ABSTRACT

The last four decades have witnessed the evolution of Vietnamese American communities and the constructs through which they are observed and analyzed. In Orange County, the initial scholarly interest in Vietnamese refugees centered on resettlement and population distribution, two inherently spatial concepts aimed at answering questions about assimilation and community impact. Over the years, scholars have increasingly shifted their attention toward economics, identity and politics to describe, explain and understand “Little Saigon.” In the wake of these changes, spatiality has been neglected as a prominent characteristic in describing a community.

The objective of this thesis is to revisit the concept of spatiality in Little Saigon, or the concentration of Vietnamese Americans living in and around Orange County. Specifically, I will address the question of whether Little Saigon can be mapped at all, and the question of space directly: Is spatiality an essential characteristic of Little Saigon? After extensive data processing and analysis, I conclude in the affirmative for both questions. Based on the resultant maps, I also conclude that the Vietnamese voter distribution trend from 2000 to 2012 implies a “thickening” of the concentrated community core more than an exodus to the periphery.
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CHAPTER 1
INTRODUCTION

In the literature about Little Saigon and Vietnamese American communities, there appears to be a lack of research on spatial characteristics of ethnic communities. Social ties, global economies, homeland politics, unique cuisine, ethnic identity and the Internet have all contributed to the broadening of the definition of community, but at the most fundamental level, any community must build upon shared physical space. I was surprised to find that my efforts to locate a mapped record of Vietnamese Americans in Orange County over the last 30 years were all in vain—the most recent map was found in a 1983 study of refugee resettlement. In fact, only cursory attention has been paid to the physical boundaries of the current community, and it appears that no attempt has been made to establish the area of Little Saigon to date. This seems logical considering the literature originates from disciplines which do not yet have a strong background in spatial characteristics and the technology to visualize such data.

My objective is to generate maps that help establish the area of Little Saigon at a high resolution (as in Figure 1), in the hope that a spatial understanding of the community will deepen our understanding of the community overall, and possibly provide a reproducible model for ethnic community mapping. This objective stemmed from my original intent to explore why previous research did not attempt to address the lack of a map of the community. I acquired voter registration data for the project, which is available to the public and includes place-of-birth and surname data at the residential level and
represents roughly half of the county’s total population. Soon into the data processing stage, I realized the complexity of data suitable for spatial visualization, as well as the knowledge of geographic information software, presents a formidable barrier to produce high resolution maps of any community, let alone one that exhibits such fluidity as Little Saigon. As these obstacles became apparent, I shifted my emphasis to the process rather than the result, my methodology effectively becoming my research. It was not until all the maps were generated and I was composing the concluding chapters of this thesis that a certain trend emerged from the data: spatiality does play an essential role in Little Saigon and has for the entire period of study, in the form of a “persistent area” with discrete boundaries that define the width and breadth of the community. This realization came as an epiphany to me! I had long since abandoned the pursuit of spatiality’s role in ethnic community development, but it still proved salient in the end.

Background on Little Saigon

Few, if any, social scientists have attempted to use modern mapping tools to establish the area of an ethnic community at high-resolution. Classic literature on urban ecology (Park & Burgess, 1925), ethnic communities or enclaves (Gans, 1962) and the
more recent work on post-suburban regions (Kling, Olin, & Poster, 1995) and ethnoburbs (Li, 1998) cover many facets of community such as politics, economics, religion, culture, transnational ties, and ethnic identity. In other related fields, geographic information systems (GIS) are used to analyze a multitude of subjects, including population density, socio-economic distribution, and many more areas of interest to the social sciences, but research in ethnic studies rarely utilizes GIS to visualize the complex ways in which enclaves, ethnoburbs and individuals overlay on and interact with the larger urban landscape.

For example, the increasingly important and politically visible Vietnamese American community in Orange County, often referred to as “Little Saigon,” has not been analyzed using GIS or mapping techniques for nearly 30 years, since Desbarats and Holland’s (1983) study on Indochinese resettlement patterns using 1980 data. Studies of this community often focus on place making, place attachment and place identity as the main spatial characteristics of community, some with mention of proximity and architecture adding to the “sense of place” (Mazumdar, Mazumdar, Docuyanan, & McLaughlin, 2000, p. 323). Sometimes the spatial relationships of community are de-emphasized as scholars introduce post-modern identity-centric models such as the “imagined nation,” where political activism and official labels define community more than markers or boundaries (Collet & Furuya, 2010, p. 18). Despite the lack of work on the subject of space, the principles of spatial distribution, which received ample attention during the resettlement period, are no less important today. The very fact that identity and attachment exist and perpetuate in ethnic communities presupposes the establishment and
maintenance of a dense population core—the “community core”—over which organizations, businesses and politics can unite or compete.

What is Little Saigon?

There is no definitive answer to the question “What is Little Saigon?”, though the literature offers many. The 1988 version of Little Saigon, as stated on the Westminster Chamber of Commerce website, refers to the area “bordered by Westminster Boulevard, Bolsa Avenue, Magnolia Street, and Euclid Street” (A brief history of Little Saigon), which clearly delineates an economic district. Since then, it appears that there has been no scholarly attempt to demarcate the community in this manner.

Literature and news articles throughout the 1990’s concentrate on the business district along Bolsa Avenue, as in “Untold Story: Little Saigon” (1992), McLaughlin and Jesilow (1998), and Tran (1998). In 2000, Mazumdar et al. describe Little Saigon as merely an “ethnic enclave in Westminster, California” (p. 319). Danico’s 2004 article extends the community to Garden Grove, Santa Ana, Huntington Beach and Fountain Valley (p. 22). Võ (2008) elevates Little Saigon to the “capital of Vietnamese America” and states that it “officially encompasses three cities: Westminster, Garden Grove, and Santa Ana” (p. 85). Collet and Furuya (2010) dispose of geography altogether in favor of the “global brand” (p. 1) and “imagined political community” (p. 2) that Little Saigon has apparently become.

