction of quantitative measures of particular

graphic elements and the comparison of different mapped traits. For QCA to be valid, research questions must be determined prior to study, and explicit codes must be developed and rigorously applied to all maps, so results can be replicated.

The goal of this project was to determine how many tourism brewery trails include maps, and of those that do, what design techniques are common? An additional question was whether these maps contribute to the creation of a sense of place, and in turn provide potential additional benefits to the travel destination. The QCA codes, therefore, focused on these questions. The first set of codes determined if the trail included a map (yes or no) and the scale of the map (local, regional, statewide, or national).

The next set of codes focused on the purpose of the map and its intended use. Ideally, interactive maps, such as those created in Google Maps, should be designed around the purpose for which the user wants to use the map, and can additionally offer directions from point A to point B. Yet, as Roth, Ross, and MacEachren (2015) indicate, many interactive maps have shortcomings, such as incorrect classification schemes, illogical symbolization, or even inaccurate information. This second set of QCA codes queried whether the map was a static product or an interactive map, and evaluated each map for its intended use (highly generalized, trip planning stage, or wayfinding and navigation). A highly generalized map was defined as a map that provided few locational clues, for example, one or two place names or one or two stylized roads.

Several QCA codes focused on map design concepts commonly defined in the cartographic literature (MacEachren 1994), such as layout (balanced or uneven) and point symbols (iconic or geometric). A map has an incredible ability to emphasize particular features (Monmonier 1996), and several codes focused on whether symbols promoted additional experiential tourism activities, encouraged travel on specific routes, or contributed to creating an overall feel of the destination. Further codes recorded the number of themes (a numeric count as defined in the legend or title), categorized transportation routes depicted in the map (all roads mapped similarly, symbolized main travel routes, or exaggerated the beer trail location), and noted the inclusion of pictures or graphics.

RESULTS

CRAFT BEER TOURISM and brew trails are thriving, are prominently promoted by tourism agencies, and can easily be discovered online. A web search for "beer trails" yields over 25 million results, whereas adding a specific location to the search, such as "brew trails North America" or "beer trails Pacific Northwest," returns over 2.5 million results. Even at a state- or city-wide level, most searches returned over 500,000 results. Because this study focused on trails that were developed to increase tourism, only trails designed by local, state, or regional tourism agencies and guilds were used, although I found many additional trails that were suggested by newspapers, magazines, and personal blogs.

The term "trail" is used loosely in many tourism webpages. Many local-, regional-, and state-level tourist bureaus refer to a "beer trail," but do not designate a path or geographic structure that encourages directed movement. Due to this sometimes vague use of the term, only officially-designated beer trails that followed an identifiable path were included in this study. One hundred such trails were identified for this project, which is a strong, representative sample of the types of beer trails advertised for tourism purposes. Table 1 inventories some of the characteristics of these trails, and the list of all trails appears in the Appendix.

The first few codes of the QCA focused on the existence of a map, the geographic scale of the map, and its intended use. Twelve tourist bureaus have created trails that proudly promote their breweries, market the quality of their products, demonstrate their commitment to sustainable business practices, and show off the appeal of their dining environs, without providing any maps or directions. For example, travelindiana.com's (n.d.) slogan is "Experience Authentic Indiana," and a main section of their website promotes the "South Shore Brewery Trail"—nineteen breweries are described, but no map is included. Similarly, the Inland Northeast Ale Trail (Visit Spokane 2016) offers a color brochure depicting mountains and trees and the logo of each brewery, but no map. However, the remaining 88 beer trails did include a map, and I analyzed the characteristics of their marketing materials. Roughly an equal number of maps were identified at the local, regional, and statewide scales (32, 30, and 25, respectively), along with one national map presented by Visit USA (2016).

Scale	Presence of a Map		Percent of trails with maps	Intended design use	Percent of maps with interactivity
	No Map	Map			
Local	5	32	86.5%	*Highly generalized* 3 (9.3%)	16 (50%)
				Planning 6 (18.7%)	
				Wayfinding 23 (71.8%)	
Regional	4	30	88.2%	*Highly generalized* 5 (16.6%)	15 (50%)
				Planning 10 (33.3%)	
				Wayfinding 15 (50%)	
Statewide	3	25	89.2%	*Highly generalized* 3 (12.0%)	15 (60%)
				Planning 5 (20.0%)	
				Wayfinding 17 (68.0%)	
National	0	1	100%	*Planning* 1 (100%)	1 (100%)
Total	12	88	88%		47 (53.4%)

Table 1. *Inventory of official tourism beer trails categorized by scale and use.*

The scale of the map has no apparent relationship with its intended use; approximately one-half to two-thirds of the maps at each scale were designed for wayfinding purposes, with the majority of those being interactive maps. Google Maps, by far the most common tool used to map beer trails regardless of their geographic extent, was involved in 53.4% of the trails in this study. This includes the North Carolina Craft Brewers Guild's (n.d.) "North Carolina Beer Trail," the Adirondack Regional Chambers of Commerce's (n.d.) "Adirondack Craft Beverage Trail and Map," Discover Lehigh Valley's (n.d.) "The Lehigh Valley Ale Trail," and "The Columbus Ale Trail," by Experience Columbus (n.d.). All of these trail maps use simple pins placed on a Google basemap.

Several visitor bureaus provide an overview of the breweries in an entire area, while using Google Maps to provide more detailed directions, such as the examples seen in Figure 1. Visitphilly.com, the official visitor website for the Greater
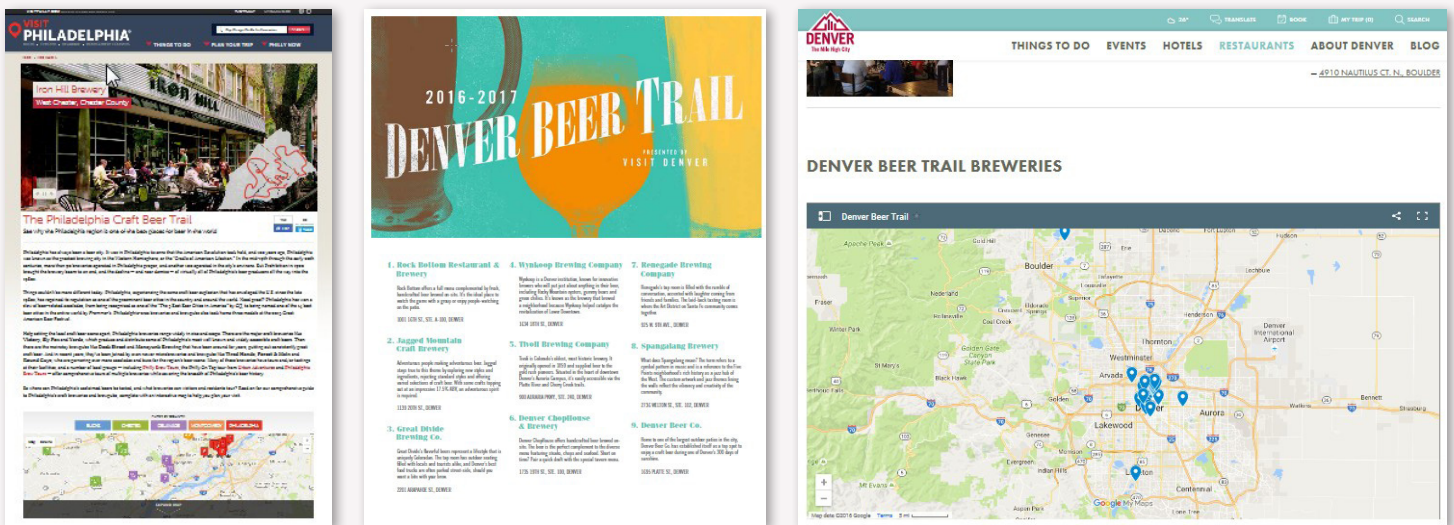

Figure 1. *Examples from VisitPhilly and Visit Denver used Google Maps to display beer trails.*

Philadelphia area, describes how beer was historically important to the city, and how today the area is thriving in the new craft brewery era. They have created the "Philadelphia Craft Beer Trail," depicted as a red path on a light grey background with neither roads nor directions. It is presented on their website amongst rotating pictures of all the breweries, while specific directions to individual breweries are provided by Google Maps.

Visit Denver works with the City of Denver and the Colorado Tourism Department to develop economic benefits for the city and its community. They have created the "Denver Beer Trail," promoting over 100 breweries and brew pubs (Visit Denver, n.d.). The downloadable version lists only the addresses with no map. The website has each brewery, links to individual business websites, and a Google map displaying all breweries with simple blue pin markers.
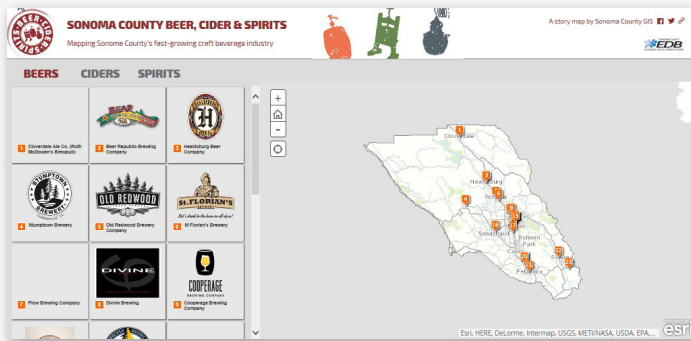
Visit California (2017) has a major section of their website devoted to beer tourism, and claims that it is a beer-lover's paradise with over 500 breweries. It separates the breweries into different regions, but does not have an actual trail or designated map. A few of the regions within the state do have trail maps. For example, the Sonoma County Tourism website (Sonoma County GIS, n.d.) has a two-day suggested itinerary for exploring the two dozen operating breweries. They created an Esri Story Map that allows viewers to display the county's beer, cider, and spirits producers interactively, and proudly advertises the fast-growing industry in its subtitle (Figure 2). The map itself is a general locator map with only major highways and cities represented, but no additional tourist activities or attractions.

After wayfinding, the most common use of the trail maps was for trip planning. Maps that fell into this category were those that presented a group of breweries with enough locational clues to organize a trip, but not enough information to actually travel or navigate to a destination without the assistance of another map. Planning maps were found at all scales. The Massachusetts Office of Travel and Tourism (2014) encourages people to grab a beer and claims that "mapping all their breweries together makes trip planning a whole lot easier." Their website describes how many of the breweries use fresh ingredients such as apples, blueberries, maple syrup, and cranberries from local farms, and how many of them are located in quaint buildings or scenic places, but does not represent these characteristics on the map (Figure 3). Similarly, the Wyoming Beer Trail (2016) provides the relative location

Figure 2. Esri story map representing Sonoma County's beer, cider, and spirits producers.
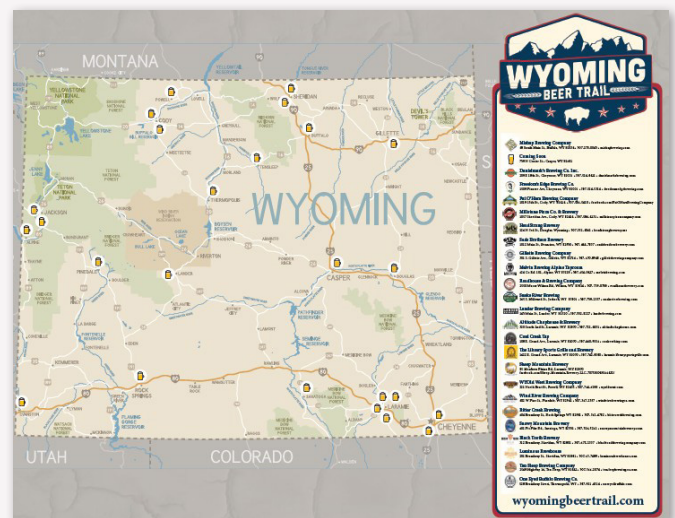

Figure 3. Example of trip planning maps, the Massachusetts Craft Beer Trail and the Wyoming Beer Trail, where the viewer can organize locations into their own trip, but needs to use additional sources to navigate to individual breweries.

Figure 4. *The 2013 Maine Beer Trail and the Gulp Coast: St. Petersburg/Clearwater Craft Beer Trail display highly generalized locations that offer limited trip planning ability and require additional maps and information to plan a trip and navigate to breweries.*

of breweries on a state-wide map, with main roads and towns identified.

Only a few maps at each scale were highly generalized and served attention-grabbing, marketing purposes rather than planning or navigational purposes. Several tourism agencies give an overview of all their breweries with very little description and few locational clues. The Maine Office of Tourism (2016) website has a page titled "The Maine Beer Trail," which describes the history and growth of the state's brewery industry. It promotes the state's fifty craft breweries and highlights several of them with online links, but no map. However, the Maine Brewers' Guild (2013) created "The Maine Beer Trail," which lists every brewery in the state and color codes the breweries by their region (Figure 4, left). Their website describes the fresh, hand-crafted quality of the beer, and offers an incentive rewards program to visit each brewery. At a local level, The

Gulp Coast: St. Petersburg/Clearwater Craft Beer Trail (Visit St. Petersburg/Clearwater 2016; Figure 4, right) divides the community into three regions and provides dots and a connected path, but has no names of breweries, locations, or roads on the map.

The next set of codes for the QCA focused on the layout and symbology of the trail maps. The overall map layout was determined to be balanced or uneven based upon the points of interests, placement of any additional features or pictures, and the place of any title, legend, or ancillary information. Symbol types, generalization or exaggeration of suggested travel routes, overall feel of the map, and number of themes were tabulated. Figure 5 displays the results.

With over half the maps being built upon Google Maps and using little additional cartographic design, the

Figure 5. *Results of the 88 ale trail maps by scale and layout/symbology codes.*
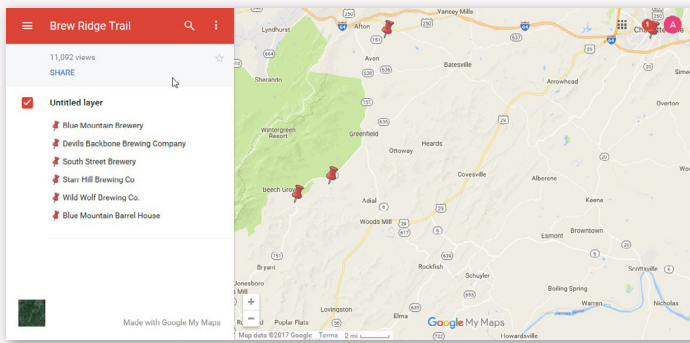
Figure 6. The Brew Ridge Beer Trail (Nelson County Virginia 2017) is an example of how interactive maps can create an unbalanced map layout if they are not designed with visual balance in mind.

potential for an unbalanced layout is high. Irregularly shaped states such as Maryland, or regions where several breweries are clustered together in close proximity mapped alongside a few dispersed breweries, present design challenges. The example of the Brew Ridge Trail (Figure 6) displays the location of the breweries with a simple locator pin along the top and side of the map (Nelson County Virginia 2017). The central portion of the page is of little of interest to visitors. This map used simple, geometric symbols, like 49 (55.6%) of all beer trail maps. The remaining 44.4% used iconic symbols, which were either a pint glass or the individual brewery logo. Coincidentally, the number of balanced/uneven layouts is the inverse of the number of those maps that used geometric versus iconic symbols at every scale. However, there is no relationship between these two codes, as different maps were classified in each category.

The potential for a beer trail to influence the direction of movement or suggested travel routes declined greatly as the region depicted grew in size. Local and regional-scale maps (16 (50%) and 12 (40%), respectively) symbolized and labeled main roads or intended paths more often than maps at the state or national scales (6 (24%) and 0 (0%), respectively). Figure 7 offers an example of map that communicates a trail by simplifying the surrounding areas and highlighting participating breweries. The Astoria Warrenton Chamber of Commerce, the Seaside Visitor Bureau, the Oregon Brewers Guild, and the Oregon Coast Visitor Association created the "Oregon's North Coast Beer Trail" (n.d.). Their website gives viewers a choice of two maps. The first is an interactive web map created by Maplam that allows viewers to zoom in and out on a satellite image. The second, a printable PDF map, has clearly visible features that highlight the location of each
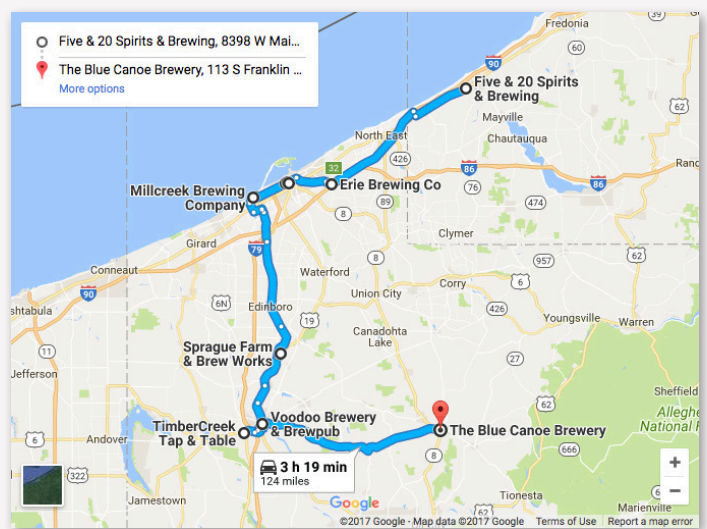
Figure 7. Examples of purposefully designed trails using effective generalization principles to communicate locations of breweries within the North Coast of Oregon region (Astoria Warrenton Chamber of Commerce et al. 2016) and for the Lake Erie Ale Trail (VisitErie 2016).

brewery and the main route. Although an actual "trail" is not drawn, the prominent symbolization of the Coast Road against a simple background focuses the viewer's attention. The color choices, line widths, and the pictorial

symbols of the breweries' logos construct this space as a regional beer destination. Although the emphasis on travel routes was found more often on static, author-oriented designs, a few interactive maps mapped and highlighted a suggested trail. The Lake Erie Ale Trail (VisitErie 2016) has a 110-mile suggested trail represented with a blue line on Google Maps.