Despite the lack of consensus among descriptions, the last four decades of literature do agree on one thing, even unintentionally: the borders of Little Saigon continue to expand. From a few Vietnamese shops in the late 1970’s, to a discretely delineated district in the 1980’s, to an amorphous stretch of businesses in the 1990’s, to
encompassing whole cities in the 2000’s, to a global phenomenon in the current decade—it is clear that regardless of the actual footprint of Little Saigon, the idea of the community has outgrown its geography.

Representations of Orange County’s Little Saigon

The literature on Little Saigon, and ethnic communities generally, is clear in one respect—there are multiple angles from which a community can be observed, measured, analyzed and described. These angles present variations in the ideological construct for the research, the actual data used and inevitably the conclusions reached. This variation in definition creates a sense of ambiguity around the spatial characteristics and physical nature of “community” which is reflected throughout the body of work on Little Saigon. Though a small number of social scientists reject this ambiguity (see Danico’s (2004) argument against “fuzzy” and “arbitrary” ethnoburb boundaries), the majority embrace it in their work.

The four common representations of ethnic community mentioned in the literature on Little Saigon can be summarized as political, economic, cultural and perceived. A look at each of these is beneficial.

Political

The Vietnamese diaspora is known for its staunch anti-Communist politics, internally and within mainstream government. This reflects the history of foreign domination of Vietnam and the conditions under which many where forced to leave their home country (Danico, 2004, p. 25), but it has also evolved into a clarion call for unity and cultural retention within the community. This once-refugee population in Southern California now boasts representatives at all levels of local government and enjoys
increasing political clout. Recently, this wave of political growth lost momentum as internal disputes became increasingly heated and apparent, but some still feel that Little Saigon has “evolved beyond” a mere “location of significance” or “ethnic economy” into a political machine that knows no boundaries (Collet & Furuya, 2010, p. 1).

**Economic**

Ethnic enclaves are inextricably connected to the economic influences—both external and internal—they affect on the surrounding area. Mazumdar et al’s (2000) study on place attachment mentions this common representation of ethnic communities, that “the primary purpose for their emergence is economic enterprise” (p. 319; see also Portes & Manning, 1986). Economic markers are the most readily visible and appear very early in the development of an enclave, which may account for such a long-standing attitude towards immigrant communities. This is especially true in Little Saigon, where the number of businesses grew from three in 1977 to 400 in a matter of 5 years (Desbarats & Holland, 1983, p. 32). A section of Bolsa Avenue, anecdotally referred to as the “Bolsa Corridor,” displays a heavy concentration of ethnic businesses, with a large portion of signs and store fronts in Vietnamese and Chinese. The area of this phenomenon is consistently given different physical descriptions, most commonly referred to as a “stretch” of Bolsa extending for a specific number of miles (see “A brief history of Little Saigon”; Day & Holley, 1984; Tran, 1998; “Untold Story: Little Saigon,” 1992; Welch, 2008).

**Cultural**

If not the most visible then the most flamboyant sign of Little Saigon is its cultural performances. Expressions of Vietnamese tradition—both internal and public—
have appeared in every stage of the community, including newsletters and publications among student groups in the 1950–1960 era (Pham, 2003, p. 142) and the quintessential Tết Festival taking place as early as 1978 (Nguyen, 2009, p. 117). Among the multitude of community events, festivals, parades and demonstrations that exhibit and maintain Vietnamese American culture, one of the most spatially apparent is the commemoration of the fall of Saigon, held annually on April 30th. This politically-significant event also serves as a vehicle of cultural reinforcement with the traditional dress, musical performances and a flood of yellow flags symbolizing the former Republic of Vietnam. These flags, which normally appear abundantly in Vietnamese American shops and homes alike, hang freely from light posts along streets located in or near Little Saigon. Events like this one help solidify the presence of Vietnamese Americans in Little Saigon and even establish the spatial reach of the community to a certain degree.

**Perceived**

The perceived community emerges from the three aforementioned phenomena—political, economic and cultural community—while it transcends any definition of physical space. It is supported by symbolic architecture and the ubiquitous South Vietnamese flag (Danico, 2004; Mazumdar et al., 2000) and is based on the belief that one lives within “Little Saigon,” whatever that is. Nguyen (2009) gives a historical description of “imagined community” and the role of “collective memory” in establishing and maintaining a sense of nationalism among people who may or may not share a common locale (p. 3). Collet and Furuya (2010) use the term “imagined nation” to describe the elusive nature of the place that exists “largely in the mind” (p. 18). The extent and scale of this perceived community is often exaggerated in mainstream media,
which further instills a sense of nationalism in its constituents. Many journalists make statements such as “this is what Saigon might have looked like if America had won the war” (Mydans, 2002) and “one can drive for a dozen blocks along Bolsa and Westminster Avenues and not see a single storefront in English” (Broder, 2004); one author even claimed that there is “a city in Orange County, California, known simply as “Little Saigon” (Do, 1999, p. 117). These perceptions, both exogenous and endogenous, bolster a sense of community and identity that surpasses the physical footprint of the population.

**Project Plan**

A mapping project of any scale requires a project plan—indeed, this is the first principle of a geographic information systems (GIS) project. In basic form, the GIS project plan consists of defining the objective, acquiring software, determining the type and source of data, time allotment for data preparation and processing, and determining the format and audience for the final maps.