Most maps only advertised breweries on their trail. Despite many tourism agencies suggesting related activities along the trail, the majority did not include any themes including these activities on their map (77.2% of the total number of maps). Of the twenty maps that did include additional items, wineries and distilleries were the most commonly connected tourist activity. Figure 8 displays two examples of how the ale trails either do not or just barely advertise additional tourism activities. The Hershey Harrisburg Wine Country LLC and Hershey Harrisburg Regional Visitor Bureau (2013) created the "Hershey-Harrisburg Craft Beer Country Trail," which clearly identifies each brewery within an approximately 30 to 40 mile region on a shaded relief map, displaying the topography, rivers, and major highways. The accompanying text on the website supports additional tourist activities, but they are not displayed on the map. The website claims these breweries have a vast selection of handcrafted brews surrounded by first-rate attractions and world-renowned restaurants

and hotels. The Finger Lakes Beer Trail Marketing and Tourism Associates (2015) created "The Finger Lakes Beer Trail," which promotes New York State as a premier craft beer destination, listing the breweries and displaying them on Google Maps. This map attempts to promote other tourist activities with different colored symbols, yet the extent of items other than the breweries is limited. The map displays 105 breweries and brew pubs and 10 lodging accommodations, but only three restaurants, two retail stores, and two attractions.

Only a handful of beer trails are accompanied by maps that promote the larger tourism region, with a slight increase occurring as the geographic extent of the area depicted increases, from local, to regional, to statewide maps (6.2%, 10%, and 16%, of maps at each respective scale). Most of these maps characterize the physical landscape, depicting topography, beaches, and mountains. As seen in Figure 8, the design of these maps almost exclusively changes to cartoon-like symbols, fonts with handwritten appearances, and highly generalized locations. The Jacksonville Visitors Bureau prominently promotes the "Beerventure" (Figure 9) as one of the most prominent activities on their official tourism website (n.d.). The map displays the major highways and sections of town, with the labeling of beaches and graphic scale appearing to be lettered by hand. Colored star shapes are used to symbolize the breweries. The map

Figure 8. *Examples of the absence or limited inclusion of additional tourist activities on trail maps (Hershey Harrisburg Wine Country, LLC and Hershey Harrisburg Regional Visitor Bureau 2013; Finger Lakes Tourism and Marketing 2015).*

Figure 9. Examples of beer trail maps that promote the larger tourism destination. Jacksonville, FL, Fort Worth, TX, and Grand Rapids, MI, (left to right) utilize cartoon-like symbols and fonts with a handwritten style.

is intended to grab the viewer's attention and provide relative location rather than actual directions to the brewery. The Fort Worth Convention and Visitors Bureau (n.d.) encourages people to download the official "Ale Trail Map" from their website. The map sits amongst links to the individual breweries, an incentive passport program, and "off the trail" promotion of wineries and distilleries. The map has an extremely generalized outline of the city locating the breweries with their individual logos on a few main roads. The surrounding area is displayed with a light green background, the river is symbolized with a smoothed blue line, and several iconic, cartoonish drawings such as a cowboy hat, cowboy boots, and cattle fill the page. The drawings are intended to be characteristic of the region rather than representative of specific tourist destinations. Similarly, the Grand Rapids Convention and Visitor Bureau (2014) encourages people to download their "Beer City Ale Trail" map. This map colorfully and clearly advertises the numerous breweries located in and around the city. The top of the map has a cartoon-like skyline with a few iconic buildings and bridges intermixed amongst trees, a bicycle, a sailboat, and towering beer bottles and beer glasses, implying that beer is deeply connected to the historic and current landscape of the city. A few regional towns and points of interest are drawn on the map, and the text appears to be handwritten. The appearance of stylized trees, watercolor-painted background, lower-case letters for Lake Michigan, and a disclaimer stating "map not to scale" gives the map an inviting, warm, friendly place to visit with a slightly juvenile, cutesy feel.

Of all the beer trails promoted by tourism offices, two maps communicate the location of breweries in addition to other local experiential tourism activities and promote the regional landscape in a well-designed, balanced graphic using symbols, colors, and pictures that are somewhat age-appropriate for the typical craft beer consumer. One example (Figure 10) is the "North Lake Tahoe Ale Trail," map produced by the North Lake Tahoe Chamber (2015). The website describes the large, alpine lake
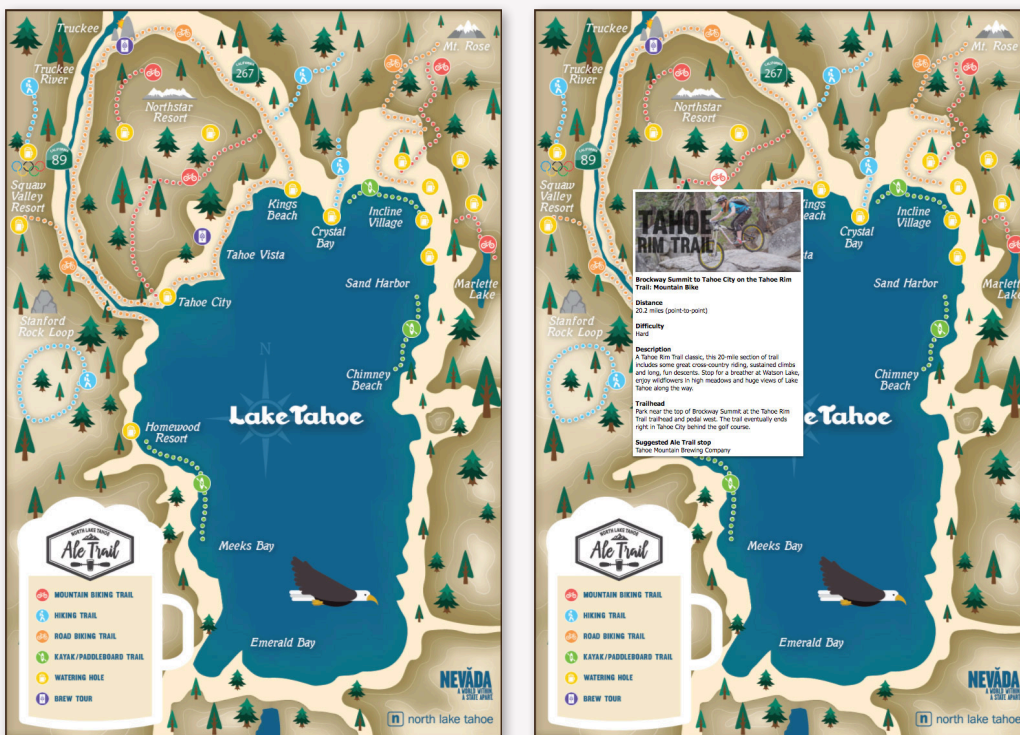

Figure 10. Lake Tahoe interactive "Ale Trail" map that provides the viewer with additional experiential activities in close proximity to breweries (North Lake Tahoe Chamber 2015).

that hosts endless adventurous outdoor activities amidst an equally diverse set of breweries. Text and short videos describing recreational activities such as kayaking, paddle boarding, mountain biking, and skiing fill their website along with an interactive ale trail map. The overview map, seen in Figure 9, is colorful and eye-catching, with simplified, iconic symbols for mountain bike trails, road biking trails, hiking trails, kayak/paddleboard trails, ski resorts, and breweries superimposed on a lightly shaded map with subtle isolines indicating the local topography. Major highways, resorts, mountains, rivers, and lakes are symbolized mostly in primary colors, and labeled in white. The background of the legend forms the shape of a beer mug, and the title "Ale Trail" is capped with a sketch of mountains and underlined by paddles. These design techniques connect the regional landscape with the theme of the map, but do not distract from the important points of interest. When map viewers mouse over mapped features, an additional menu appears. Detailed information, descriptions, pictures, videos, links to websites, and hours of operation are provided.

Figure 11 is another example of a map that encourages tourism and promotes attractions near breweries. This map, generated by the Montana Brewers Association (n.d.), encourages viewers to go to the website www.visitMT.com to learn about the great state of Montana and visit one of the state's 60 craft breweries. The map highlights a few major highways and state roads, but draws more attention to the physical landscape by representing the dry plains and the lush mountainous areas. Major rivers, towns, parks, historic points of interest, and outdoor recreation opportunities are mapped. Drawings of wildlife, big-game hunting, fish, and tractors are sketched on the map, but in a more realistic style rather than the previously described cartoon-like images. Pint glasses mark the location of the breweries as the focal point of the map, but the additional eye-catching, aesthetically pleasing, and decorative features encourage the viewer to examine and study the map. The clustering of large symbols over a seemingly small

Figure 11. *The Montana Brewery Trail Map marks the relative location of breweries within the state while promoting a range of other activities (Montana Brewers Association, n.d.).*

area, due to the small map scale, generates a perception that the landscape is brimming with a range of activities in a state permeated with breweries.

The variation in maps found in this study suggests that the majority of maps designed for marketing beer trails emphasize wayfinding to a destination rather than increasing tourism to a region. While most cartographers stress communication, they generally agree that maps have aesthetic functions as well, and those aesthetics will impact how a user interacts with the map (Kent 2012). Additionally, maps should seem to relate to the interests and demography of the target audience, and can be a framework for marketing a sense of place (Warnaby 2008). As seen in the Lake Tahoe map and the Montana map, a well-designed beer trail map can suggest activities that might be of interest to the typical demographic that drinks craft beer. Maps that advertise a region to active, environmentally conscious, millennial males may promote additional stops during the trip, sightseeing, and combining a range of activities along with visiting a craft brewery.

CONCLUSION

THE GOAL OF THE PROJECT was to assess if beer trails generated by tourism agencies included a map, and if so, what was their intended use, what common design traits they shared, if they represented the regional landscape, and if they promoted other experiential tourism activities

that would potentially generate additional benefits to the travel destination. Undeniably, tourism agencies aggressively advertise local breweries as an experiential activity. In most cases, beer trails are as proudly promoted as local parks, museums, historic buildings, festivals, and

other prominent tourist attractions. Regardless of the geographic extent of the destination, or the distinction of the beer-producing region, beer trails are highly advertised tourist activities.

One hundred beer trails, 88 of which had maps, were identified from national, state, regional, and local tourism agency websites. This study focused on the potential for a map to generate tourism, and thus focused only on beer trails associated with tourism agencies, however it should be noted that many magazines, newspapers, and personal blogs have developed very nice, artistic maps that display a range of other activities. QCA was used to analyze the 88 maps identified for this study.

Maps developed for beer trails on tourism websites, however, are significantly underutilized for marketing purposes, and many do not effectively promote additional travel destinations. The maps rarely represent other tourist amenities, and most are not designed to their full marketing potential. The majority of trail maps that include directions to breweries or promote an actual travel path are generated with Google Maps. Google Maps' purpose is to allow the map user to navigate effectively from point A to point B, usually with the shortest distance and time. The graphic communication and design focus of Google Maps is on the actual streets that enable users to reach their destination. Although multiple routes can be suggested, Google Maps will most often suggest traveling on main roads or highways, yet it is the smaller, back roads in many agritourism areas that are more likely to support additional points of interest, such as fruit stands, pick-your-own farms, smaller villages with historic points of interest, and other local craft shops and businesses. If most people using the internet to view a tourism website are in the initial stages of gathering ideas and planning a trip, designing a map that effectively promotes the general locations of breweries and assists in discovering additional off-the-beaten path activities may potentially generate regional development. In an era of readily available in-car navigation systems and smart phones, communicating what else a visitor can do, eat, or see in an area may be much more important than knowing how to get there.

A handful of maps were purposefully and artistically designed with effective symbolization highlighting the location of breweries, and only a few beer trail maps were designed to focus the viewer's attention on the regional landscapes and additional points of interest. Most of these maps were designed like postcards in the 1950s, with iconic, cartoon-like drawings and highly generalized locations. Admittedly, these bright colors and cartoon drawings are eye-catching, but are slightly unrealistic and juvenile in appearance. The cutesy map designs may not be an effective marketing tool for the typical craft beer drinker: a well-educated male over the age of 35.

Only two maps, "Lake Tahoe Ale Trail" and "The Montana Brewery Trail Map," highlighted the distribution and locations of breweries, suggest pathways, represent the regional landscape, and promote additional activities using symbols, colors, fonts, and pictures appropriate for the age demographic of their target market audience. Two out of the 88 official trail maps is an exceptionally small proportion, and demonstrates the conspicuous lack of use of map design principles that could harness maps' potential to channel tourists to desired tourist activities. Most of the maps only support wayfinding needs rather than encouraging tourists to travel to and explore other attractions outside or surrounding the destination. Possible future research could examine what aspects of map design are likely trigger specific actions by particular demographics. If a cartographer understood which aspects of design along with what design style, and how many features and themes on a map resulted in the desired map user behavior (visiting additional tourist attractions), then guidelines and best practices could be suggested for experiential tourism maps.

Travel to breweries and consumption of craft beer is part of a much larger farm-to-table movement. Most breweries fully embrace their connections with the local history and geography and engage in sustainable practices that support other local farmers and businesses. Experiential tourism and craft beer are both witnessing an economic resurgence. Mass-produced beer companies have engaged in overt forms of advertising for decades; tourism agencies should seek assistance from cartographers to advertise craft beer companies as well. A well-designed, effective map could promote not only the lure of craft beer, but also persuade visitors to travel to a region, enjoy the local environs, explore back roads, engage in a range of experiential activities, and in short, influence the success of a region.

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APPENDIX

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3. Ale Trail Jackson County, NC www.discoverjacksonnc.com/attractions/brewery-trail

4. Anaheim Beer Hop visitanaheim.org/explore/anaheim-brewery-trail

5. Atlanta Metro Craft Brew Flavor Tour www.exploregeorgia.org/itineraries/georgia-craft-breweries-and-distilleries-flavor-tour

6. Arizona Brewery Tours www.azbrew.com

7. Arkansas Brewery Trails www.arkansas.com/taste/breweries-distilleries/trails

8. Asheville NC Ale Trail ashevillealetrail.com

9. Bend Ale Trail www.visitbend.com/things-to-do/Bend-Ale-Trail

10. Berkshire Beer and Cider Trail www.berkshirefarmandtable.org/taste-trails-beer-cider

11. Bloomington Local Craft Ale Trail www.bloomingtonaletrail.com

12. Brew Ridge Trail brewridgetrail.com

13. Boise Ale Trail boisealetrail.com

14. Boulder Ale Trail boulderaletrail.org

15. Brattleboro Beer Trail www.vermontbrewers.com/brewery-trails/brattleboro-trail

16. Brew Grass Trail www.kentuckytourism.com/dining/trails/brewgrass

17. Brews in the Gorge www.breweriesinthegorge.com

18. Central Coast Beer Trail www.centralcoastbeertrail.com

19. Central Florida Ale Trail centralfloridaaletrail.com

20. Central PA Tasting Trail www.visitpennstate.org/eat/central-pa-tasting-trail

21. Coastal VA Beer Trail www.virginia.org/listings/WineriesAndBreweries/CoastalVABeerTrail

22. Columbus Ale Trail www.cbusaletrail.com

23. Connecticut Beer Trail ctbeertrail.net

24. Cooperstown Beverage Trail www.cooperstownbeveragetrail.com

25. Craft Beer Trail www.visittheusa.com/trip/craft-beer-trail

26. Cumberland Valley Beer Trail
www.visitcumberlandvalley.com/things-to-do/
food-wine-beer/beer-trail

27. Daytona Beach Ale Trail
www.daytonabeach.com/things-to-do/ale-trail

28. Delaware Beer, Wine, and Spirits Trail
www.visitdelaware.com/beer-wine-spirits-trail

29. Delmarva's Wine and Ale Trail
toastourcoast.com

30. Denver Beer Trail
www.denver.org/restaurants/denver-bars-clubs/
denver-beer-trail

31. Downtown Phoenix Urban Trail
dtphx.org/things-to-do/aletrail

32. Duluth Ale Trail
www.duluthbeertrail.com

33. Edible Santa Fe Craft Brewers Trail Map
www.ediblenm.com/craft-brewers-trail-map

34. Eugene Ale Trail
www.eugenecascadescoast.org/eugene-ale-trail

35. Evansville Craft Beer Trail
drinkin.beer/tag/evansville-craft-beer-trail

36. Fayetteville Ale Trail
fayettevillealetrail.com

37. Finger Lakes Beer Trail
fingerlakesbeertrail.com/content

38. Flagstaff-Grand Canyon Ale Trail
www.flagstaffaletrail.com

39. Fort Worth Ale Trail
www.fortworth.com/aletrail

40. Grand Rapids Ale Trail
www.experiencegr.com/things-to-do/beer-city/
beer-tour

41. Grapes and Grains Tour
www.grapesandgrainstrail.com

42. Gulp Coast: St. Pete/Clearwater's Craft Beer
Trail
www.visitstpeteclearwater.com/
gulp-coast-craft-beer-trail

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www.oneidacountytourism.com/beverage-trail

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hillcountrycraftbeertrail.com/trails

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www.visithowardcounty.com/howard-on-tap/
trail-stops

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www.hudsonvalleybeertrail.com

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inlandnwaletrail.com

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www.iowabeer.org/#iowabeertrails

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www.beerwineshinetrail.com

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www.kcaletrail.com

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knoxvillealetrail.com

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www.lakeeriealetrail.com

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www.gotahoenorth.com/
north-lake-tahoe-ale-trail-map

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www.discoverlancaster.com/lancaster-coun-
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brew-bars

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www.visitloudoun.org/things-to-do/
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www.visittheusa.com/experience/
louisianas-brewery-trail

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libations.louisianatravel.com/breweries

63. Maine Beer Trail Passport
mainebrewersguild.org/
new-maine-beer-trail-passports-are-here

64. Maryland Craft Breweries
www.visitmaryland.org/
breweries-wineries-and-distilleries

65. Massachusetts Craft Brewers Trail
www.mass.gov/agr/massgrown/culinary_tour-
ism/docs/brewery-brochure.pdf

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www.middtastingtrail.com

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www.exploreminnesota.com/travel-ideas/
trekking-minnesotas-north-shore-beer-trail

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www.visitmississippi.org/app/webroot/files/
Mississippi%20Brewery%20Trail%202015.pdf

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www.missoulaspiritandaletrail.com

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www.visitmt.com/montana-stories/mon-
tana-pressroom/story-ideas/ale-trail.html

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brewlynotedbeertrail.com

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www.virginia.org/listings/wineriesandbreweries/
nelson151trail

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www.visitnc.com/trip-idea/a-tasty-craft-brew-
tour-north-carolina-style

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www.ndtourism.com/articles/
north-dakota-beer-and-wine-trail

75. Oakland Ale Trail
www.visitoakland.com/things-to-do/
oakland-ale-trail

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oregoncoastbeer.com/home-menu

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www.travelportland.com/directory/pdx-ale-trails

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www.visitphilly.com/itineraries/philadelphia/
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pittsburghaletrail.com

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forknroadproductions.com/wine--ale-trail-map.
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www.visitraleigh.com/raleighbeertrail

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www.visitrichmondva.com/drink/
richmond-beer-trail

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www.southernoregon.org/rogue-valley-ale-trail

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www.santabarbaraaletrail.beer

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www.santacruzbeertrail.com

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beerwerkstrail.com

87. Shore Craft Beer
shorecraftbeer.com/brewery-trails

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www.sonomacounty.com/articles/beer-trail-itin-
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89. South Shore Indiana Brewery Trail
www.southshorecva.com/ssbt

90. Southwest Florida Ale Trail
www.swflaletrail.com

91. Summit Brew Path
www.summitbrewpath.com

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www.us23heritageroute.org/wine_and_hops.asp

93. Susquehanna Ale Trail
www.yorkpa.org/things-to-do/
susquehanna-ale-trail

94. Tampa Bay Ale Trail
www.tampabayaletrail.com

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www.taptrail.com

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visittrivalley.com/tri-valley-beer-trail

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www.valleyvisitor.com/western-mass-beer-trail.
html

98. Wilmington Ale Trail
wilmingtonaletrail.com

99. Wyoming Beer Trail
www.wyomingbeertrail.com

GeoDataHub @ Auckland

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AN IDEA IS BORN

OVER 10 YEARS AGO, I received an intriguing email from Brian Marshall, then Subject (and Map) Librarian for Geography and Environmental Science at the University of Auckland Library. He provided me with a link to a digital repository of Polish topographical maps published between 1919 and 1948 by the Military Geographical Institute (Wojskowy Instytut Geograficzny — WIG, **english.mapywig.org**). The website was very simple, perhaps even uninviting to the untrained eye, but the wealth of information it contained was simply staggering! For the first time, I could grasp the breadth and scope of WIG's production, their humble beginnings during the reconstruction of Poland after World War I, and the road to their exemplary topographic mapping of the 1930s, so readily used and reproduced by the invading armies during World War II. It did not take long for me to envisage a similar development here at the University of Auckland, whereby systematic digitisation of New Zealand maps and charts could provide a window into the cartographic heritage of this country. Furthermore, it could lead to a showcase of conceptual developments in cartography, surveying, photogrammetry, and other mapping, earth, and social science disciplines, highlighting their contribution to the development of the nation. It was easy to imagine that such a resource would also support dynamic, innovative, and leading edge historical and GIScience research, facilitating scientific discovery and knowledge building. The question was: where to start?