Though the need for a project plan seems obvious, a researcher may be tempted to create a cursory plan in order to jump immediately into the mapping portion of the project, but this poses major problems. One such problem is the loss of time due to repetitious steps that could have been avoided by proper planning. Another, more pernicious, problem is that of inaccuracies perpetuating in the data without the knowledge of the researcher, and eventually being integrated into the finished maps. One of the dangers of mapping is the ease with which a beautiful-looking map can be generated based on entirely erroneous data—the recovery process at this point is lengthy and arduous, if it’s possible at all. A thorough project plan, on the other hand, enables the
researcher to work throughout the project while keeping the end in mind, allowing the researcher to focus on the data and analysis rather than the process and procedure.

My initial intention in pursuing this project was largely theoretical—I hoped to reestablish spatiality as the reigning factor in ethnic community development and wellbeing. My aim quickly shifted to the process, however, as I began work on the project plan. It occurred to me that the process itself may be daunting or completely unknown to the authors who are convinced that spatial concepts such as geographic boundaries and physical proximity have lost value in the conversation on Little Saigon. My goal for the project thereafter, alongside my interest in spatiality as an essential factor in ethnic community, was to see if the community could, in fact, be mapped and to produce a guide of how it can be done.

An outline of the project plan used in this thesis is below. The majority of this thesis will cover the data processing stages rather than act as a GIS tutorial.

- Define “community”
- Define criteria for “Vietnamese-ness”
- Determine data source and acquire data
- Review, verify and standardize data
- Import data into GIS software
- Geocode data
- Aggregate geocoded data at census block level (spatial join)
- Perform analysis
- Generate maps
CHAPTER 2

LITERATURE REVIEW

Mazumdar et al. (2000) states that Little Saigon is an “ethnic enclave in Westminster, California” (p. 19). This definitive statement has since been contested in the literature. This project, which includes data from the year 2000 in the study range, also throws that definition into question. Can the community be confined to one city? To a handful of cities? Can it be geographically bounded at all? This is the context for the following discussion on ethnic enclaves and Little Saigon.

Definition of Ethnic Enclave

Mazumdar et al. (2000) borrow Abrahamson’s definition of an “enclave,” which consists of “a concentration of residents who share a distinctive status that is important to their identity”, “specialized stores and institutions that provide local support for the residents’ distinctive lifestyle” and “a strong tie between the lifestyle and the geographic spaces the residents occupy” (330, see Abrahamson, p. 13). It is interesting that this definition—that an enclave is fundamentally geographic—is prevalent but there has been no attempt in recent decades to define those geographic boundaries. Mazumdar focuses on the influence of physical environment and public ritual to reinforce the sense of place and foster community identity for the Vietnamese Americans of Orange County.

Little Saigon proves difficult to define as an ethnic enclave—it is labeled differently throughout the literature. In an attempt to consider the definitions of the community in academia, the development of Little Saigon from before 1975 through the
1990s will be provided below, followed by a discussion on the issue of Little Saigon as an enclave.

**Brief History of Vietnamese Americans and Little Saigon**

**Vietnamese in America, Pre-1975**

Vietnamese nationals have lived in America since World War II, largely as students and professionals. As Pham states in 2003, these first Vietnamese Americans certainly did not fit the common conception of a “refugee ethnic group adapting to their uprooted experience” (p. 149). During this period, the United States was more open to students and professionals from Asia as it was perceived as an opportunity to train them to fight communism when they returned home. It was in this climate that Vietnamese student organizations started emerging to support and promote Vietnamese culture and tradition for both the Vietnamese nationals and the mainstream (Pham, 2003, p. 139).

In 1950, the first and largest network of Vietnamese Americans before 1975 was established by Father Emmanuel Jacques, who had been working with universities to provide scholarships for Vietnamese students to study in America since the late 1940s. This organization—the Vietnamese Catholic Student Association—later began publishing “Chuông Việt” in 1957 with articles and updates on homeland politics as well as Vietnamese in America. This bilingual publication served as a social network and forum to express their identity, even in the absence of a physical community (Pham, 2003, p. 140–141).

By 1960, the nationwide count of Vietnamese in America hovered around 3,000. During this time, other publications came into being as well, “Giao Dan” being the most prominent. Articles, poetry, stories and updates printed in Giao Dan helped build a sense
of community which started in New England and eventually reached national circulation, with the specific aims of helping students return to the homeland and rebuild the country. Many of the authors promoted a “national spirit,” heeding back to the history of Vietnam’s conflicts with foreign invaders. One author described the current struggle as just another manifestation of previous conflicts, which Vietnam could handle without intervention (Pham, 2003, p. 140–143).

First Wave of Refugees, Camp Pendleton and Resettlement in Orange County, 1975–1978

On April 30, 1975, North Vietnamese forces took over the South Vietnamese Presidential Palace and declared the end of the war. The capital of South Vietnam, Sài Gòn, was renamed Thành phố Hồ Chí Minh (Ho Chí Minh City) and a long and difficult period of transition began. A year later, North and South Vietnam were officially united under one regime.

Eventually, 141,200 refugees would leave Vietnam seeking asylum in the United States during this period (Sar-Desai, 2005, p. 220). This number included the 130,000 South Vietnamese allies who were evacuated from the country in the weeks leading up to April 30. These were the “upper echelon” of the South, consisting of government and military officials, elites and relatives of United States citizens (Nguyen, 2009, p. 33). Refugee camps were set up throughout the United States to house the refugees during processing, the first and largest of which was Camp Pendleton, located near the border between Orange and San Diego counties in Southern California. Camp Pendleton received its first temporary residents on April 29, 1975 and would eventually process
approximately 50,000 refugees before its closed on October 31 of the same year (“Refugee camp to be closed,” 1975; Wisniewski, 1975).

According to Desbarats and Holland, a third of the refugees processed in Camp Pendleton resettled in Orange County because of its proximity to the camp. Survey results revealed other factors that influenced the decision of refugees to start their new life in Orange County, including the low unemployment rate, mild climate, proximity to markets in established Asian communities and liberal government assistance programs. In addition to these county-wide factors, high concentrations of affordable housing facilitated residential clustering in the cities of Santa Ana, Garden Grove and Westminster. Apartments in these areas were moderately priced and big enough for families that were larger than the typical Orange County family (1983, p. 27–29).

This residential concentration of refugees created a gravitational center for the community that continued to perpetuate over the next several years. In 1975 alone, it is reported that a single landlord sponsored 15–18 families from Camp Pendleton to his apartment complex on Bushard street in Westminster (Smith, 1992, p. 6). Another account states that up to 700 families were living in only 75 units in the Villa Park apartments in Garden Grove (Nguyen, 2009, p. 90). Collet and Furuya report that in 1976, forty Vietnamese families were living in an apartment complex on Westminster Avenue near St. Anselm’s refugee center (2010, p. 6). As this residential pattern emerged, other aspects of community soon followed.

Cultural and economic functions focused around the residential nucleus already in place. The first Vietnamese mass was held at St. Boniface church in Anaheim—200 Vietnamese were in attendance (Nguyen, 2009, p. 114), due in part to the efforts of the
Catholic church in sponsoring refugees. A business license was issued to a refugee service group on December 31, 1975 at 2331 W. First St. in Santa Ana, and “Saigon Market” opened next door at 2329 W. First St. in 1976; this shopping complex marked the beginning of economic concentration and was called “Vietnam Town” in one report (Collet & Furuya, 2010, p. 6; Nguyen, 2009, p. 101). By 1977, 1,200 Vietnamese parishioners regularly attended the Vietnamese mass every Saturday morning at St. Barbara at the corner of McFadden Ave and Euclid St in Santa Ana, within 3 miles of the shopping complex.

Another factor in residential concentration during this period was secondary migration, which reached its climax in the 1980s (as is covered in the following sections). As Vietnamese refugees settled in areas of initial residence, their presence created a gravitational force for subsequent migrants. Refugees that had been distributed across the country made their way to Orange County to reunite with family and friends. Additionally, the number of Vietnamese sponsors grew dramatically during this period—the proportion of Vietnamese sponsors grew from 15% in 1975 to 90% in 1979—and the location of the sponsor often predetermined the location of new refugees (Desbarats & Holland, 1983, p. 25).

Nearing the end of this period, the population of Vietnamese Americans in California grew to 42,115 and the beginnings of a new economic hub began to appear (Nguyen, 2009, p. 79). In 1978, Harry Wu opened a small Asian market on Bolsa Ave in Westminster, joined by Danh’s Pharmacy and Frank Jao’s Bridgecreek Realty (Smith, 1992, p. 23). This economic hub in Westminster—not the original one in Santa Ana—would become the place called “Little Saigon,” first by English media and political
jurisdictions and eventually (post-1990s) by the local business owners and residents (Collet & Furuya, 2010, p. 9). It was this scene, complete with annual Têt (lunar new year) festivals put on by Vietnamese Student Associations, that greeted the next wave of refugees and ultimately determined where they would settle.

The “Boat People” and Geopolitics, 1978–1982

The collapse of South Vietnam, coupled with a series of severe conditions and geopolitical factors between 1975–1978, lead to the dramatic escape of tens of thousands of refugees from communist Vietnam—an epic that the media quickly picked up and labeled “the boat people.” This coverage has left us heartrending images of starving refugees at sea for days, separation of families, attacks by Thai pirates, and emaciated adults and children arriving at refugee camps in Thailand, Hong Kong and Malaysia. These emotionally-charged stories have endured until today, but the subsequent distribution of these refugees and their settlement in a new land is a story that is still being written.

The political instability and symbolic loss due to the Communist triumph over South Vietnam were not the only driving factors in the exodus of these asylum-seekers, although they play the major role in the mainstream narrative. According to Sar-Desai (2005), a series of bad harvests crippled the war-torn country from 1975 to 1977, followed by natural disasters and the destruction of crops due to pestilence and disease from 1977 to 1979. These circumstances lead to inadequate food supplies and a hungry population that had already endured decades of war. Major unemployment and economic instability were worsened by the systematic effort of the administration to compel resettlement of South Vietnam allies to rural areas. In addition, the regime took to
building the military with already-depleted resources, eventually going to war with the Khmer Rouge in Cambodia in 1978 and defending its Northern borders against pro-Cambodian China. Concurrently, military conscription was increased to include all 17–35 year olds for 3–5 years. On top of all this, the government abolished private trade in 1978, expelling ethnic Chinese from Hải Phòng, Hà Nội and other coastal towns. Needless to say, the same year saw 85,000 boat people fleeing the shores of Vietnam (p. 213–214).

In 1979, there were still only 12 Vietnamese-owned businesses in Orange County (Nguyen, 2009, p. 101), but the movement of people to the area would soon increase that number manifold. California registered a 20% rate of net secondary migration as families reunited from across the country while President Carter doubled the national quota of incoming refugees to 14,000 a month (Desbarats & Holland, 1983, p. 24). This “second wave” of refugees would comprise a whole different demographic: refugees who literally had little or nothing left in the home country. These people were typically leaving the country with no type of capital and sometimes little or no education. The boat people would be followed by economic refugees mid-decade and the period between 1979 and 1991 would eventually see 521,500 refugees reach American shores (Sar-Desai, 2005, p. 220).