My initial contact with Marek Zieliński, the brain behind the WIG portal, quickly revealed countless traps and frustrations with his project. Many map libraries and archives were reluctant to let their maps be scanned, particularly when contact scanners were to be involved. Lack of institutional support for Marek's work and recognition of his vision were the primary reasons for these setbacks. Although he donated copious amounts of his private time

and energy, Marek struggled to get funding, generate community support, and purchase decent equipment. Since then, things have changed for the better and, although the situation is far from ideal, the repository of WIG maps is currently the authority on topographic mapping of the Polish territory during the first half of the 20th century. These early contacts, followed by extensive communication with vendors, digitisation project leaders, map librarians, and the cartographic community in New Zealand, helped to place our plans for a comprehensive map digitisation programme on the right footing from the word go!

To clearly define the scope of our undertaking, the decision was made early to focus on capturing authoritative maps and charts produced by the New Zealand government and its agencies (Figure 1). We believed these cartographic products would be the most useful in research pursuits and provide a quality resource for teaching and learning. This decision also defined our strategy with regard to soliciting the help and assistance of various contributors in making the programme a success. Identification and selection of cartographic material for scanning—ideally in mint or very good condition—was an important consideration, particularly with our adopted "scan once" approach, meant to minimise handling of the original maps while creating faithful digital copies. As far as equipment, we were very fortunate to have available a large format scanner capable of digitising original material in full colour at high resolution.

These early developments allowed us to map the road ahead. Brian Flaherty, Associate University Librarian (Digital Services), was instrumental not only in recognising the value of digitising and making available the body of New Zealand maps but also in understanding the financial requirements of such an undertaking. Brian's plan was to secure internal University funding towards a pilot

Figure 1. Authoritative Maps: *New Zealand Mapping Service series 24 (NZMS 24) map "Dominion of New Zealand with Mountain Features in Pictorial Relief"; published in 1921 at the scale of "one inch to 25 miles" (1:1,584,000) by New Zealand Lands and Survey Department. This innovative, aesthetically attractive, and authoritative map encapsulates the ever-present spirit of New Zealand cartography and its drive for excellence.*

Figure 1 (Continued).

project that would allow us to get off the ground and attract the support of external organisations and agencies to see the continuation of our map digitisation programme into the future, should we successfully deliver the goods. He drafted a proposal to the Vice-Chancellor's Strategic Development Fund asking for funding towards "a pilot project to develop a repository of cartographic and geospatial materials for the University of Auckland." This proposal, put forward collaboratively by the School of Environment and the University Library, was subsequently approved and the wheels were set in motion.

THE PILOT PROJECT

THE PILOT PROJECT SERVED TWO strategic goals: proof of concept and the identification of opportunities and issues related to map digitisation. The proof of concept resulted in the development of a unique expertise in digitisation, image processing, georeferencing, and capturing metadata for cartographic materials, supported by detailed documentation of the processes involved. Most of this work was done by Shannon McColley, Lead Digitisation Technician, who became a digitisation guru and a driving force behind these developments. Shannon coined the pilot project acronym IMAGINZ (Inventory of Maps and Geospatial Imagery of New Zealand) which quickly became a household name amongst the project team and the wider mapping community following her presentations on the subject at local and national fora, especially the GeoCart cartographic conferences. These often highly technical talks provided many tips and tricks on map digitisation, particularly relating to the use of contact scanners and the processing of map images.

Based on the rapid success of IMAGINZ, we were able to attract the attention of additional partners who contributed both expertise and further funding. Ultimately, this led to our building an extensive network of contacts and partnerships with a number of organisations, most notably the National Library of New Zealand (NLNZ), the National School of Surveying at the University of Otago, Land Information New Zealand (LINZ) and the New Zealand Defence Force (NZDF).

NLNZ offered training on physical map handling and identifying the suitability of cartographic material for scanning using our equipment. They provided guidelines and parameters for digitisation (600ppi optical resolution, 24-bit RGB colour depth, Adobe 1998 colour space, uncompressed TIFF format, etc.) and provided extensive quality assessment of our scans to make sure they meet NLNZ preservation requirements. The expertise of the National School of Surveying was highly valuable in the area of georeferencing cartographic materials to maximise their application in GIS analysis. LINZ, the custodian of most of the maps and charts targeted by our project, provided access to their map collection, mostly in excellent condition, for scanning. LINZ's maps and charts are held at the NZDF Map Library and NZDF graciously hosted our equipment and personnel on site for several years. The knowledge of Michelle Phillips, NZDF Map Librarian, became quickly appreciated when we had to find a particular map amongst over 100,000 others stored in the library or when we needed historical background on various map series earmarked for scanning. Michelle's assistance and patience in answering our endless questions constantly reminded us about the true collaborative nature of the project, manifested in the wide-ranging institutional support we received and in the genuine help of individuals who, like us, believed in the value of our endeavour.

Between August 2009 and December 2011, IMAGINZ delivered what Brian was hoping for from the pilot, and more! We had researched, tested, and documented the entire process of digitising sheet maps and charts, from handling the originals and mastering the scanning equipment to image manipulation, georeferencing, and metadata capture. Over 3,750 maps published by the New Zealand government had been scanned and made available to the public. Through forging strategic partnerships with relevant organisations, the pilot project provided a platform to expand this growing repository into a nationally significant archive of historical and contemporary cartographic and geospatial materials. The digitised maps also became part of the National Digital Heritage Archive maintained by NLNZ and provided important nomenclature information to the New Zealand Geographic Board, responsible for researching and approving the official geographic names in New Zealand and the Ross Dependency in Antarctica. Lastly, we managed to attract much needed financial support for the continuation of our efforts into the future.

THE DIGITISATION PROGRAMME

In July 2011, the University of Auckland signed a formal, three-year agreement with NLNZ for "the digitisation of, and creation of metadata for, cartographic and geospatial materials for the research, government and educational communities of users, as well as to the public of New Zealand." This important collaboration, which started in January 2012, was subsequently extended twice and eventually concluded in June 2016. The IMAGINZ team was charged with running the digitisation programme, taking advantage of its experience gained during the pilot project.

The start of the partnership with NLNZ coincided with the appointment of Laura Armstrong to the position of the GIS and Geospatial Librarian. Her task was to consolidate geospatial information distributed around the University into a single repository managed by the Library and to develop an online geospatial data guide about the cartographic and GIS resources available at the University. Laura's contribution, however, went far beyond her original work portfolio. She was one of the first to realise the value of incorporating the digitised maps and charts into the new centralised repository. Laura's advocacy in this area resulted in increased digital storage to accommodate map images, standardised geospatial metadata records, and the incorporation of new content into the geospatial data guide, bringing additional exposure to digitised cartographic materials. But perhaps her most significant contribution was to persuade the Library to consolidate the digitisation programme team under one roof. Implemented in two stages in 2014 and 2015, this move considerably improved the management and decision making concerned with staffing and work planning.

The digitisation programme concluded in December 2016 following a 6-month winding down period sponsored by the University Library. During this time, we focused on filling the gaps in the collection, completing the processing of scanned maps and charts, georeferencing, creating geospatial metadata records, and updating and finalising documentation. Since the beginning of scanning in March 2010, we have digitised over 25,000 maps and charts, of which just under 6,500 are now georeferenced. Almost all of these maps were scanned by Shannon—an incredible achievement in its own right!

THE GEODATAHUB

The consolidated repository of cartographic and geospatial resources started by Laura eventually evolved into the GeoDataHub (GDH). GDH aspires to provide an authoritative and freely accessible national repository of historical and contemporary digitised maps, aerial photographs, satellite imagery, and geospatial datasets of New Zealand to research, government, and educational communities of users, as well as to the public of New Zealand. In addition to the scanning of maps and charts, the ongoing GDH objectives include providing integrated and enhanced data access, including an interface for textual, spatial, and temporal searching, facilitating metadata harvest and discovery, and demonstrating the value of the GDH through promoting innovative research utilising the geospatial resources provided (Figure 2). Furthermore, GDH aims to build a knowledge base concerning New Zealand's cartographic heritage, with particular focus on authoritative mapping.

One of the facets of GDH is the web-based Cartographic and Geospatial Resources Repository (gdh.auckland. ac.nz), which launched in August 2016. This developing repository of map images features maps published by the New Zealand Lands and Survey Department (later called Department of Survey and Land Information, and now LINZ) since the 1860s. Digital topographic databases produced by LINZ since 2011 for New Zealand and its offshore islands, the Cook Islands, Niue, Tokelau, and the Ross Dependency in Antarctica are also provided. Over 20,000 maps, charts, and datasets are now available and, as of 31 October 2017, nearly 2,000 users from 50 countries have visited the website to browse and download data. All resources contained in the repository are subject to a Creative Commons Attribution 3.0 New Zealand (CC BY 3.0 NZ) licence, creating ample opportunities to use and reuse the data. This open access is welcomed by many communities, particularly artists, designers, historians, cartographers, developers, and geospatial analysts.

GDH has already enabled a number of valuable and even ground-breaking projects. One of these involved researching the spatial extent of glaciers in the Southern Alps

Figure 2. (Re)Discovery: *While working on NZMS 3 NZ Mosaic Map sheet N4/9 & N6/5 from 1953 (1), Benjamin Jones, Digitisation Technician, noticed a small island north of Simmonds Islands (see red circle), which he could not see on the then-current 2013 NZTopo50 map (4). Further research revealed the island was last shown on the imperial NZMS 1 NZ Topographic Map in 1977 (2) before disappearing from the metric NZMS 260 Topographic Map published in 1984 (3) and all subsequent maps for over three decades! His finding was forwarded to LINZ who, after its own investigation, confirmed the island's existence and reinstated it on the most recent edition of NZTopo50 map (5) in 2016.*

through time by comparing georeferenced imperial "one inch to a mile" (1:63,360) topographic maps dating back to the early 1940s and their metric 1:50,000 equivalents published between the 1970s and 2000s to current topographic datasets and imagery. This auxiliary study contributed to a body of research that delivered a surprising outcome suggesting that over fifty New Zealand glaciers actually advanced over the last 30–40 years: quite the opposite result to a global trend of glacial retreats reported elsewhere.

Another initiative using our digitised maps is MapsPast (mapspast.org.nz), a community-based project providing a visual window into the historical and contemporary geography of New Zealand. Its trademarks are predominantly seamless, country-wide map coverages produced at 10-year intervals from 1899 to 2009. They are created by georeferencing and stitching together national cadastral or topographic map series obtained almost exclusively from GDH. MapsPast has a wide following amongst varied users who find the service very valuable for their work or personal pursuits. Recently, an investigation into improving the national DTM has been undertaken. One approach is to assess the suitability of the 1:25,000 photogrammetric plots for this task (Figure 3). These plots were created between the 1970s and 1990s as an intermediate step in producing the 1:50,000 national topographic map series. They contain a much higher density of spot heights

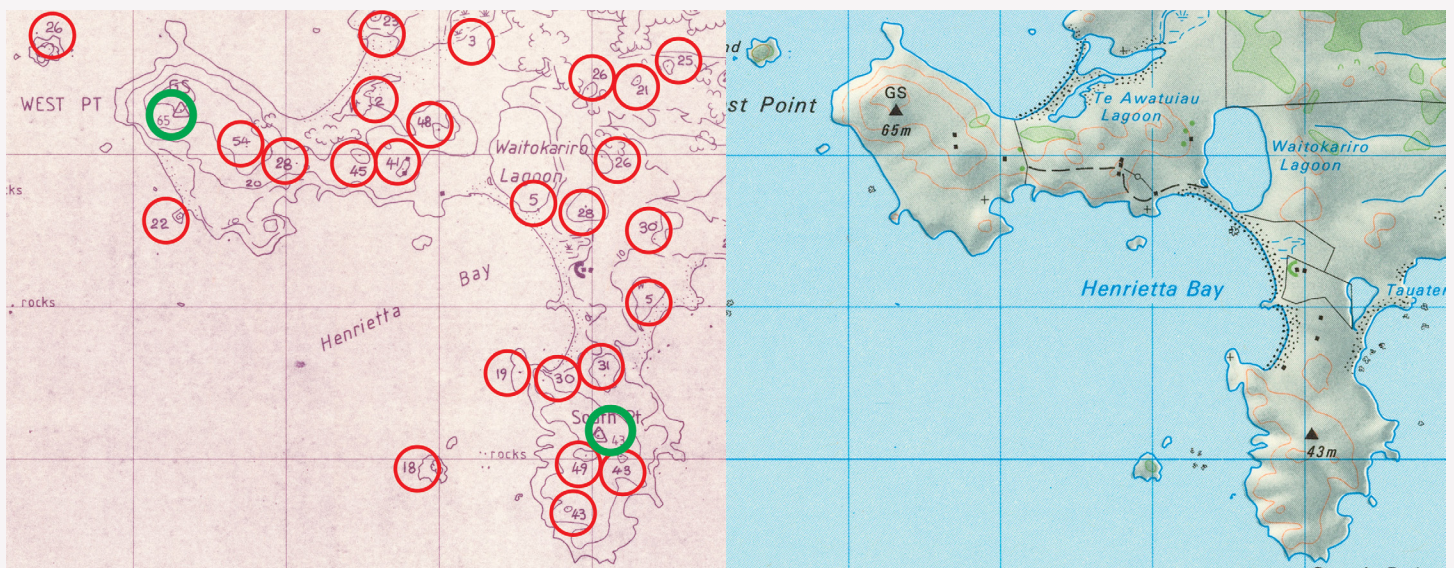**Figure 3. Valuable Projects:** *GDH is a valuable source of information for an ongoing investigation concerned with enhancing the national DTM. The 1:25,000 photogrammetric plot (left) records a far greater density of spot heights (red circles) than the equivalent published 1:50,000 topographic map of the same area (green circles), arguably providing better resolution data for modelling the 3rd dimension.*

than the published and subsequently vectorised topographic maps, hence supposedly providing better resolution for modelling the third dimension. The study is still ongoing but we are already delighted to see GDH resources being used in this investigation.

GDH is very much a work in progress. Our current effort concentrates on a web-based catalogue application that can manage our cartographic and geospatial resources and provide powerful search functionality. The next phase will involve adding new content, not only digitised maps and charts but also geospatial datasets and imagery. We are continually working on a knowledge base that will deepen general understanding of our national cartographic heritage and hopefully support discovery and innovation. Our often serendipitous "treasure hunting" and constant pursuit for the lost and forgotten will ensure continued sharing of exciting cartographic material and mapping stories for a long time to come.

THE HEART

THIS STORY IS FOREMOST a testimony to the vision, support, and determination of the people who were, and often still are, at the heart of our journey. These few mentioned here represent many who share the true spirit of our undertaking and genuinely care for New Zealand's cartographic heritage. Some, like Marek and Brian (Marshall), came up with great ideas and were happy to provide invaluable insight based on their experiences—good and bad—with similar map digitisation projects. Others, like Brian (Flaherty) and Shannon, made sure we were well resourced, both in terms of personnel and funding, to keep us going forward, ensuring that the volume and quality of our scanning satisfied (or exceeded) both the programme goals and industry standards. Yet others, like Michelle and Laura, willingly contributed their knowledge to assist us in understanding the stories behind the maps and charts published in New Zealand and steered our programme towards new heights by optimising digital storage infrastructure and facilitating a centralised repository of cartographic and geospatial materials augmented by an informative online data guide.

Collectively, this group of dedicated people not only made significant professional and often personal contributions but also successfully advocated for our cause at their workplaces and communities. This in turn resulted in our obtaining wide-ranging institutional support, including the provision of access to quality cartographic collections and financial backing that sustained a digitising programme for many years. In essence, these developments put us on the solid path that has seen the gradual transformation of what was essentially a large map scanning exercise into a growing GDH service. This would never have been possible without so many sharing in the vision and going the extra mile.

We are very fortunate to see the real difference these cartographic and geospatial resources are making to various government, research, and educational communities. Equally validating is how they have been embraced by the general public of New Zealand. Melanie, a GDH user, wrote, "Just wanted to congratulate you (and all involved). This is an awesome project and a great teaching opportunity for students." We are truly humbled by the appreciation we receive from people like Melanie and find it an inspiration to keep up the good work!
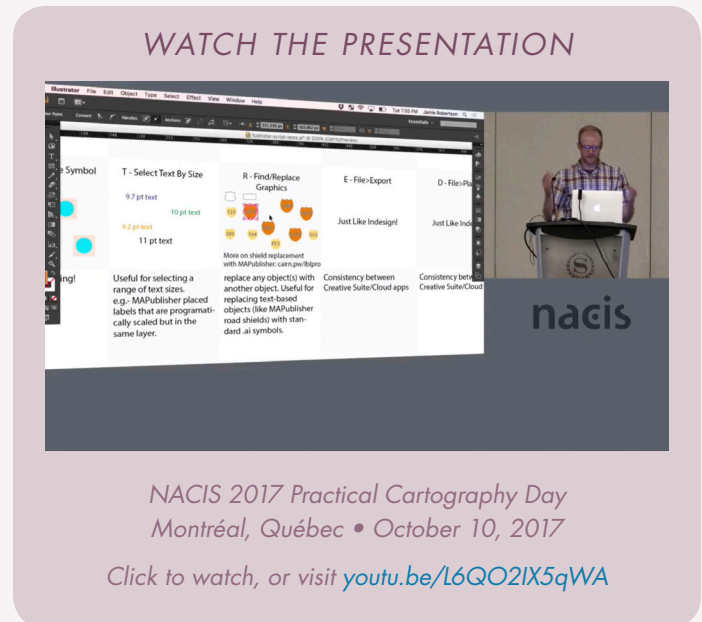
Enhance Productivity in Illustrator with Scripts and Shortcuts

Jamie Robertson
Adventure Cycling Association
jrobertson@adventurecycling.org

As a cartographer at the Adventure Cycling Association, the task of maintaining 109 cycling maps (over 1600 individual map documents!) and adding new ones can seem monumental. I primarily use Adobe Illustrator to create the maps, and I only use a tiny subset of the numerous tools and functions available. The ones that I do use, however, I use countless times every day. With so many maps to maintain and an ever-growing number of update tasks that need to be performed, efficiency is critical. To this end, I've developed methods to save precious time by skipping menu navigation for common tasks and extending Illustrator functionality with a highly curated set of custom scripts and keyboard shortcuts which have proven invaluable for repetitive cartographic tasks.

Adobe Illustrator comes with some functionality to customize keyboard shortcuts for certain tools and actions. I've found this offering quite limited, and not extensible to custom scripts. Some research outside of Illustrator yielded a third-party solution for both the MacOS and Windows platforms that works much better. For MacOS, a lightweight application called Spark loads the entire menu structure of Illustrator (or any application, for that matter) and then allows any menu item to be wired up to a user-defined keyboard shortcut. For Windows, a similarly lightweight but extremely flexible application called AutoHotKey meets the same goal.

Not surprisingly, many tools in Adobe Illustrator seem like they have defaults that just weren't designed with the cartographer in mind—what gives? To make Illustrator perform more like a fine cartographic tool, I've put together a repository of scripts wrangled from the recesses of the internet. Some simply modify the default setting of an Illustrator tool or function to perform in ways that are more suitable for fine cartography. For example, this repository includes scripts to make the stroke weight +/- arrows increment by 0.1pt instead of 1pt and to change

WATCH THE PRESENTATION

NACIS 2017 Practical Cartography Day
Montréal, Québec • October 10, 2017
Click to watch, or visit youtu.be/L6QO2IX5qWA

the alignment of a point-text object without changing the actual location of the text object. These might seem like trivial details, but they can add up in terms of time spent navigating menus or mental anguish watching a tool perform an action that you know you'll have to fix afterward.

Configuring a third-party app might seem like a pain and just one more thing to manage, but the payoff in productivity is well worth it in my opinion. The combination of powerful custom scripts and speedy access via keyboard shortcuts has changed the way I make maps. Additionally, for my NACIS 2017 Practical Cartography Day (PCD) presentation, I prepared pre-made shortcut library files for both platforms, installation instructions, and even a printable cheatsheet to . . . shortcut . . . the process of getting up and running with this valuable set of productivity tools. I encourage any cartographer interested in speeding up their workflows to check out **cairn.pw/nacis2017**, which contains my presentation slides and a GitHub repository with all the goodies.

Off Course: A Creative Exploration of Cartography, Cuisine, and Narrative

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Off Course: A Creative Exploration of Cartography, Cuisine, and Narrative is a fictional anthology of 13 maps, connected by an underlying thread of food. The anthology is presented as if each map were created by a different person. While each map tells a story, there's also a fictional character editing the anthology, with a narrative arc of his own. Our editor protagonist has a background in traditional cartography, but after a bad break up, he is trying to prove (to his ex and to himself) that he can be creative. This work follows his breakdown, which is reflected through the maps he's chosen; the volume begins with with maps that are more conventional, but ends with maps that are more abstract. The editor's story is told through the introductions that accompany each map: his commentaries are initially academic, but become increasingly personal as he struggles to define what a map is.

Each map was created so that it could stand alone as well as work within the larger narrative. Our goal was for each map to both tell a story and represent physical space in some way. Many of the historical maps, like those set in San Francisco and New York, are based on extensive research. While many of the maps have an unconventional form, the ultimate goal is to push the boundaries of what a map can represent by looking at mapping emotion, memory, and narrative.

ACKNOWLEDGEMENTS

Many thanks to Matthew Valentine, Sean LaBounty, Laurie Sauborn, and Becky Nasadowski for their supervision of this project.

EDITOR'S NOTE

The entirety of *Off Course* follows this page, courtesy of the authors. Enjoy!

Visual Fields focuses on the appreciation of cartographic aesthetics and design, featuring examples of inspirational, beautiful, and intriguing work. Suggestions of works that will help enhance the appreciation and understanding of the cartographic arts are welcomed, and should be directed to Section Editor Matt Dooley: mapdooley@gmail.com.

OFF COURSE:
A CREATIVE EXPLORATION OF CARTOGRAPHY, CUISINE AND NARRATIVE

COMPILED BY TIMOTHY LANSED

To Lauren, I hope you find what it is you are looking for.

ABOUT THE EDITOR

Timothy Lansed grew up in Massachusetts and attended University of Massachusetts for his undergraduate studies in Cartography. He obtained his PhD in Geography with an emphasis in Cartographic Studies from the Pennsylvania University of Ohio. He is currently a professor at the Pennsylvania University of Idaho and is the author of several books including *An Atlas of Atlases*. He has spoken at several conferences and is considered one of the world's top scholars on representations of longitudes. His work has been featured in *Maps Monthly*, *Where Are We Now?*, and *The Cartography Quarterly*. He lives alone with a Labrador he sees on alternating weekends, and enjoys playing war board games.

FOREWORD

As many readers may be aware, I have been involved in the academic world of cartography for some time now. However, I feel that this academic lens has held me back from fully exploring the creative side of my interest in maps. While many of my previous works have examined the inherent bias and distortion of mapmaking, I've always approached these biases as flaws, signs of how these elements prevented certain maps from accurately portraying reality. Until now, I haven't had the opportunity to explore how maps can use this same distortion to present a unique perspective. Over the course of my research, I've been compelled to think about how maps can tell stories. I'm an *immensely* creative person which is something that may not be obvious from some of my past works. This project is something I've wanted to put together for many years now and I recently found myself with some time on my hands to make it a reality.

Many would classify this work as a collection of art pieces rather than maps. For those of you, including my publisher, who were hoping my next publication would be *Longitudes: A Legacy Volume 5*, I'm sorry to disappoint. I've chosen to compile this collection because I felt the need to step back and ask what is a map. While as cartographers we spend a lot of time debating the merits of various mapping techniques, we spend comparatively little time delving into what makes a map a map. Again, though our work is highly visual, some might say we are not particularly creative. However, I believe that perception should change. Mapmaking has an important creative component. Whether you're an academic in cartographic studies or a first time reader I ask you to set aside your preconceptions of what a map is for now, as I think you'll be pleasantly surprised.

I picked these maps because each pushes the boundaries of what we would conventionally call a map. They all also talk about another passion of mine — food. Some are unusual specimens I've found over the years during my research, but others I stumbled across in unexpected places. Some of their authors would not consider themselves to be mapmakers. I've opted to focus on American authors, as that's my area of expertise. The first map in this anthology was found at the Iowa Tourism bureau.

Ultimately, even though there is much creativity that goes into completing a map, there is perhaps even more creativity that goes into the analysis of creative maps. This compilation is not intended to be comprehensive; there are always more courses to take, but I think this one has proven worthwhile. I'm very glad my creativity has allowed me to see the value in this project and that I had the strength of will to keep at it. I'm thankful to my publisher for letting me take this journey off course. I hope you enjoy reading it as much as I've enjoyed compiling it.

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The Central Iowa Corn Country Guide was initially created as an agritourism guide for corn farms, much akin to the wine tasting guides of Sonoma's vineyards. It was intended to demonstrate the subtleties in varieties of corn. It stands out in this collection due to its exclusively functional nature. The rich key allows us to understand some of the details even without the shading that might have been used to indicate the topography. The color scheme is used to evoke the yellowness of the corn. I've always wanted to attend such a corn tour but failed to do so while I lived in the area and was pleased to come across this reminder of my time there. This map does seemingly emphasize visual appeal over accuracy, but despite the breaking of conventions it is clear and easy to read. Even given the huge amount of information, each piece is easily found, like an orchestra composed so carefully you are given the impression it's being thought of on the spot. Too many maps today are composed like jazz — haphazardly improvised — producing the opposite effect, whereby, at first, it may appear cohesive until you discover they've failed to document a road or a change in incline. Here, the work is clean and smooth. The thinking is as pure and sweet as the corn.

THE CENTRAL IOWA
CORN COUNTRY GUIDE

THE 2015 BROCHURE FOR
ETHANOL PRODUCERS

TOUR STARTS HERE

CORNVILLE, INC

CORNOCUPIA
PRODUCTIONS

FUEL STATION

LILY GOLD

MS. JOHNSON'S

K&P FARMS
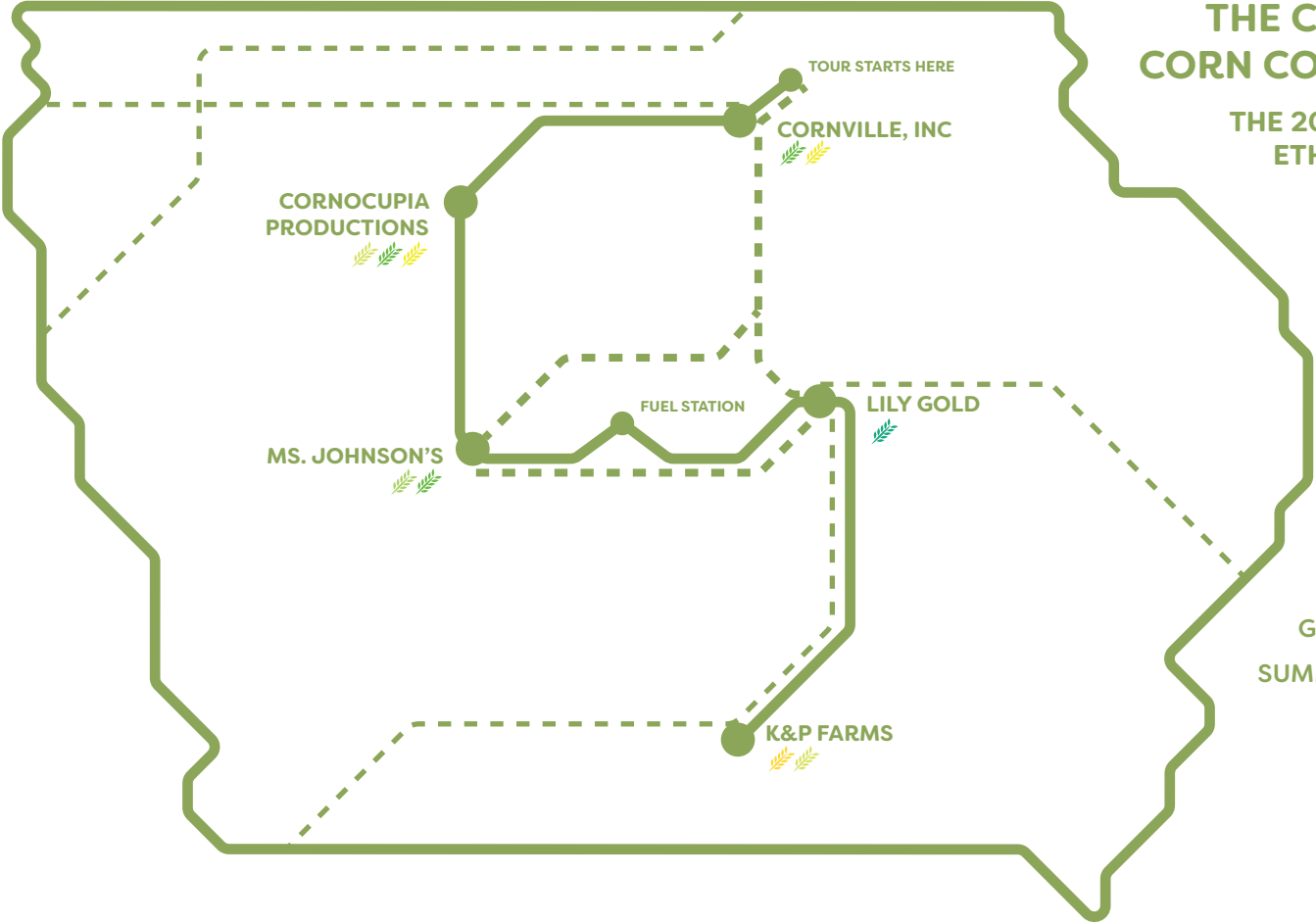
BUTTER CRISP

GREAT WHITE

FLAXEN DELIGHT

GOLDEN DELICIOUS

SUMMER SWEETHEART

JUBILEE GOLD

AMBROSIA

SIDE ROADS

TOUR ROUTE

02

When I was a boy my father took me to see Vincent Price star in *War-Gods of the Deep*. It was a tremendous story about how, off the coast of England, sea creatures battled humans. It was the first time I'd heard of England and perhaps the first moment where I understood there were places very very far away.

At the time, it seemed a stretch that the world existed beyond my neighborhood, or even that parts of the neighborhood continued to function autonomously when I wasn't there. As we sat in the car after the movie, my Dad pulled out one of those huge map books that was necessary before GPS. It only showed our region of Masschusetts, but almost as wishful thinking there was also a world map inside the front cover. My Dad flipped to the world map and pointed to England, and then pointed to Arkham, Massachusetts. I didn't know it then, but that map was terribly inaccurate. The map of the world we typically use dramatically distorts the sizes of the continents. There are several versions of the global map that attempt to amend this. The one I favor is the Waterman Butterfly Projection. While unfortunately this Vincent Price map shares these flaws of distorted global geography, I decided to include it given its attempts to graft fictional occurrences onto our real world.

Vincent Price's Travels Through Reality and Then Some by Liv Summers, Chase Winfield

VINCENT PRICE'S TRAVELS THROUGH REALITY & THEN SOME

VINCENT PRICE WAS AN ACTOR BEST KNOWN FOR PERFORMANCES IN THE HORROR GENRE. WHILE HIS ACTING MADE HIM AN ICON FOR A GENERATION, HE ALSO HAD MANY REAL LIFE CULINARY ADVENTURES. THEY ARE DOCUMENTED IN HIS GLOBAL COOKBOOK, A TREASURY OF GREAT RECIPES. THIS MAP IS A COLLISION OF HIS TRAVELS.