The influx of immigration was met by response at the local, national and international levels as jurisdictions attempted to manage the flow of refugees. By 1980, the locations of highly-concentrated Vietnamese residents—Little Saigon in Southern California and San Jose in Northern California—attracted a constant flow of refugees. California was home to 40% of all Vietnamese refugees nationwide, and Little Saigon’s
economic hub grew to 100 Vietnamese-owned businesses (Desbarats & Holland, 1983, p. 25; Nguyen, 2009, p. 101). At a national level, the Refugee Act of 1980 allowed refugees to be processed onsite and “potential immigrants” to be sponsored. Important to the discussion of spatial distribution, the Act recommended “measures to avoid destabilization of existing communities by excessive immigration of new ethnic groups” (Sar-Desai, 2005, p. 219), meaning that refugees would be dispersed throughout the country rather than allowed to settle in areas with existing high concentrations of refugees.

This attempt to manage settlement distribution was echoed at the county level, as well. In 1980, the resettlement agencies in Orange County decided to reject sponsorship by non-relatives as the flow of refugees into the county lowered to around 800 per month (Desbarats & Holland, 1983, p. 43). The rapid development of a high-concentration ethnic cluster and economic hub was a point of contention among other county residents. Locals voiced concern over the number of Vietnamese storefronts and signs emerging along Bolsa Ave—indeed, in 1981, one report states that 100 Vietnamese merchants had set up shop in the Bolsa Mini Mall shopping center at Bolsa Ave and Bushard St (Smith, 1992, p. 23). In that same year, a national survey reported 60% of Orange County residents said that the County should stop refugee intake, and one County supervisor proposed a moratorium on accepting additional refugees (Desbarats & Holland, 1983, p. 26).

Despite the strong sentiments against such rapid infusion of refugees in Orange County and the explosion of ethnic economic activity in what people were starting to call “Little Saigon,” the attraction of such a community generated an inevitable inflow of immigrants to the magnetic core. After observing this gravitational pull to the
geographical center for a year, the official policy in the New Refugee Act of 1981 was changed to not discourage formation of ethnic clusters, stating that the “government acknowledges that ethnic coalescence was a fact of life” (Sar-Desai, 2005, p. 222). Meanwhile at the international level, ASEAN sponsored a meeting to address the boat people crisis. In the end, Vietnam agreed to “send emigrants directly to the countries of resettlement at the rate of 10,000 a month” (Sar-Desai, 2005, p. 215), in hopes that fewer Vietnamese nationals would feel compelled to escape by boat.

Ethnic Clustering and Economic Immigrants, 1982–1991

Early 1980 appeared to spell the end of Little Saigon’s rapid growth. With Vietnam’s agreement to send emigrants directly to countries of resettlement, emigration out of Vietnam by small boat dwindled from 300,000 a year to a trickle between 1982 and 1986 (Sar-Desai, 2005, p. 215). In Desbarats and Holland’s 1983 study, they found that Orange County held one-ninth of the whole nation’s total Vietnamese population, that half of the Vietnamese population in the County lived Santa Ana, Garden Grove and Westminster cities, and that the highest concentrations of Vietnamese population corresponded with the three clusters of ethnic businesses (p. 25–26, 32). Even so, the aforementioned authors expected that the refugees’ “location dependence on the ethnic community [would] progressively subside” and that within several decades, urban evolution would “obliterate the distinctive ethnic landscape that took only a few short years to develop” (p. 43). This hypothesis, perhaps based on the international situation of the time and the assumption that immigration out of Vietnam was permanently waning, has yet to unfold.
By 1984, 200 Vietnamese shops clustered on Bolsa and the ambience of the economic hub was already drawing visitors. Nguyễn Ngọc Bích is quoted saying, “It's a must for people like myself to make a pilgrimage to Orange County, to meet people, to eat good food and have a sense of the old Vietnam . . . We jokingly say among ourselves that Orange County is the Vietnamese capital of the US” (Day & Holley, 1984). This sentiment added to the draw for both residents and business owners to establish themselves in the community, a sentiment that has continued until today.

Little Saigon exploded during the mid-1980s, amassing 1,000 Asian-owned businesses by 1987. These businesses were densely packed around the ethnic core, including 34 newspapers and magazines circulating, 58 associations (including religious, professional, mutual assistance, etc), and 12 major shopping areas all within a mile of Bolsa Ave (Do, 1988, p. 51; Tran, 1988). With a strong critical mass, the size of Little Saigon—both in space and in concept—continued to expand, setting the stage for the next phase of resettlement, this time not altogether unexpected.

Suddenly in 1987, countries of first asylum such as Thailand, Malaysia and Hong Kong reported a sharp increase in Vietnamese “refugee” arrivals. These Vietnamese nationals were fleeing from the terrible economic situation in the home country, and were thus classified as “economic immigrants” rather than refugees. Soon after, these countries announced they would not accept refugees/immigrants any longer. To address the issue of economic immigrants, the U.S. eventually devised a plan. In 1990, the U.S. announced that it would accept 400,000–450,000 Vietnamese, mostly former reeducation camp inmates, under the Special Reeducation Center Retainee Resettlement Program, otherwise known as the H.O. program (Sar-Desai, 2005, p. 216).
Growth and Momentum, 1992–1999

Since 1988, when freeway signs that said “Little Saigon, Next Exit” were dedicated by Governor Deukmejian, the use of “Little Saigon” on storefronts and as business names began to take hold (Collet & Furuya, 2010, p. 10). The community continued to grow with immigrants from the H.O. program, further deepening the concentration of Vietnamese in and near Little Saigon. Smith reported in 1992 that Little Saigon contained 1,500 retail shops, restaurants and other businesses, and the area was defined as “a 1½ mile stretch of Bolsa Avenue between Magnolia and Ward streets in Westminster and Garden Grove.” 50,000 shoppers from out of town were said to frequent this ethnic economic hub every weekend (Smith, 1992, p. 22). Concurrent with the economic development of the area, political inclusion began picking up momentum during this period as well. That same year, 24,122 Vietnamese Americans were registered to vote and the first Vietnamese American elected official in the country—Tony Lam—took his seat on the Westminster City Council (Collet & Furuya, 2010, p. 14).