SPECIALTY OF THE HOUSE

SABOYAN DE NARANJA

STEAK MOUTARDE FLAMBÉ

AN EYE FOR AN EYE

SOPA DE AJO

THE JACKALS

DR. PHIBES RISES AGAIN

03

On our first big trip together, to London, I remember remarking on how all the stops appeared to be equidistant on the map, but the time we spent passing between them was highly irregular. This is not unusual with subway maps. Someone went to the trouble of mapping the actual London subway lines in a geographically correct fashion and ended up with a bunch of curved patterns reminiscent of rivers all clumped up in the center. Subway maps are largely the product of designers — and make no mistake these are designers, *not* cartographers — so obsessed with order, with consistency and complementary color schemes that they sacrifice functionality. Order is important, but not at the cost of being true to the source material. When we become so intent on fitting everything into a neat rectangle with rigid lines we lose some value. Much like how if you were on vacation and someone insisted on spending every instant exploring, even if you were quite tired already and didn't fancy a visit to Big Ben, that would be problematic. It would be them just fitting your experience into the box they'd shown up with, ready-made. This map turns the convention on its head. A subway map is wrong because it is utterly useless for navigating a city on foot, but it can guide you between subway stops. As this map shows locations that are exclusively in subway stations, this map is functional.
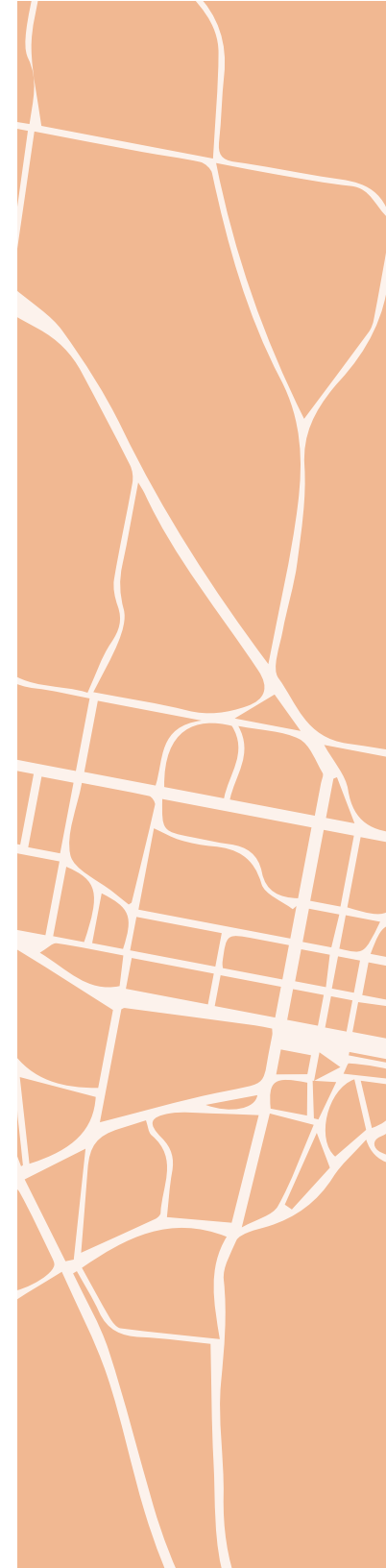
Tokyo Subway Ramen
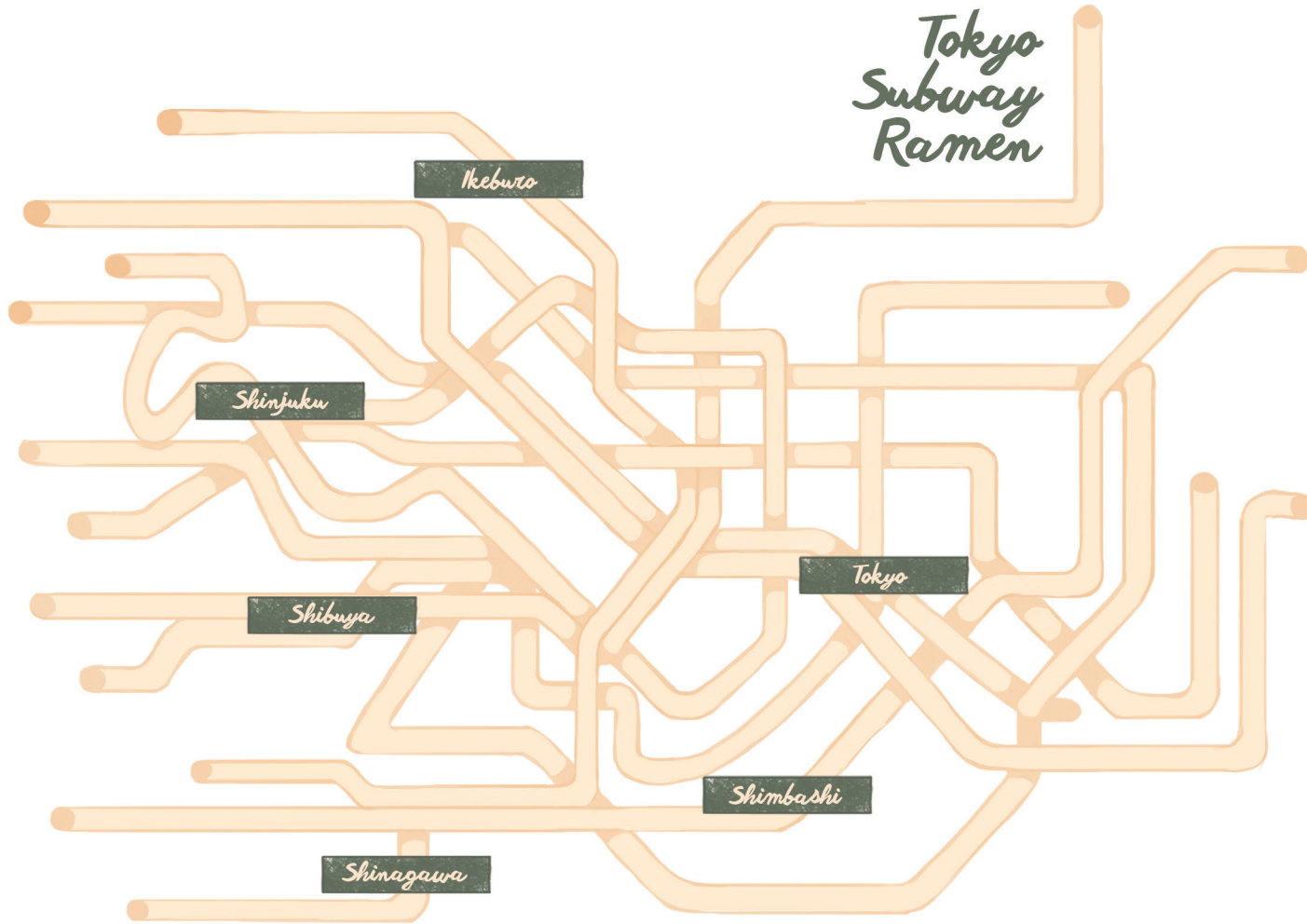
Ikeburo
Shinjuku
Shibuya
Tokyo
Shimbashi
Shinagawa

04

I found myself in San Francisco many years ago for a conference on the evolution of hachuring. Mind you this was quite early in my career, and I was travelling alone, so I made the mistake of joining some colleagues at a bar called The Elbo Room. It was an abysmal experience. If ever jazz could have a smell this would be it. It was stuffy, with undertones of stale beer and overly-medicinal gin. We didn't arrive until 11 and didn't leave until someone threw up on my shoes. These were not leather shoes: they were sneakers of the sort that have a porous exterior. I returned to my hotel room reeking of pot and vomit, without any desire to return. It was the only pair of shoes I'd brought with me. When I came across this map, I did some digging and was amused to note that, had I come just a few years earlier, I might have been spared this heinous experience as it was previously a place called Amelia's, which at least sounds more respectable. This map is unusual in that it represents time in addition to space and has the interesting conceit of representing a street like the rings of a tree. It's also unusual in that it does not claim complete objectivity, given that the point at which businesses become gentrified is highly subjective.

The Evolution of Valencia Street by Jill Kim

THE EVOLUTION OF VALENCIA STREET

If you walk down San Francisco's Valencia Street today, in between the painfully-hip vintage clothing stores, you'll find two chocolatiers, a couple of juice peddlers and innumerable "organic" stores. It hasn't always been that way. Valencia Street is part of San Francisco's historically Hispanic Mission District. Many say gentrification first took hold here when Valencia Street got bike lanes and the police station was moved back in the early 2000s. This map shows how the neighborhood has changed since 1975.

residence
automotive/appliance
other/private
grocer/market
restaurant

24th | 16th
'15
'10
'05
'00
'95
'90
'85
'80
'75

23rd
17th
22nd
18th
21st
19th
20th
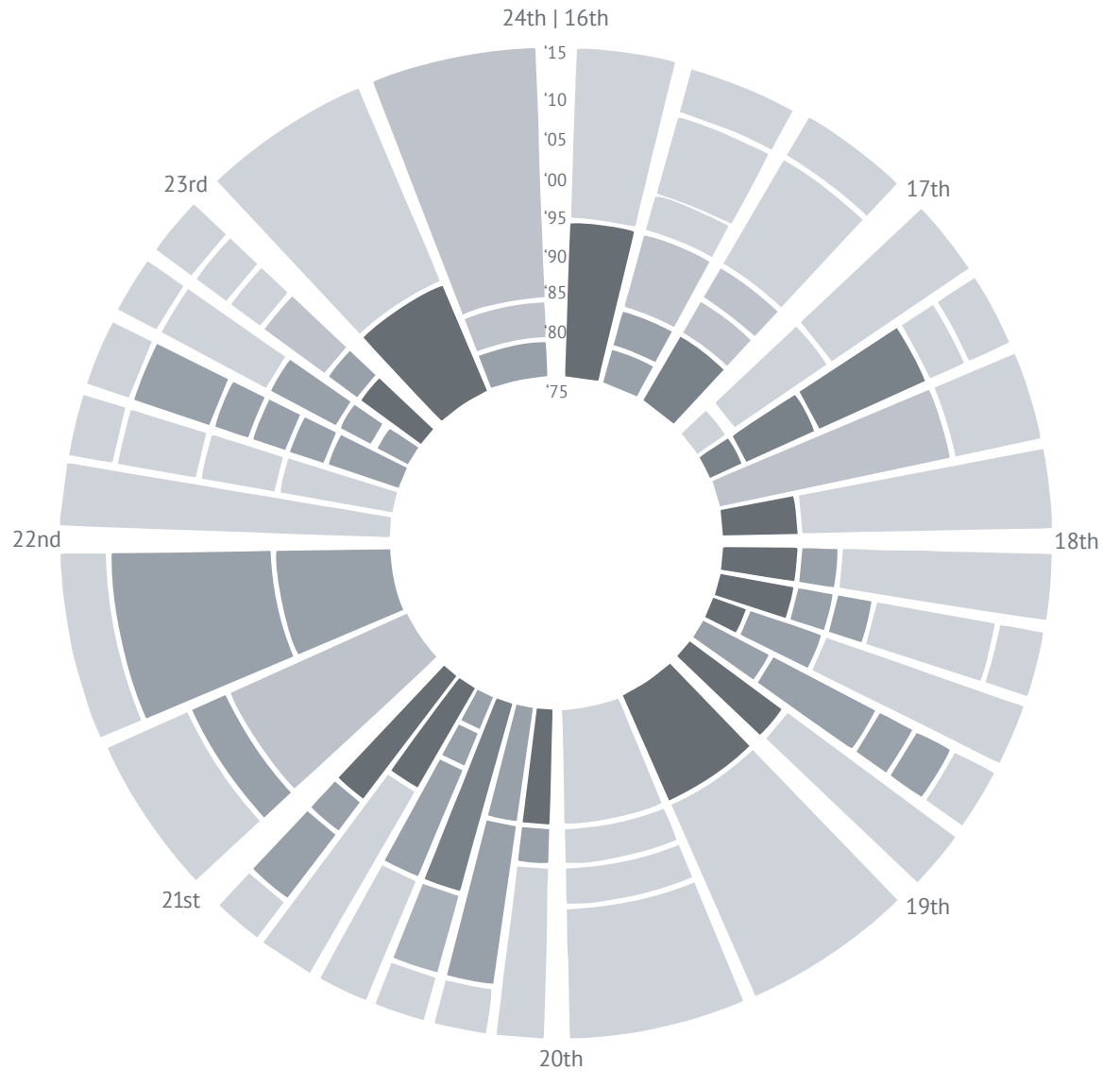
05

This map is more like a blueprint than a traditional map. I've chosen to include it, as I appreciate the level of detail used. I think generally maps could benefit from being more like blueprints. The high stakes associated with a blueprint ensure they must be precise and incredibly functional. Imagine how much more accurate maps would be if any misstep would result in a million-dollar building collapsing. How much more careful we might be in general if we treated every action we took as if it mattered.

This map is admittedly frustrating as the overlapping layers obscure some information. Beyond the design though, I was drawn to this map because I appreciate the challenges of sharing a small kitchen. Even the most spacious of kitchens can feel crowded with too many cooks. While completing my doctorate I lived with a man who consumed nothing but Hot Pockets and Otter Pops and in perpetuity left a film of grease in the microwave. Now, I am fortunate to live alone, but I'm always surprised by the number of people who aren't familiar with even basic fridge etiquette. Obvious things — like the milk should never be stored in the door or that shelves need to be cleaned weekly. Some people will even insist on keeping yogurt starter (basically a jar of living bacteria) in your fridge when you haven't really moved in together yet.

My House at Dinnertime by Kara Clifford

My House at Dinnertime

03

02

01
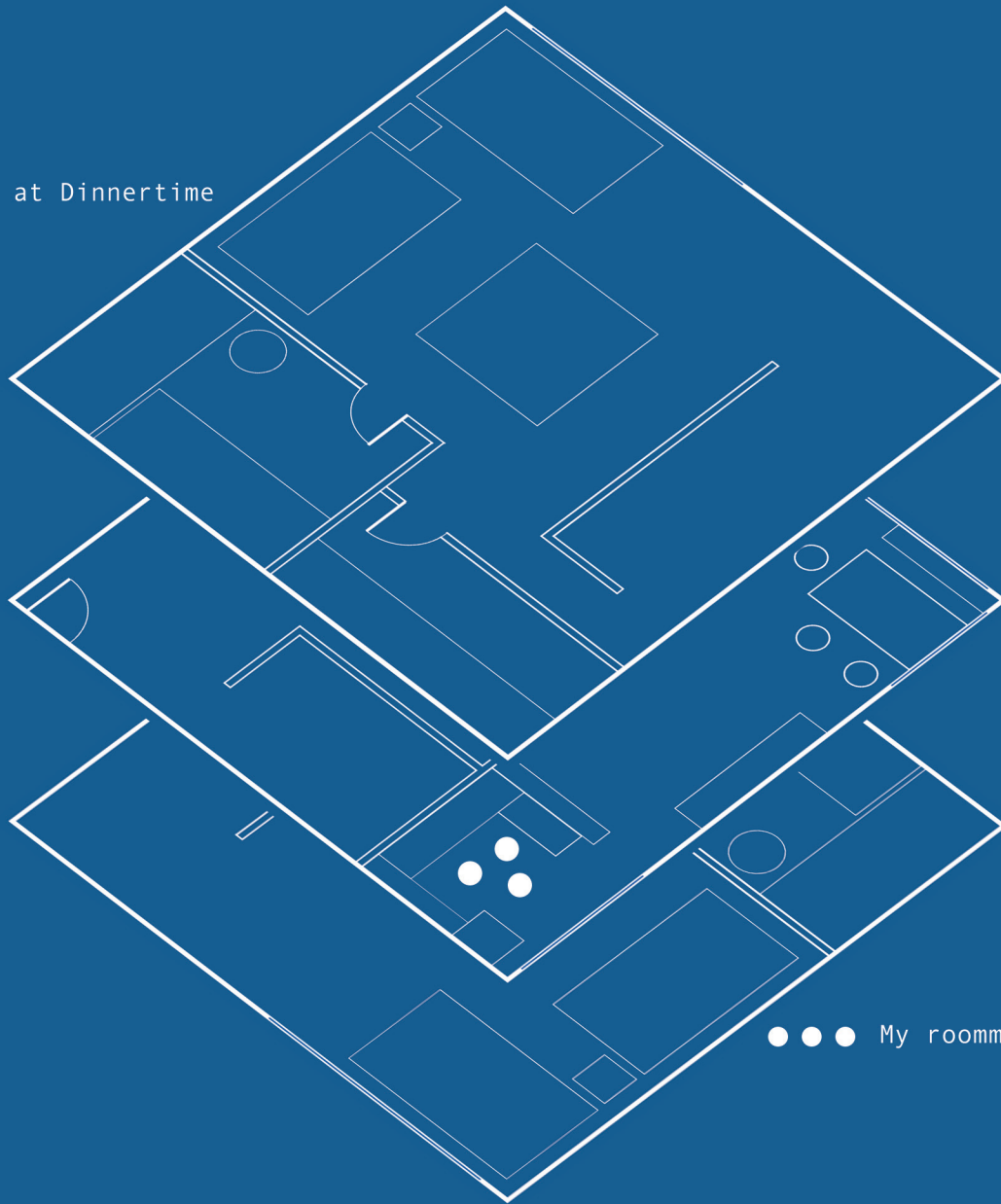
●●● My roommates and me

06

Perhaps more so in New York than anywhere else in the world, when it comes to fine dining, attention to detail is paramount. It is the mapmaking of the culinary world. The process must be approached with a clear vision and steady hands. After my father died, I visited New York briefly with a friend and had the pleasure of dining at Daniel. I still remember every course, the *foie gras* followed by the *escargot* with *beurre blanc* and the endive salad. I was beyond embarrassed that my dining companion was a vegetarian and sat there patiently dissecting the meal, but even her share of *lardons* didn't go to waste as we brought them back to my father's Labrador who went absolutely mad for them. You can imagine my delight so many years later, Charlie the Labrador still at my side, at finding this map, which has some information about New York City's critics, but first and foremost has information about the kinds of fine dining establishments New York has to offer.

This map is structurally interesting as it again attempts to incorporate temporal elements in addition to more traditional spatial components. I doubt I'll have occasion to return to New York, as these small moments of order are too far and few between, given the large moments of chaos — of drug deals and jazz clubs and reckless youths — but in some ways I find it that much more impressive that the authors were able to find and organize restraint in this city of excess.

MICHELIN

1 A very good restaurant in its category.
2 Excellent cooking, worth a detour.
3 Exceptional cuisine, worth a special journey.
In 1900, with fewer than 3000 cars on the road in France, Michelin tires put out a guide to denote restaurants worth a journey. Many years later, the first US city they'd acknowledge would be New York. **Le Bernadin, Jean-Georges, and Per Se** are the only restaurants to have held onto 3 stars since then. Some have accused Michelin of favoring French establishments but even that trend has been changing.

ZAGAT

3 scores out of 30. Service, Food, and Decor.
0-9 poor to fair **10-15** fair to good **16-19** good to very good **20-25** very good to excellent **26-30** extraordinary to perfection
Before there was Yelp, there was Zagat, the survey-based voice of the people in restaurant reviewing. Zagat has generally upheld the status quo with top marks going to restaurants like **Per Se** and **Bouley**. However, they included a wider range of restaurants long before *The New York Times*. In 2011, Zagat was acquired by Google and they changed the rating system to be three 5 star scores available through Google maps.

YELP

1 Eek! Me thinks not. **2** Meh. I've experienced better.
3 A-Ok. **4** Yay! I'm a fan. **5** Woohoo! As good as it gets!
Yelp is an online reviewing site that took off in 2005 because it allowed users to leave unsolicited "real" reviews. Unlike its predecessors where inclusion was endorsement, all restaurants were reviewed no matter how small or sub-par. Yelp is interesting because users have varied standards depending on their expectations. None of the restaurants included on this map have higher than a 4.5. Many that take top marks are comparatively inexpensive.

THE NEW YORK TIMES

0 Poor **1** Good **2** Very Good **3** Excellent **4** Extraordinary
With the internet they've introduced a separate system for users to review restaurants:
1 Poor **2** Satisfactory **3** Good **4** Very Good **5** Excellent
Notice that only a critic can label a restaurant as extraordinary. More on their critics in a minute.

UNDER REVIEW

The stars don't always align.

The New York restaurant scene is one of the most influential in the world. Since restaurant reviews first took hold here, the world has been watching. But while reviews have always shaped the restaurant scene, the restaurant scene has also shaped its critics.

CRAIG CLAIBORNE | 1957 — 1972

The first *New York Times* food critic, Craig Claiborne made reviewing what it is today. Before him, reviews were thought of as something for the advertising department. Long after his tenure, a *New York Times* review could make or break a restaurant. While he was hugely influential, the star system came later. He mostly chose french restaurants like **Le Cirque**, which is one of the few that has been open since his tenure.

BRYAN MILLER | 1984 — 1993

Bryan Miller upheld the tradition of the critics who preceded him, including Craig Claiborne, by favoring expensive, usually French, establishments. He was the first critic to give **Le Bernadin** 4 stars, which has maintained its rating ever since. He also gave **Le Cirque** 4 stars, whose path has been more volatile. He turned to **Craig Claiborne** for advice when he first took on the post.

RUTH REICHL | 1993 — 1999

Ruth Reichl was the first *New York Times* critic to break the status quo. There was outrage, particularly from Bryan Miller, when she awarded the noodle shop **Honmura An** 3 stars and, more scandalously still, she took one of **Le Cirque**'s stars. Ruth Reichl was particularly known for dining in disguise, attempting to duplicate the average diner's experience. She still visited traditional establishments, like **Daniel**, but made an effort to visit less traditional ones as well.

FRANK BRUNI | 1999 — 2009

Frank Bruni was the first *New York Times* critic to compete with internet-based rating systems. With these new systems came questions about how much the *Times'* opinion mattered. Some have accused the *Times* of writing bad reviews because they're entertaining. Bruni found himself reviewing establishments that **Craig Claiborne** never would have considered like **Momofuku Ko**, a restaurant utterly lacking in atmosphere that still received 3 stars.

❀❀ **DANIEL**

★★★★
★★★★
4.8 | 4.5

❀❀❀ **PER SE**

★★★★
4.7 | 4.5

❀❀❀ **LE BERNADIN**

★★★★★
★★★★★
★★★★
4.8 | 4.5

❀❀❀ **JEAN-GEORGES**

★★★★
★★★★
4.7 | 4.3

Picture credit: Anthony Quintano

LE CIRQUE

★★★★
★★★★
★★★

4.4 | 3.4

THE FOUR SEASONS

★★★
★★★★
★★

4.7 | 4.0

HONMURA AN

★★★

4.0 | 4.5

MOMOFUKU KO ✿✿

4.5 | 4.6

★★★

KEY MICHELIN STARS

MILLER ★★★★★

REICHL ★★★★★

BRUNI ★★★★★

ZAGAT RATING | YELP RATING

07

The town I grew up in had precisely one pizza place. It was one of those franchises where a different family owns each, but the dough and marketing materials are all sent down from corporate. It was a buffet style restaurant with novelties like macaroni and cheese pizza and chicken alfredo pizza, as if that might make up for everything sitting under a heat lamp leaching grease. I worked there through high school and the smell permeated all of my clothing. While I could never give up meat, and I doubt I could fully give up dairy, to this day I'm tempted to give up cheese.

On our first trip to New York together, back before Dad died, I told Lauren I hated pizza, so she suggested we try a juice cleanse, so we got pizza. New Yorkers are particular about their pizza. Dad sent us to his favorite place, which did happen to be a Ray's. It was her first time meeting him, though I'd long since passed the age where that kind of thing merited ceremony. I think she might have thought I brought her because I was planning to propose. We came home with a bleak pizza that was just red sauce with a smattering of peppers. It was the kind of pizza the restaurant I worked at in high school might have served, to appease the suburban mothers' consciences, but which would have sat, ignored by the children, just getting soggier. My Dad ate two slices. I think he might have thought I was going to propose to her too.

THE ^ORIGINAL FAMOUS ^ABSOLUTE BEST RAY'S PIZZA

IN 1959 RALPH CUOMO OPENED RAY'S PIZZA. BY THE '80S THERE WERE DOZENS OF INDEPENDENT RAY'S PIZZAS, EACH CLAIMING TO BE THE ORIGINAL, OR AT LEAST THE ONE THAT MADE RAY'S FAMOUS. HERE'S THE STORY:

RAY'S PIZZA

REALLY, NOBODY IS RAY.

4

SOLD IN 1981 TO

I HAVE NEVER SAID THAT I AM RAY. THAT'S MY CLAIM TO ORIGINALITY.

IF OUR RESTAURANT WAS NAMED MICHELLE'S THE WHOLE CITY WOULD BE FULL OF MICHELLE'S PIZZA.

RAY'S FRIED CHICKEN

HE OPENED A BUNCH OF STORES.

GARY IS NOW IN THE CHOP HOUSE BUSINESS

NEW YORK RAY'S PIZZA

RAY'S REAL PIZZA

ROSOLINO MANGANO

GARY ESPOSITO

WE WERE THE FIRST PIZZA PLACE TO PUT A LAST NAME ON RAY.

5

& SOLD ONE TO THIS GUY.

6

ONCE, IN MIAMI, I WENT TO A PIZZA HUT. WELL, I DON'T LIKE TO SPEAK BADLY OF ANY OTHER PIZZERIAS, BUT I GUESS THAT'S WHAT HAPPENS WHEN A PLACE IS FRANCHISED.

MANGANO, CUOMO & ESPOSITO TEAMED UP IN THE 1990S TO SUE EVERYONE ELSE.

WORLD FAMOUS KAY'S PIZZA

RAY'S FAMOUS PIZZA

RAY BARI PIZZA

3

BUT RALPH SOLD IT TO THIS GUY.

FAMOUS RAY'S PIZZA OF SIXTH

FAMOUS RAY'S OF GREENWICH VILLAGE

JOE BARI

MARIO DI RIENZO

THEN RALPH OPENED A LOCATION HERE.

2

WORLD FAMOUS RAY'S PIZZA & PASTA

MANHATTAN

FAMOUS ORIGINAL RAY'S PIZZA

CLOSED

RAY'S PIZZA & BAGEL CAFE

THIS IS PRETTY MUCH THE ONLY CHAIN LEFT STANDING TODAY. THEY AVERAGE 2-3 STARS ON YELP.

RALPH CUOMO OPENED THIS SHOP IN 1959.

1

PRINCE STREET PIZZA

RALPH CUOMO

THIS IS THE ORIGINAL ORIGINAL RAY'S PIZZA. NO, REALLY.

RAY'S FAMOUS ORIGINAL PIZZA

ORIGINAL FAMOUS PIZZA

ACTUALLY OWNED BY A GUY NAMED RAY. FRIGGIN HIPSTERS. HAS REPORTEDLY BEEN IGNORING MANGANO'S CEASE AND DESIST LETTERS FOR YEARS.

NOT RAY'S PIZZA

RAY

BROOKLYN

08

This map represents something as it was remembered rather than as it was. The use of scale is negligible, the lines irregular, and yet, it is at once revealing of the author's personal attentions and the stories of a place. It is a map of a physical space but also a map of a memory. This map portrays shortcuts and best friends and children's legends. I particularly appreciate how clearly multiple kinds of information are conveyed and intertwined with spatial information on this map. As I examined it, I thought back on all the places I've lived and whether I'd be qualified to create such a map. I considered how each semester I'd find new routes between my classes and new corners of campus to inhabit in between them, but that seems shallow. I'm not sure I've ever lived anywhere, even as a child, that absorbed my attentions so completely. It's strange to consider what merits mapping. I have always been more focused on people. I wondered if perhaps I could ever create such a map of a person. Design it to encompass her likes and dislikes, her pockmarks and scars, her dreams and despairs. I don't think I could.

Julie's Island by Jullianna Watts

Julie's Island

to Daddy's house

THE OCEAN
Mama used to say the sky was just a reflection of the water. That if you swam long enough and strong enough, past the horizon you'd find puffy white fish the size of clouds. The mammoth of halibut, she used to say.

THE FAIRY KINGDOM
Mama taught us to find fairy rings. We'd bury our lost teeth in their centers. The following morning, among the acorn pails and mossy beds, we'd find flower crowns that made our hair smell like wild anise and dew.

THE SOMETIMES BRIDGE
Once, when Mama came to pick us up, she and Daddy had a long talk. By the time we headed back, the bridge's jaws were open, swallowing shrimp boats. We had to wait a long time before someone was able to calm it down. Mama cried into the steering wheel, and we sucked our grape popsicle sticks long after the popsicles were gone.

THE MAINLAND

town hall

Mama's pie shop

our bungalow

the shortcut

post office / grocer / library

Maggie's house

THE LIGHTHOUSE
Our town was built on a shipwreck. A long, long time ago in the middle of the night, a boatful of young men training to be in the Navy crashed into the island. A lot of people died, so they put up a lighthouse. For a long time, that was the whole town. Just one lighthouse keeper and a couple of lonely ghosts.

the port

Secret patch of wild boysenberries

school

MS. HANSEN'S CABIN
Ms. Hansen was 200 years old. The kids said she was a witch who ate kids, but Mama knew better. She said she was a sad old lady whose body had mistaken her heart for a clock that had forgotten how to tock. A withered, wind-up woman.

the best spot to dig for clams

PAIGE'S POINT
Grownups told us the cliffs were dangerous. Whispered about how Ms. Hansen's twin, Paige, had slipped on the rocks a while back. The spray that crashed into the cliffs tasted like tears. Mama always said Paige dove.

09

This map juxtaposes the traditional characteristics of a map with a frozen dinner. This map has been executed not from above but rather in a three-quarter perspective. This has the disadvantage of obscuring some of the information in the back. The colors are blended and the scale of some of the objects (for instance, the cabin in relation to the mountain) is distorted.

However, I chose this map not for its form, but for its insight into the human psyche. I think this map is incredibly relatable. I often find myself facing the distraction/distraction/distraction/despair conundrum. In fact, compiling this book itself is a kind of distraction for me, as I've never watched much television. Lauren's new boyfriend, Paul, watches a lot of television. Lauren never used to watch television but I guess that goes along with giving up "giving up red meat" and throwing away her yogurt starter and smoking a lot of pot and being about to move to New York with him and our dog. Paul is going to be an adjunct professor at NYU even though he says he's really moving because his jazz band has taken off, which is a load of — anyway. I've been eating a lot of frozen dinners lately and found this map insightful. At least my fridge is clean.
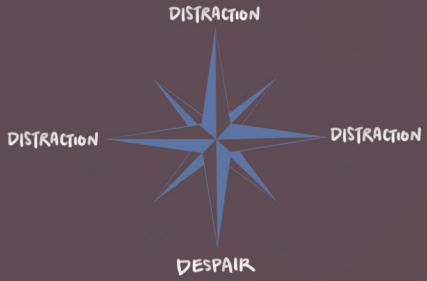
10

There are lots of parts of life we don't like to think about. We want to eat our sausages in peace without being reminded of the pieces they came from. We want to sit down to dinner in peace without being reminded of how our lives are in pieces. A slow build of minor skirmishes over how often the ceiling fan ought to be cleaned, or how often the dog ought to be walked, or how often you work late, or how often she pretends to work late and you both work to keep up the pretense of fighting over work, preferable to working through the affair and the bullying and passive aggressive skirmishes and passive aggressive battles over nothing in particular. She pretends that the shift of the calm order of your life from maturity to monotony hasn't bothered her. But you can't help but be bothered by how she's changed. By how she's grown as a person, by how you've grown apart as people. This is a map of a metaphor. It literally shows how the sausage is made without reaching for gristle or gore, instead seeking a deeper truth about how we don't like to think about things we don't like to think about. We'd rather continue along in our neat, orderly bubble ignoring the homeless man on the corner, and the news on the radio, and the last bag in our — *my* — closet that means it's really over.
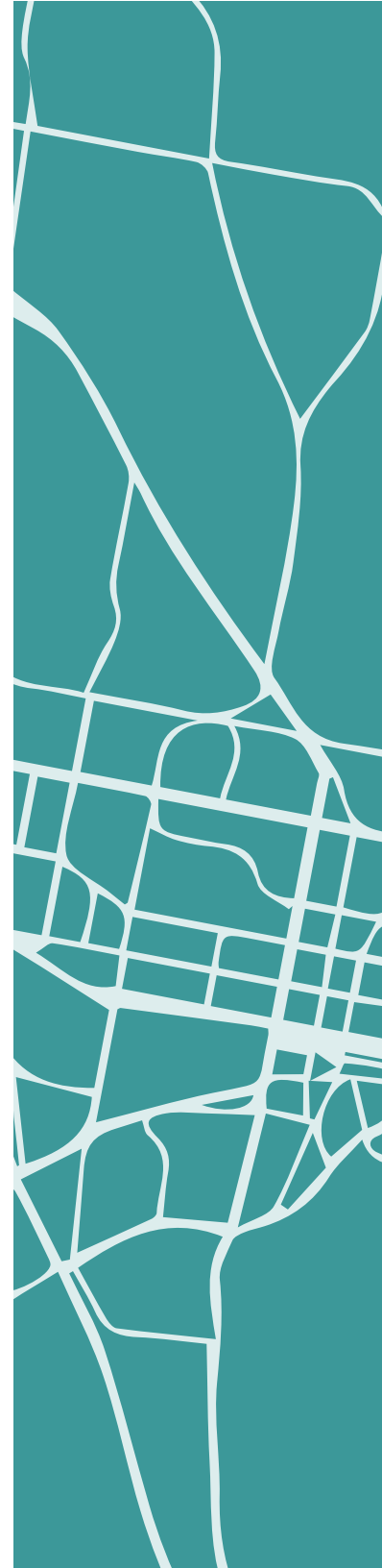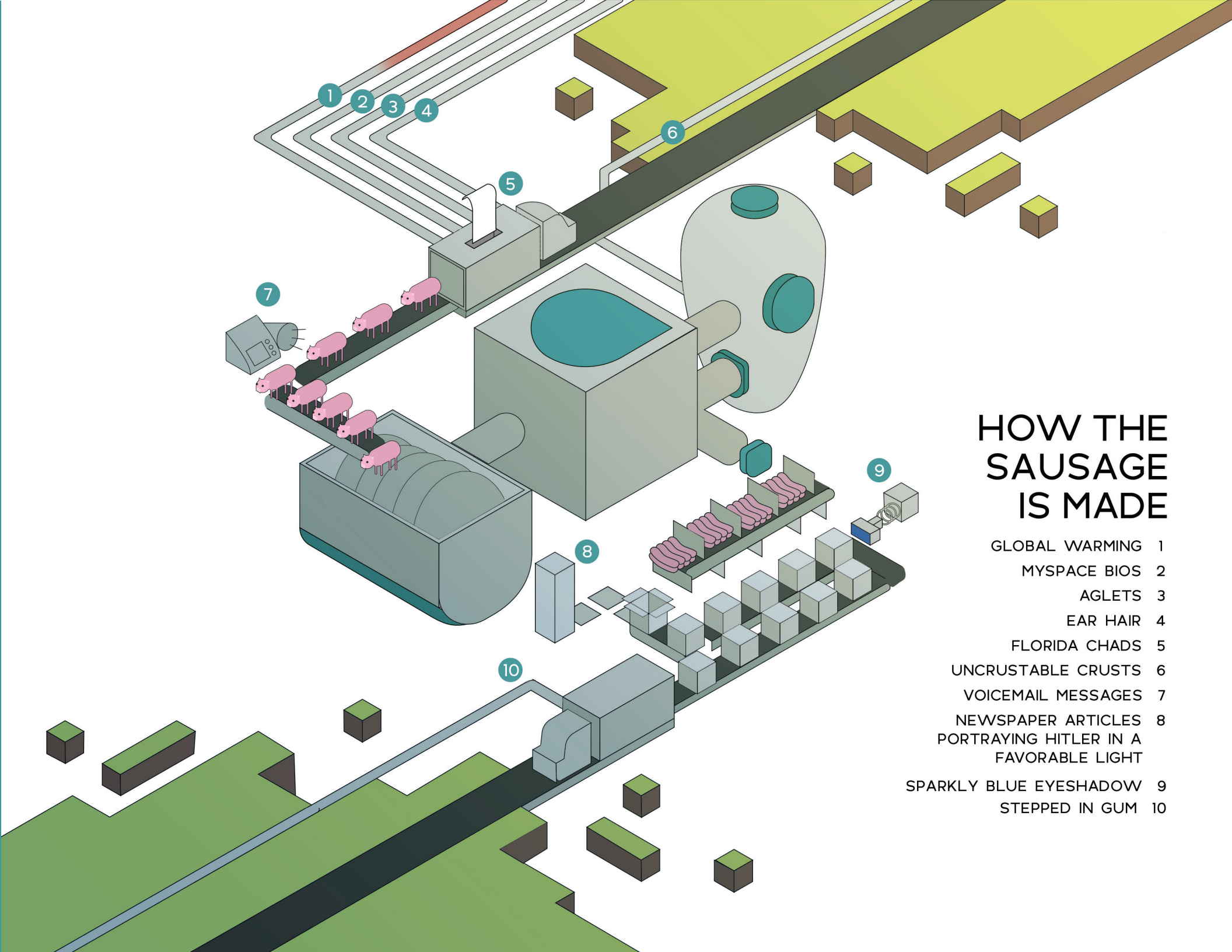
HOW THE SAUSAGE IS MADE

11

This work is someone imagining what someone from the future would think of us looking back. It's a useful device as it allows the author to comment on some of today's food trends while also showing the deeper flaw in all food trends. In the future, they might feel superior remarking on our food trends (as we do looking back on the 50s) but without acknowledging how arbitrary their own food trends are. It's like when you were a kid and you flipped your cheap binoculars around and suddenly everything looked far away even though it was still at arm's length. I wonder sometimes how that might manifest itself in relationships. Perhaps in how we project into the future, imagining far off years in an instant. Perhaps in our inclination to bend the past to our current impression, remembering only the worst of what ended badly, looking back from a good place and saying we've always known she was the one. But mostly, I wonder if relationships have microtrends of their own. If even as we take pause and notice our patterns and work to break them we create new ones, such that no matter how we think we've changed, or our partner has changed, in retrospect we will always fall short.

An American Kitchen, circa 2016 by Nathan Adams

AN
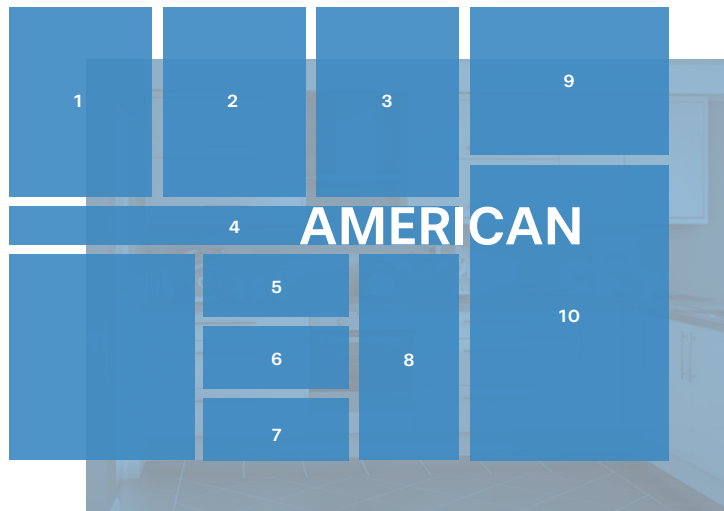
AMERICAN

KITCHEN CIRCA 2016

This exhibit hopes to convey an idea of the typical American kitchen in 2016, based on a survey of 100 homeowners at that time.