This momentum continued through the 1990s as the number of Asian-owned businesses in the small area of Little Saigon surpassed 2,000 (Tran, 1998) and the number of registered voters nearly doubled to 41,973 (Collet & Furuya, 2010, p. 14). The total number of Vietnamese Americans in Orange County by the end of the decade reached 102,522 (Sar-Desai, 2005, p. 225). Predictions made about Little Saigon (see Desbarats & Holland, 1983, p. 43) could not have foreseen this type of growth—indeed, the stage was set for the population to almost double and the number and reach of Vietnamese American elected officials to expand four-fold in the subsequent 15 years. This growth
pattern in a suburban region makes categorizing Little Saigon as an “enclave” difficult, as the following section will discuss.

Little Saigon as Enclave, Ethnoburb and Beyond

Classical literature on European immigration presents the model of immigrants “first establish[ing] urban enclaves and subsequently migrat[ing] as individuals and families to suburbs” (Alba, Logan, Stults, Marzan, & Zhang, 1999, p. 446). In their article, Alba et al. look at the contemporary discussion on “suburban settlement” in contrast to theories of the past. Quoting from Massey’s “spatial assimilation” model, Alba et al. characterize ethnic enclaves as “located in older, central city neighborhoods” (p. 447). According to this model, the movement of immigrants from an ethnic enclave to the suburbs signified the larger transition of assimilation to the host country’s mainstream. However, this model does not describe the trajectory of ethnic cores that originate in the suburbs. Their research showed that 43% of immigrants arriving in the 1980’s resided outside of central cities—this is characteristic of the Vietnamese refugees arriving during this period. The present project does show outward movement of the community from the place of origin to areas where the “ethnic majority predominates” (Alba, p. 447), illustrating that although new models are required to describe contemporary patterns, spatial assimilation theory is still applicable in some ways to the suburban ethnic community.

Interestingly, while Alba et al. were publishing their work in the American Sociological Review, a new model had already emerged from the geography field to address the issue of ethnic enclaves in the suburbs, namely the ethnoburb. Wei Li published this term in 1997–8 as a “model of a new ethnic settlement type” (p. 480) and
as a geographical perspective to address the suburban ethnic concentration of Chinese people in the San Gabriel Valley. Li defines ethnoburbs as “suburban ethnic clusters of residential areas and business districts in large metropolitan areas” (p. 482). In a separate work published the same year, McLaughlin and Jesilow comment on the benefits of this new type of “urban village.” Immigrants with limited English skills can find employment, older immigrants can find comfort and familiarity, and “Americanized” immigrants can find connection to their heritage and culture—instead of serving first-generation immigrants only, as urban ethnic enclaves have traditionally done in the past, “these urban markets cater for multiple generations” (p. 49–50). At face value, this model may appear to apply in its entirety to Little Saigon, since the location is mostly suburban in nature, but further consideration shows that the community evades even this new model.

In a work examining the development of Little Saigon and Koreatown, Danico discusses the possibilities in defining these suburban ethnic communities. Borrowing Zhou’s definition of ethnic enclave (1992) as immigrant communities that provide occupational niches for immigrants, and Li’s ethnoburb model, Danico states that Little Saigon and Koreatown have been moved beyond either of the aforementioned definitions due to the transformation of Orange County into a “bustling post-suburban space.” As post-suburban, the region contains multiple hubs accessible via private vehicle, unlike dense urban areas, but share similar social problems (p. 18). Danico continues to contest that Little Saigon and Koreatown are geographically rooted and that there is an active effort to “demarcate geographic boundaries” for both communities (p. 18).

Võ expands on the concept of “post-suburban” by addressing aspects of Little Saigon that further its distance from a concrete definition. Little Saigon grew out of a
refugee-based community, and most of the residents historically have not possessed the resources that typify an ethnoburb. Although involved politically at “ethnic solidarity” like in many ethnoburbs, Little Saigon faces “traffic congestion, crime and poverty” like its urban counterparts (p. 88). Similar problems of cost-of-living and declining quality in education are apparent as areas of Orange County become more urbanized.

Collet and Furuya take Little Saigon’s elusive nature and promote it to an “imagined community” (p. 18)—an idea that exists in the minds of those who consider themselves participants. Moving the concept of Little Saigon beyond post-suburban, Collet and Furuya depict the community as a “global brand” (p. 1), a “trademark” (p. 17), and a “place . . . largely in the mind” (p. 22) with conflicting narratives and competing loyalties which has “evolved beyond . . . physicality” (p. 2). This definition—or departure from one—signifies the importance of the meaning behind the label, that “collective ownership and incorporation in American society” (p. 22) are the nebulous concept after which the community seeks. The transition from settlement, enclave, ethnoburb, post-suburban ethnic community and beyond indicates the maturity and resilience of this once-refugee community. However, does this trend truly preclude the geographic characteristics that played such a large role in the formation and development of the community? Has Little Saigon matured beyond a spatial definition, or does its geography still play a role in its persistence as a community?
CHAPTER 3
DATA AND METHODS

I concluded that the ideal demographic data would be house-level residential data—this version of Little Saigon would represent the most endogenous community, namely the people themselves, rather than imposed or arbitrary boundaries. Fortunately, I am currently employed at the Orange County Registrar of Voters (ROV), the government agency in charge of maintaining voter registration records for the entire county. Other house-level data exists that include a larger sample size than registered voters, but the benefits of the ROV data quickly outweighed any disadvantages in the sampling method. At the time, the voter database included 1.6 million records, comprising half of the entire population of the county. The records are regularly updated and include birthplace and surname, which are imperative in determining “Vietnamese-ness” (see p. 26). In addition to these benefits, voter data is public record and therefore can be requested from any county in the country, making this project even more easily repeatable for other locations and/or ethnicities. The ROV generously donated the data for the purposes of this project.