1. LEFT CUPBOARD
Big Paw Mission Fig Balsamic. Purchased at farmer's market. Used as a base for dressing and marinade.
> Ume Plum Vinegar. Multipurpose Asian condiment.
Coconut Oil. Homeowner purchased this item because they "heard it was supposed to be good for you, but we only tried it a couple weeks ago." Following use, homeowner reconsidered its benefits as coconuts are "not inherently good for you" and it "made everything taste like coconuts."

2. MIDDLE CUPBOARD
> Tiki Cup. Purchased from bar in neighboring town where predetermined group annually shared a large drink named after virgins.

3. RIGHT CUPBOARD
Jackfruit Chips. Purchased on trip to Malaysia, unconsumed.
Candied Ginger (bought in bulk). Chopped fine and added to whipped cream to top pumpkin pie.
> Matzo Meal. Added as binder for latkes.
Vanns Spices Brandied Pepper. Initially purchased on trip to New York at Zabar's, subsequently bought at specialty store, finally ordered online directly from Baltimore, used in place of regular pepper, particularly on roasts.
Vanns Spices Bourbon Pepper. Discovered when ordering brandied pepper online. Slightly inferior to brandied pepper but virtually the same.
> Cavender's. All purpose seasoning favored for preparing steak, one homeowner reported using it on eggs "in spite of my wife's disapproval."

4. COUNTER SPACE
Quarter Loaf San Luis Sourdough. Stale.
> Holiday Cliff Bars. Iced Gingerbread and Spiced Pumpkin Pie flavors. A precursor to our modern CPRM (Cricket Protein Ready Meal), "energy bars" were often used as snacks or a last minute lunch, though they contained comparatively high levels of fat and sugar.

5. TOP DRAWER
> Cheese Knife. Used for cutting cheese.
Clip. Attached to edge of pot to hold a spoon, or used to clip things.
Butter Mold.
Assorted Tupperware.

6. MIDDLE DRAWER
Stick. Used for making Mexican hot chocolate, source unknown.
Ice Cube Mold. Intended to create cubes resembling ships from Star Wars (American movie franchise [1977-2023]).
> Orange Peeler.

7. BOTTOM DRAWER
Better Than Gravy. Selected as it came from the makers of Better than Bouillon, brand "preferred by mother."
> Knox, The Original Unflavored Gelatin. One of many general purpose items, unused.
Assorted Sauce Packets. Acquired from various fast food establishments.
Freeze Dried Red Onion. Convenience measure, substituted for fresh red onion in dishes like chili.

8. BAKING CUPBOARD
Super Grain Pasta. At this time, carbohydrates were out of favor.
Pure Vanilla. During this period, the carcinogenic properties of vanilla were as yet unknown.
> Baking Soda. A successful advertising campaign convinced homeowners that baking soda could absorb odors.
Water Bottle. Labeled with child's name and phone number.
Rose's Sweetened Lime Juice. Mostly empty. Used to make lager and lime. Homeowner had heard this beverage was "particularly good with Corona."
Peppermint Creme Oreos. Seasonal item.

9. FREEZER
Ragu.
Ziploc Container of Puree. Orange, unlabeled, undated, freezer burned.
Ziploc Container of Puree. Yellow, unlabeled, undated, freezer burned.
Ziploc Container of Puree. Green, unlabeled, undated, freezer burned.

10. FRIDGE
Whipping Cream. The Winter 2016 shortage of nitrous oxide prompted many to make whipped cream from scratch.
**> Bottle of Champagne.** Half empty.
Almond Beverage. Vanilla.

12

Lauren is moving out in this passive aggressive fashion where she waits until she knows I will be out and comes to collect her things a couple bags at a time. It's all the more amusing because she is, as she always has been, sloppy in her mindset, forever forgetting things just when she thinks she has finished. More entertaining still, I noticed a pattern in the midst of her normally flighty behavior. She'd taken to always coming by on Thursday afternoons when I've typically gone to the gym. With laser-like precision she would show up fifteen minutes after I left. This from a woman who is routinely forty-five minutes late to movies. So, in turn, I shifted my schedule to be more erratic, dropping by home for lunch some days, going to the gym on Tuesday.

Anyway, since she's leaving in two weeks I finally gave it up and put together a bag with the last of her things. Most of it was scarves and trinkets but I came across a zine titled *Lost Sock* that included this delightful map. The author was actually surprised when I contacted her about including her work in a compilation of maps, but graciously agreed. Anyway, Lauren is supposed to collect it for real when she drops off Charlie this Thursday. Though she was supposed to last Thursday. At any rate she should be by soon. He is my father's dog after all. Paul has asked me to stop calling. I might just keep the rest of it.

Pairings by Aubrey Erickson
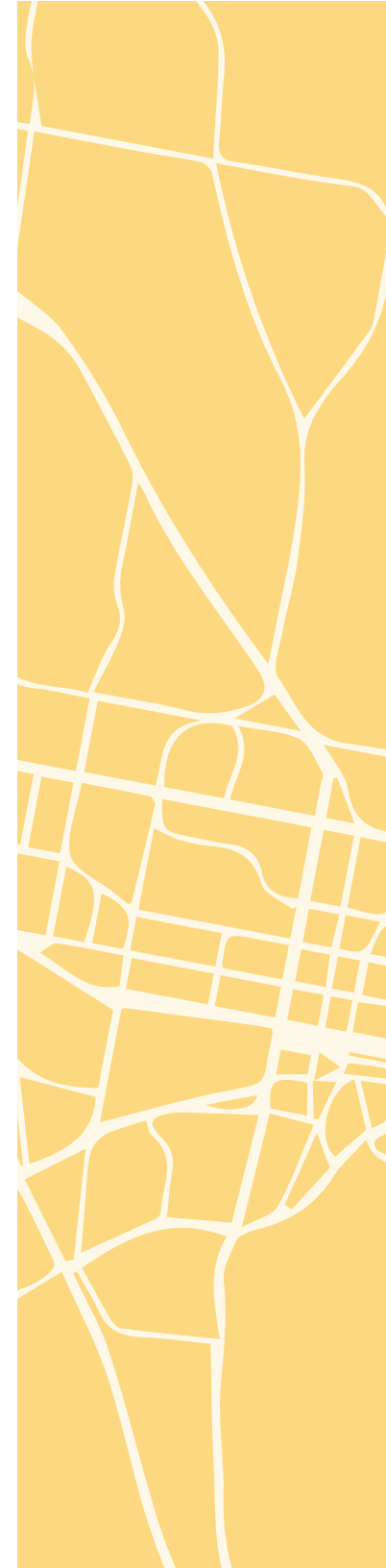
Pairings

Amy

tasted like a
shiny penny, a
wish gone sour,
a corroded
memory.
Paired with:
Maldición
2014

her me
the wine

Carmen

tasted of the
ocean, of harsh
salt, and soft
tears and
longing tides.
Paired with:
East Wind 1964

me the wine
her

Adriana

tasted of
manchego
cheese, of
nutty rind
and illicit
desire and
ticklish craving
paired with: La Dame
2002

her me
the wine

13

It takes an unusually creative mindset to recognize a piece like *How to Bake a Cake* as a map. Many of my colleagues would argue that a map has to be visual. After all, when we think of maps, we think visually. We picture a globe, or one of those atrocities you pull down over a blackboard. But even those maps feature text correlated to images: how else could we tell Slovenia from Slovakia? To this end a map is, at the very least, a correlation between text and image. But what if the text alone could conjure the image? Say, when we give directions and tell someone to turn left at the blue house, or the diner, or the Sheraton with the broken "h" where you had your first date, or maybe it was your first fight — might that be a map? Or when the subway announcer proclaims "Times Square" and you look out on the familiar platform and picture your path up the steps and around the corner to a small jazz club that smells like tobacco that might actually be pot where your boyfriend plays, might that be a kind of map?

Or when we had our last fight in the back of a French bistro that added garnish with tweezers and I exclaimed that the joy of an In-N-Out was its simplicity, that in each location even the location of the bathroom remained unchanged — wasn't that a kind of map? Or when Lauren told me I could never be open-minded enough to love her. Maybe that was a kind of map too.

After much reflection, I've broadened my conceptions and adopted a freer flowing definition. A map is simply a representation. The only thing that is not a map is the world.

Vanilla Cake

This moist vanilla cake is a simple crowd pleaser. It pairs well with a variety of frostings and fillings.

1 cup butter
2 cups white sugar
4 eggs
2 ½ cups self rising flour
1 cup milk
1 tbsp vanilla extract
3 8-inch cake tins

1. Remove pans from oven. Set aside 2 cake pans. Place rest of pans on top of stove. Preheat oven to 350 degrees F (175 degrees C).

2. Retrieve butter dish from fridge. Discover bits of jam adhered to butter have begun to mold. Open fresh stick of butter. Grab 4 eggs and quart of milk. Butter pans.

3. Microwave butter in a bowl for 10 seconds.

4. Find butter is still too hard. Microwave it for another 10 seconds.

5. Find butter is still too hard. Microwave it for another 10 seconds.

6. Find butter has completely melted. Retrieve more butter. Repeat steps 3-5.

7. Open top drawer. Remove orange peeler, turkey thermometer and wooden spoon and place them on counter before finding beaters. Retrieve hand mixer base from above the sink.

8. Use step stool to access cabinets above the fridge. Retrieve sugar. Look for self-rising flour husband was supposed to acquire the previous Wednesday.

9. Google substitutes for self-rising flour.

10. Return to cupboard above fridge to move french roast coffee beans, cornmeal, cornstarch and gluten-free cake box mix to top of fridge to confirm there is no self-rising flour.

11. Mix flour, baking powder, sugar, milk, eggs and baking powder into butter.

12. Taste batter.

13. Curse profusely.

14. Pour batter down drain. Cram gluten-free cake box mix, cornstarch, cornmeal, sugar, flour, baking powder, salt, and whole-wheat flour into cabinet above fridge. Toss wooden spoon, turkey thermometer and orange peeler, back in drawer. Place butter dish and milk back in fridge. Leave cake pans, bowl and beaters in sink. Place frying pans back in oven.

15. Take french roast coffee beans and prepare a cup.

16. Purchase birthday donuts on the walk to school.

MAPPING AND MODELING WEATHER AND CLIMATE WITH GIS ———

Edited by Lori Armstrong, Kevin Butler, Jack Settelmaier, Tiffany Vance, and Olga Wilhelmi

Esri Press, 2014

370 pages. $49.99, hardcover.

ISBN: 978-1-58948-376-7

Review by: Mark Denil

Mapping and Modeling Weather and Climate with GIS is a topical title from Esri Press. There has been a significant increase in the frequency and intimacy of interactions between the modeling and GIS worlds. Modelers are looking to integrate more sophisticated "real world" inputs, and "real world" analysts and forecasters are taking more cognizance of modeled outputs. GIS systems, already quite flexible and adaptable to the exploration and study of a wide variety of geospatial phenomena, are a logical platform for hosting this nexus, as Esri has been letting everyone know via their serious expansion of support for the netCDF data format, support for the Pandas software library for Python, and now with this Esri Press book.

One prominent feature of many modeler/GISer interactions has been a profound cognitive and linguistic disconnection between practitioners in the respective realms. Some tenets built into the assumptions of operatives on one side of the partnership may simply not enter the consciousness or calculations of those on the other, and vice-versa. For example, just because a certain place on the modeled earth can be described with latitude and longitude values does not mean that the model operates "exclusively in a lat/long coordinate space." At the same time, the lat/long coordinates of a place may change dramatically if one assumes a different size and shape for the Earth (if one assumes it is, say, a perfect sphere instead of a spheroid), so it is important to define those parameters and share them with one's partners. Currently, a conscientious participant in one of these modeler/GISer exchanges must expend a good deal of effort (and diplomacy) to discover where the subtle and not-so-subtle dissonances lie, and to try to ease the streams into confluence.

This is where *Mapping and Modeling Weather and Climate with GIS* comes in. Strategically, the book tries to situate itself between the solitudes, and to supply grounds for bridging the divides.

Thirty-six individual authors contributed, in a variety of combinations, to the twenty-three chapters in this book. More than half of the authors are connected to US federal agencies, principally the National Oceanic and Atmospheric Administration (NOAA), but there are participants from academic, commercial, and military outfits as well. Almost all seem to be of the "GIS-aware modeling community," as opposed to the reverse. Three Esri folks contribute to six chapters between them, with the most prolific being a volume editor as well.

There is a lot of stuff in this book. The chapters are grouped into logical sections, which helps tremendously in navigation. The section titles—"Representations of atmospheric phenomena", "Observations," "Models," "Integrated analyses of models and observations," "Web services," and "Tools and resources" —demonstrate the sweep of topics covered to one degree or another. Reading *Mapping and Modeling Weather and Climate with GIS* cover to cover is, I can attest, a long row to hoe; but it was likely not intended to be read that way. Each chapter is autonomous, and stands alone with neither prerequisite nor, necessarily, connection to any other chapter; this is clearly intentional.

Intentional, too, is the general approach and level of address adopted in each chapter: this book is a tool to build mutual understanding, not to further developments in either community. I came out of reading it seeing two main things: how to start to present my activities and concerns so as to be understood by members of a community with similar interests but a very different approach and heritage, and how to begin to interpret what I get back from them in return. File formats are only one small part of this equation, and although they are covered, too, it seems to me that the book's value is more, well, *anthropological*. Esri puts out a lot of these "industry" books; most seem aimed at selling GIS to the industry. This one seems aimed at bringing two juggernauts together without collision.

That said, *Mapping and Modeling Weather and Climate with GIS* is not without shortcomings and faults, and the story

of the Curate's Egg comes frequently to mind while reading it. In the story, a young curate was breakfasting with his bishop, when the superior remarked that the youngster had been given a spoiled egg. The curate, embarrassed by the fuss, continued to eat the bad egg while assuring his bishop that "parts of it are excellent." Luckily, this volume is more compartmentalized than is usual with eggs.

Blessedly few of the chapters read like *ArcUser* magazine reprints. Many of the authors, however, are clearly not experienced technical writers (as the level of writing in most "scientific" periodicals demonstrates is not uncommon in the field), so a good deal of some chapters are a good deal less clear than they might have been. For example, there seems to be a widespread misunderstanding of the concept of *paragraph*. Webster's dictionary (1944) defines it as "A distinct section or subdivision of a discourse, chapter, or writing, whether of one or many sentences, that forms a rhetorical unit as dealing with a particular point of the subject, or as comprising the words of a distinct speaker, etc." By contrast, in some of this book's chapters, paragraphs are employed simply as random breaks in the text.

It is worse than that, though. My review copy is filled with penciled corrections, excisions, and rearrangements of material, and not a few question marks. Sadly, some of the most potentially useful chapters, particularly Chapter 2, "Meteorological data in a geodatabase," are almost incoherent. The two authors of Chapter 2 do not so much perform a deep dive into UML and the International H2O Project (IHOP) database structure as to smack into it full-tilt boogie: the results are awkward, confusing, and downright gory.

One should also say something about the standard Esri Press book layout; in particular, the tremendously long text lines used for body text. These lines are just too long for comfortable reading. Standard good practice tells us that "… even with generous leading, a line that averages more than 75 or 80 characters is likely to be too long for continuous reading" (Bringhurst 2002, 27). Standard Esri Press text lines average about 90 characters. Moving either to a wider page fly space (and narrower text block) or to two columns (maybe a less happy solution) would make reading one of these books rather less of a slog.

So, to wrap up: *Mapping and Modeling Weather and Climate with GIS* is a good stab at filling a big need. It is not without problems, but what in this vale of tears is not? If your office works with weather and climate modelers, this book should be there too.

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AMERICAN CAPITALS: A HISTORICAL GEOGRAPHY
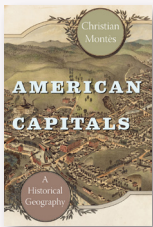
by Christian Montès

University of Chicago Press, 2014

394 pages. $19.95, softcover.

ISBN: 978-0-226-08048-2

Review by: Russell S. Kirby, University of South Florida

As a peripatetic late twentieth- and early twenty-first-century academic, born to an academic family, my early life and later career led to residence in many US states, and I have had the good fortune to have lived in both large and smaller cities, some of which were state capitals. My professional and personal travels have led to visits to many other state capitals as well. Still, it never occurred to me that the subject of state capitals might be worthy of a book-length historical geographic treatment.

This monograph, published as a University of Chicago Research Paper, shows that it indeed might. In his study, Christian Montès thoroughly explores the topic of the capitals of the states (and territories) of the United States. It could perhaps be said that Montès examines his subject from every conceivable perspective: from the relative locations of capitals within states, to change in location of state capitals over time, to their very names, while also examining a wide array of other questions along the way.

Montès begins with a discussion of the various roles capitals play as administrative centers and as loci for political and judicial activity, and as "places of memory" in historical, social, and cultural contexts. Additional topics explored in turn include the geography of capital locations from colonial times to the present, an examination of the factors involved in capital choice, and comparative analyses of the demographic and economic characteristics of capital cities prior to and since 1950. He also applies a conceptual model for the location and urban-economic development of capital cities to the cities of Columbus, Des Moines, and Frankfort, and discusses the current status of selected former capitals. The book concludes with a consideration of the role of state capitals today as "symbols of American democracy."

The narrative is well supported with factual detail. I was struck by some similarities to research by the mid-twentieth-century urban and cultural geographers Chauncy Harris and Wilbur Zelinsky, each of whom conducted research using cities or places as units of analysis, creating classifications and typologies based on socio-demographic, economic, and cultural factors. Curiously, neither of these researchers are listed in this book's index. However, quantitative analysis with mathematical models, typical of both Harris and Zelinsky, does not feature prominently in the discourse provided by Montès.