Data Acquisition

The Registrar of Voters archives the voter registration database at the close of registration, typically at 29 or 15 days prior to an election. I acquired datasets in plain text format from the close of registration for the following general elections: 1992, 1996, 2000, 2004 and 2008. Work on this project took place in the spring and summer of 2012,
so I acquired a test dataset from November 2011 and the dataset for the 2012 Primary Election. Unfortunately, the data stored from 1992 and 1996 were pulled from backup tape and in a format not readily accessible. In the end, the usable datasets covered a period of 12 years from November 2000 to June 2012.

**Standardizing the Database, Summarizing the Data**

Although the selected datasets were in a usable format, the database structure differed slightly from year to year. In order to standardize the data before attempting to conduct spatial analysis on it, I imported the text files, starting with the 2011 test data, into respective Access databases where I could run queries and statistics to verify the data against ROV reports. This process also allowed me to familiarize myself with the data structure and how I would implement standardization across databases.

One obstacle in using voter registration data is the volume of records in each dataset. The 2011 test dataset alone contained over 1.6 million records. This became a burden while running queries to determine “Vietnamese-ness” as I was testing multiple criteria and each query took over 20 minutes to complete. Importing this many records into ArcMap directly and attempting to run spatial queries exhibited similar behavior and consistently crashed the program before it completed some of the initial functions. I decided that the data needed to be summarized at some level in order to move any further.

Consulting the project plan, I realized that once the data was imported into ArcMap, each physical address would be converted into a point on the map, which meant that I could summarize the raw data by household and still retain the original level of resolution. For example, if one address was associated with 10 records, and 4 of those
records were targeted as Vietnamese, the resulting data would return one record for that address (instead of all 10) with two additional fields counting total voters and Vietnamese voters (ten and four, respectively). With the datasets already in Access, I was able to summarize the data and export them to plain text CSV files with a much-needed file size reduction.

“Vietnamese-ness”

At this point in the process, I was prepared to start looking into the data and testing my criteria for “Vietnamese-ness.” Fortunately, the data provided by the ROV included both the place of birth and surname of registered voters. This data was captured and recorded by the primary source, namely registration forms and OCR technology and data entry personnel at the ROV. Whether the applicant actually filled in the birthplace and surname fields, whether these fields were accurately and legibly completed, and whether the data entry process accurately captured the data are beyond the scope of this project. However, these should be acknowledged because inconsistencies in the data may originate from these factors. Despite possible errors, birthplace and surname provide ideal data for determining “Vietnamese-ness” for this project. Although the subject is not explicitly stating ethnicity in these fields—that would be “identity” or self-identifying as Vietnamese, which is different than “Vietnamese-ness”—birthplace and surname are satisfactory indicators that are also used by many government agencies including the United States Department of Justice.

Determining ethnicity using two criteria allows the researcher to capture a more complete sample of individuals; however, many scenarios exist under each factor that may introduce erroneous inclusion/exclusion of data. The process for using these two
criteria is detailed in the subsequent subsections. These preparatory steps were tested on the dataset from 2011 then applied to the live databases. It should be noted that the procedures I used for this project are not necessarily the same procedures used at the Orange County Registrar of Voters; I make no claim that the statistics in this report should—or do—correspond with official ethnicity statistics released from the ROV.

Place of Birth

Querying the data based solely on place of birth returned 82,761 records. This scenario includes most individuals that would likely identify with the Vietnamese American community in Orange County, but could erroneously include those who do not, such as children born to overseas military personnel stationed in Vietnam at the time of birth. This direct filtering method applied no control on the returned dataset, so an individual with a common Vietnamese name is included alongside individuals named Smith or Anderson, as long as they are born in Vietnam. Filtering out “non-Vietnamese” surnames is arduous and elusive at best—should Lee, Kim and Wong be considered Vietnamese, or not? What about individuals born to a Vietnamese mother and foreign father who take the father’s surname but are socialized in Vietnam? To avoid undue complexity and ambiguity in the resulting dataset, I concluded to use a direct filter of place of birth only, while disclosing the above possible erroneous inclusions.

The direct place of birth filter method does exclude a large portion of the community, however—the second generation. This class of community members consists of individuals born to Vietnamese American parents outside of Vietnam. The second generation generally identifies with Vietnam, even if it is only through the constructed homeland of Little Saigon, and often considers themselves “Vietnamese.” Excluding this
group would omit an important part of the community, as many of the reenactments of “home” appear under the guise of college campus “culture nights” and culminate in the Tết Festival, all of which are almost wholly directed and carried out by second-generation Vietnamese American high school and college students. As a personal example, my twelve-year-old niece, a young member of the second generation, borrowed my laptop which had a rough draft of this document open on the desktop and, after seeing the heading “What is Little Saigon?” promptly inserted “THE BEST PLACE EVER!!” Fortunately, many of the second generation can be captured by surname.

Surname

The United States Department of Justice has compiled a list of the 50 most common Vietnamese surnames, which I acquired and imported into the database (see Appendix D). I then did a direct filter on the original data (i.e. not yet filtered by place of birth) to see how many records matched the list—85,947 records were returned. This number, higher than the place of birth count, may at first look more inclusive, however, it excludes a significant class of individuals as well. The query excludes those born in Vietnam but whose surnames do not appear on the list. I carried out a surname analysis on the dataset to ascertain the extent of this exclusion, and found it significant.