Having carefully read this monograph, I can say that I learned some things about state capitals (and capitols) that I had not previously known. However, I did not come away convinced that the subject was truly worthy of this level of scholarly investigation. The explanatory model developed in the later chapters and examined through three case studies seems contrived as well as overly complex. The vignettes of each of these capital cities, on the other hand, could stand on their own, losing little of their substance in the model's absence.

American Capitals is well illustrated, with photographs, tables, occasional diagrams, and a few maps. The end matter includes appendices with demographic and historical tables, a state-by-state chronology of colonial, territorial, and state capitals, and finally, notes, references, and an index.

In the final analysis, while I'm still not sure that the topic of state capitals in the US is worthy of a full-length book treatment, I am convinced that Christian Montès has examined them from almost every conceivable social scientific perspective, save perhaps scientific qualitative approaches with focus groups, participant observation research, or multivariable modeling. While his writing is informative and in some sections quite engaging, the reader sometimes gets lost in a mire of technical details. Given that no one had ever attempted to write a book like this previously, *American Capitals* is likely to be the go-to source for details about the geography of the capitals of US states for many years to come.

This monograph is a recent addition to one of the most venerable scholarly monograph series in North American academic geography. I was pleased to see this tradition from the University of Chicago continue, albeit with a lapse of eight years since the previous volume, and hope that more works are in the pipeline.

MAKING SPATIAL DECISIONS USING GIS AND LIDAR: A WORKBOOK
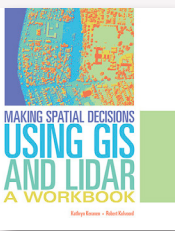
by Kathryn Keranen and Robert Kolvoord

Esri Press, 2016

216 pages. $79.99, softcover.

ISBN: 978-1-58948-429-0

Review by: Greg March

Making Spatial Decisions Using GIS and Lidar: A Workbook, is the third book in the Making Spatial Decisions series. This tutorial is geared towards users who have basic GIS skills and want to learn how to integrate and analyze Light Detection and Ranging (lidar) data as part of a GIS project to solve problems and create high resolution maps. Below is the four-step workflow described in the book:

1. Define the problem or scenario.

2. Identify the deliverables needed to support decisions.

3. Document, set environments, and examine the data.

4. Perform analysis starting with a basemap.

The table of contents includes ten modules, each with a unique scenario. Each module includes three projects. The first project provides the user with step-by-step instructions to help solve the main issue posed in the scenario. The second involves a similar challenge, but without step-by-step instructions: the user should rely on what they have learned in the first project to help solve the main problem in the second. The third project includes an "on your own" section with different challenges to choose from.

MODULES 1–5

The first five modules involve the situation of a fictional company asked to complete work for the cities of Baltimore, MD (Project 1) and San Francisco, CA (Project 2). Projects 1 and 2 each come with four recommended deliverables and a set of step-by-step instructions. What's nice about Project 1 is that it also includes a set of computer screen shots to help the user follow along. Project 2 does not include screenshots, in order to make things a bit more challenging. Project 3 provides a nice list of topics, from which the user can choose their own project based on their interest. These topics include forest characterization / canopy height and density, flood modeling, finding faults, geomorphic mapping, stream slope, archeology field campaigns, mining / calculation of ore volumes, and wind farm optimization.

Module 1: Basic Lidar Techniques

In this first scenario, your GIS company is tasked to check the quality of some LAS (lidar) data, conduct an analysis, edit the lidar data, and then produce both 2D and 3D surface and profile maps.

Module 2: 2D and 3D Models

Using lidar data in a GIS, your GIS company has been tasked to build raster and terrain models of the cities of Baltimore and San Francisco.

Module 3: Volumetric Analysis and Shadow Maps

The two cities have limited above-ground parking and need to explore possibilities for underground parking. Your GIS company has been tasked to determine how much land would need to be excavated where new buildings are under development. The cities also need a shadow map to guide decisions on where eating areas with benches will be constructed.

Module 4: Visibility Analysis and Comparison

Again, the two cities want to provide their residents with continuous cell phone coverage and have employed a new telecommunications company to produce a visibility analysis that includes generating a viewshed using digital surface models (DSMs) with the use of lidar data. Where problematic coverage areas occur, line-of-sight analysis is performed.

Module 5: Surging Seas

Baltimore and San Francisco want your GIS company to create new flood insurance rate maps (FIRMs) for the Federal Emergency Management Agency (FEMA) to be accessible via ArcGIS Online so that citizens can type in their address and access accurate information for their area. These new FIRMs should be constructed using the following hurricane inundation zones: 5 feet above normal, 8 feet above normal, 12 feet above normal, and 18+ feet above normal.

Modules 1–5 all use the same data so there is only one data folder for them all, plus one results folder for each project.

MODULES 6 AND 7

These modules involve solving a set of campus-based problems centered around an alliance between James Madison University and the University of San Francisco. Both modules use the same data so there is one folder for data and one for results.

Module 6: Corrected 3D Campus Modeling

Before each campus can determine where to add solar panels on rooftops, university researchers will use features from the lidar data to reclassify (correct) lidar feature classification codes where errors had been found. Researchers will then use ArcScene to visualize the campus (in 3D) as a surface and as set of contours.

Module 7: Location of Solar Panels

Once the new lidar feature classification codes have been set, the researchers at James Madison and San Francisco will create rooftop (heat) maps to determine where solar panels will be placed for maximum operational efficiency.

MODULES 8–10

Modules 8–10 each use different sets of data so there are separate folders for each scenario.

Module 8: Shoreline Change After Hurricane Sandy

The United States Geological Survey (USGS) has hired your GIS company to analyze changes to the New Jersey and New York shoreline after Hurricane Sandy. With the use of pre- and post-event lidar data, the USGS would like your company to produce pre- and post-event elevation maps to document elevation decline from erosion, shoreline retreat, and the deposit of soil due to wave surge.

Module 9: Forest Vegetation Height

This module involves forest vegetation height and how land managers can use lidar data to better manage forest ecosystems. Using lidar to track forest evolution, The Nature Conservancy's Virginia and Pennsylvania chapters wish to determine canopy height as a substitute for the age of the forest. This is done by subtracting the bare earth surface (DEM) from the first return surface (DSM).

Module 10: Depressional Wetland Delineation from Lidar

This last module focuses on identifying the location of depressional wetlands using lidar. The State of Florida wants to establish a wetlands center in order to perform advanced research by comparing traditional delineation methods (on-site fieldwork with a topographic map) with new methods performed off-site using lidar. The State would like a comprehensive comparative analysis of depressional wetlands that documents and compares results of the traditional methods versus the new.

EVALUATION

This workbook follows the general format of the others in the Making Spatial Decisions series, but with an improved layout, making it easier to follow than earlier ones.

In the Introduction, on page xii, there is a set of bullets that list skills the user should have (such as a basic knowledge of lidar and how it is used) prior to taking the tutorial. While there is a description of basic lidar terminology, a comprehensive glossary would have been helpful.

Downloading the instructional materials from the Esri Press "Book Resources" webpage was easy. I tested the GIS data in the scenarios using ArcGIS Desktop 10.3.1 with Windows 7 and the screenshots look the same as the ones in the book. Sometimes screenshots can look a bit different (between ArcGIS versions), which could make following the tutorial more difficult.

There are very helpful screenshots in this workbook to aid the user with completing the scenarios, but adding additional screenshots to the first few modules could better prepare the user to successfully complete all of the project scenarios within the workbook. As I followed a few of the scenarios, it wasn't always easy to get through them. Some steps didn't have enough information to guide the user, or there was information missing that could leave the user scratching their head. I have an intermediate skill level using ArcGIS, with a basic knowledge of lidar, and I had trouble understanding what was being asked at times and/or what to do next. Some examples:

- On page 5, step 3, the user is asked to enter map document properties, but there is no mention of the Default Geodatabase field. When filling out the map document properties box, the Default Geodatabase automatically maps itself (at least on my computer). This may not happen on other computers, but a sentence or two describing this field would be helpful to the user since this is an important step in the documentation process.

- Page 10, step 13 directs the user to "Set the Baltimore_tiles dataset as the input." Should the user to go back to the Geoprocessing tab, click Environment Settings, then reset the file path in Workspace? More information is needed here.

- On page 109, step 1, the instructions read: "Add the study_area feature class and make it hollow. Add the Imagery with Labels basemap." I located the study_area feature class file and made it hollow, but there is no mention of the basemap file in the workbook and I could not find a file with this name (Imagery with Labels) in ArcCatalog. While I did remember that ArcGIS Online has this web basemap, it would have been helpful if there was a note that the user can download the Imagery with Labels basemap from the ArcGIS website. Another, different, basemap is

required in step 3 on page 136, and again its sourcing from ArcGIS Online is not mentioned.

Some of the instructional steps within the scenarios require the provision of more information if users are to complete each scenario. As with most GIS tutorials, individuals who take this tutorial by themselves or as a group should expect to devote a significant amount of time to working through each scenario.

This book lends itself best to a classroom setting where students can ask questions of their instructor, or fellow students who have been through the workbook scenarios. Individuals who take this tutorial solo, and without having a basic understanding of lidar and how it functions, could have some difficulty getting through it. Taking this tutorial in a classroom setting where students are divided into small groups would be to the individuals' advantage vs. taking it on their own.

It is noted in the Acknowledgements section that the workbook was created with contributions from students and teachers from the Geospatial Semester held at James Madison University, and that high school students who participated in the Geospatial Semester helped test each module in order to provide feedback.

All-in-all, this is a useful tutorial workbook for individuals who already have a basic knowledge of lidar and possess basic GIS skills. Although some of the instructional steps for following the scenarios would benefit from being a bit more detailed, the authors did well in creating real-world scenarios that represent a variety of disciplines, and the workbook enables users with GIS experience to expand their skill set (utilizing lidar) to solve problems that face the environment. I would recommend this workbook to university faculty (from select academic disciplines) with the suggestion that they integrate the workbook as part of an Introduction to Lidar course or Remote Sensing Technology course.

CARTOGRAPHIC JAPAN: A HISTORY IN MAPS
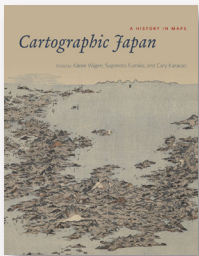
Edited by Kären Wigen, Sugimoto Fumiko, and Cary Karacas

University of Chicago Press, 2016

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$45.00, hardcover.

ISBN: 978-0-226-07305-7

Review by: Mark Denil

For the western observer, Japan is an enigmatic land. It is both like and unlike, familiar and alien, clear and clouded, straightforward and not-quite; and it is all these things all at the same time. As Lafcadio Hearn wrote over a century ago, recounting the words of a close Japanese friend: "When you find, in four or five years more, that you cannot understand the Japanese at all, then you will begin to know something about them" (Hern 1904, 5).

Cartographic Japan: *A History in Maps*, from the University of Chicago Press, is expressly intended to open a window for the non-Japanese reader on a sweeping landscape of Japanese cartographic artifacts, history, and scholarship. The fifty-two short essays by forty-eight authors, "each

focused on one or two maps related to the contributor's specialty" (3), are organized in four roughly chronological Parts and then further into thematic sub-groups. Although there are occasional references from one to another, for the most part each essay stands alone.

Japanese cartography, like much of Japanese culture and technology, developed in a cyclic manner. Foreign influences would, from time to time, wash over native practice; sometimes swamping local traditions, sometimes being absorbed and assimilated, and sometimes creating new streams of tradition alongside those already existing. In each case, that which remained and flourished would itself become Japanese. *Cartographic Japan* examines a large number of maps representing developing cartographic practices, and offers commentary on how many of these streams of infiltrations, minglings, and adaptations played out over the years.

Prevailing historical, political, and social conditions always frame the environment for cartographic practice, production, and products, and in *Cartographic Japan* the three most recent Japanese historical periods are used to divide the essays into four main Parts. These are titled:

Supporting the essays is a general Introduction, plus individual Introductions to each of the four Parts, as well as a brief Epilogue wrapping up the historical narrative with a look at a contemporary map. The standard sections: "Acknowledgments," "About the Authors," and an Index, are grouped at the end.

The first two Parts are overshadowed by Japan's long-standing feudal institutional structure, epitomized by the Tokugawa Shogunate and centered in Edo (since renamed Tokyo). The maps in these sections form the baseline for the overall survey, but this baseline is anything but static. Although often considered primarily a period of isolation, the Edo period was not one of stagnation. It was a period of practically unbroken peace: beginning about 1600, in fewer than fifty years Japan was transformed from a tangle of warring clans into a peaceful and peace-loving state. There were troubles, especially in the far north and south, and peace was only preserved by an extraordinarily vigilant military feudalism, but it was also a time of general prosperity and cultural progress. Education was improved and extended, books were printed and circulated in large numbers, and art was cultivated; it was the two and a half centuries of Tokugawa peace that laid the groundwork for the new Japan that burst upon the world with the Meiji revolution (Gowen 1927, 247).

The earliest maps discussed are amongst the oldest existing maps of Japan. The sub-section "Japan in the World" explores the Japanese view of the place of Japan in the world: a view even then already reflecting aspects of the wider world's view of both itself and of Japan. Other sections in Parts I & II present views of "Domestic Space," "Mapping the City," "Sacred Sites and Cosmic Visions," and "Travelscapes."

The transition of feudal Japan into the Imperial Japan of the Meiji Restoration and Renaissance is the unifying theme of Part III. Japan, in this period, began a wholesale importation of western technology and practice, diving into a veritable tsunami of learning, adopting, adapting, copying, and improving. In this dynamic time Japan leapt onto the world stage: exploding illusions, elbowing aside competitors, and slapping down challengers, as well as acquiring, and administering, colonies. This newly westernized Japan, however, was still Japan, and traditional threads remained present and discernible in the new-form tapestry.

The maps in Part III begin with early Japanese moves into modern nautical charting, as native map makers learned to use the tools of the circling and intruding foreign powers to counter their threats to the homelands. Going forward, other modernized approaches were mastered and adapted to cadastral records and to disaster relief, while increasingly sophisticated maps were used to analyze, propose, and implement increasingly sophisticated solutions in infrastructural and urban administration and planning both at home and in the growing Empire. By the 1930s and 1940s, Japanese cartography, like other aspects of Japanese technology, was in the vanguard of the world standard, and this up-to-dateness included the production of map products targeted at the engineering of consent; at home, in the colonies, and abroad.

While the Empire came to a sticky end, Japan, and Japanese mapping, went, and continues to go, on.

> The essays in part IV offer precious perspectives on an era of rapid change. While interested readers can readily turn elsewhere for studies of party politics, social movements, or international relations, the contributors to this final part of *Cartographic Japan* have elected to revisit some of the chief themes that have preoccupied Japan's mapmakers since the Edo era: urban life, people on the move, sacred landscapes, and hazardous events. Along the way, their contributions illuminate the broad arc of postwar Japanese history, from recovery to growth to newfound vulnerabilities. (188)

Just as the Shogunate formed the background for the first two Parts of *Cartographic Japan*, the beginning of Part IV is dominated by the 1945 foreign invasion and occupation. US tactical maps, for example, illustrate the evolution of battlefield aims from interdiction of Japanese war-making capacity towards plain and simple mass firebombing, and a

post-surrender map of central Tokyo makes visible the reality of a hostile occupying army's dominating boot-print. A map setting out one of the competing legal claims for control of Mount Fuji, at issue only as a result of invader-enforced politico-religious reforms, highlights the persuasive power of a map in arguing a wholly novel position before a wholly new judicial body on a question that would never previously have arisen. Effects of the defeat and occupation trauma still echo today, long past the revival of Japanese industry brought on by the Korean War, the subsequent end of official US occupation, and the still-slowly-ongoing withdrawal of "friendly" occupation troops.

After dealing with these matters, however, the essays in Part IV move on to discuss the wealth of cartographic innovation being brought to bear on the issues of "urban life, people on the move, sacred landscapes, and hazardous events" (188) mentioned in the quotation above. These are some of the most interesting essays in the volume.

Physically, *Cartographic Japan*: *A History in Maps* is sturdy, well bound, and very much the high quality book one expects from the University of Chicago Press. Listing for $45, it is not unreasonably priced, and is a good value all around.

This is perhaps not a book one should expect to read straight through; the essays are short and succinct, but as a steady diet are perhaps a bit staccato for ideal digestion. There is, nonetheless, a tremendous wealth of information here, clearly coming from a great depth of expertise, and this reviewer has not found a single essay in the volume that was not engaging and worthwhile. The texts are aimed at non-Japanese readers, but a slightly more-than-nodding familiarity with Japanese history and culture is a great help in getting the most out of the texts. Be advised that *Cartographic Japan*: *A History in Maps* is neither a primer on Japanese mapping nor on Japanese history.

This book's greatest shortcoming is in its small illustrations. Each map discussed is shown, often with an additional detail image and many times with English annotations, but almost all of the maps are so dramatically reduced in size that they are very difficult to read. The English annotations, too, are sometimes less than sophisticated in application, but that so many interesting maps are shown so small is very disappointing. That said, there are no poor illustrations in *Cartographic Japan*: it is just that one could wish for larger ones.

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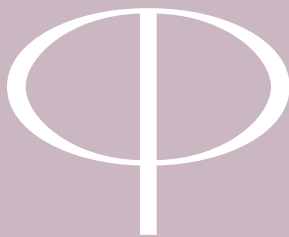
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Robinson, Arthur H., Joel L. Morrison, Phillip C. Muehrcke, A. Jon Kimerling, and Stephen C. Guptill. 1995. *Elements of Cartography, 6th Edition*. New York: John Wiley & Sons.

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Peterson, Michael. 2008. "Choropleth Google Maps." *Cartographic Perspectives* 60: 80–83. doi: **10.14714/CP60.237**.

Articles in edited volumes: Name of author(s). Year. "Title of Article." In *Title of Edited Volume*, edited by [Editor's or Editors' names, not inverted], page numbers. City of Publication: Publisher's Name.

Danzer, Gerald. 1990. "Bird's-Eye Views of Towns and Cities." In *From Sea Charts to Satellite Images: Interpreting North American History through Maps*, edited by David Buisseret, 143–163. Chicago: University of Chicago Press.

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Cartography Associates. 2009. "David Rumsey Donates 150,000 Maps to Stanford University." *David Rumsey Map Collection*. Accessed January 3, 2011. **http://www.davidrumsey.com/blog/2009/8/29/david-rumsey-donates-150-000-maps-to-stanford**.

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