The dataset contained 3,110 unique surnames. The top five surnames were: Nguyen (27,713, 28%), Tran (10,865, 11%), Le (6,581, 6.5%), Pham (5,909, 6%), and Vu (3,343, 3%). The prominence of a handful of surnames in the Vietnamese population does warrant some historical explanation. During the imperial period, families took the emperor’s surname. Nguyen was the last dynasty and hence the large proportion of the surname population. The list from the Department of Justice matched 87% of the total
surnames returned. Excluded surnames include the following ethnic surnames (originating from Chinese, Khmer, etc): i.e. Wong, Thach, Khong, Kim, Lee, etc; combined surnames of Vietnamese origin: Tonnu (Ton Nu, Ton-nu), Tonthat, Leduc, Lequang, Bui-tran, Nguyen-tran, etc; surnames of Anglo origin (but born in Vietnam): Smith, Davis, Thompson, Anderson, Wilson, Williams, etc. An additional idiosyncrasy was the presence of adapted or misspelled surnames, such as the 19 flavors of “Nguyen,” appearing as Nguyen, Nguye, Nguyen, Ngueyn, Nguyen, Nguyen, Nuyen, Nuygen, Newin, Nguyeh, Nugen, Neugyn, Neuyen, Nguyeb, Nguyenbn, Nguyenl, Nguyent, Nguyen, and Nuguyen. After analyzing surnames, it became clear that both criteria would need to be combined to minimize the exclusion of groups that should actually be included.

 Combined Criteria

In order to produce results that capture both camps, I combined the criteria using a boolean OR to include individuals who matched either criterion. The query was designed to check for place of birth first; if they were born in Vietnam, they were included in the dataset. If not, the query then checked surname, and if there was a match, that person was added to the dataset instead of being excluded because of a place of birth outside of Vietnam. The resultant record count was 98,404. This approach reveals that between 13–15% of this population would have been excluded by using a single method. The resulting dataset contains records that match the following: individuals born in Vietnam, and individuals not born in Vietnam but whose surname appears in the top 50 Vietnamese surnames list.
Garbage In, Garbage Out

The process to this point has only prepared the data to be visualized on the map. However, these steps are integral to the final map result, for an omission or oversight during these stages will be perpetuated and exacerbated throughout the process, possibly unbeknownst to the researcher.

The time expended in processing the data exceeded that of visualizing the data by a ratio of 2:1. This fact—that processing takes more time than the visualization—must be taken into account when planning a project. Data processing is a major component in the work of mapping; very little of the work in this project was performed in GIS software, rather in the database itself. I remember an idiom that one of my GIS instructors applied to map creation: “garbage in, garbage out.” Fortunately, I was already familiar with the stringent policies that govern the maintenance of voter registration records at the ROV, otherwise more time would have been required to verify and cross-check the data in the initial stages of the processing. Once the mundane and sometimes monotonous work of data processing is complete, the researcher is now ready to begin the long-awaited mapping process.

Each dataset of summarized data was exported to a plain text CSV file and subsequently imported into ArcMap. After verifying that the data had successfully been transferred, I proceeded with the necessary spatial functions required to visualize the data on a map. The functions I use here—geocoding and spatial join—are among the most common GIS tasks.
**Geocoding**

Address-based data must be converted to spatial data before being visualized on a map. This process is called geocoding, or assigning the address a pair of xy coordinates that correspond with the approximate location of the address on the map. This process has become transparent and ubiquitous with the increase of third-party mapping services and navigation systems. When using one of these services to get directions from one address to another, the average user will not give a second thought to how the computer knows where the address is on the map. However, geocoding is not an exact science—it depends on several factors and is simply an estimate of the address’s location.

Once the datasets were imported into ArcMap, they were ready to be geocoded. Initially, I ran the abbreviated geocoding service available from the context menu, but this turned out to be a problem. On the first run, the process took 6 hours to get to 90%, then crashed before completing. This same process of exporting to text file, importing to ArcMap then running the geocode service (all with subtle changes in parameters, etc) was repeated four times.

I determined that the underlying issue was the address locator of the geocoding service itself. The method I was using to geocode was sending the data to a remote server for processing then returning the results. I researched how to create a local address locator and found that I already had the necessary data, a shapefile that contains all the streets and address ranges in it, and that I could easily load the shapefile to create a new local address finder. While I was working out the parameters for my new address locator, I found that the ArcMap toolbox had a “Geocode” tool. Using this tool, along with my
newly-created address locator, I ran the geocoding service again and it successfully completed in less than an hour!

The simple address locator I created did not use any sophisticated parcel or rooftop matching technology such as is found in third-party services, so the number of unmatched records was significant. Over 10% of the total dataset had been left unmatched, largely due to different address standardization methods. The geocoding service was run again with a lower match score threshold, which resulted in just under 10% unmatched records. The remaining 90% provide sufficient county coverage.

**Spatial Join**

Once the address data had been geocoded, resulting in a dataset of points with total voter count and Vietnamese voter count, it was ready to be joined to the spatial data for visualization. This process of joining consists of determining which points of one dataset are contained within each feature of another dataset—specifically, how many geocoded points are contained in each Census block—and aggregating the attribute data of the contained points. The concept is similar to a relational join in a database, although the criteria are based on the spatial relationship between data rather than a pre-defined relationship, hence the term “spatial join.” My previous attempts demonstrated that using the context-menu “Spatial Join” option was insufficient for a dataset of this size. It also revealed that the correct field map option must be chosen for the fields involving the aggregate data. This time around, the spatial join tool was run from the toolbox and the field map option “sum” was chosen for the total voter count and Vietnamese voter count fields. As opposed to the previous attempt, which ran for hours and crashed before completion, this run took only 10 minutes and produced the expected result.
Throughout the period of data processing, frequent integrity checks were performed to ensure that the resulting data was consistent with the source data. It is an easy trap to work through the entire process and view the data at the end and assume that it actually reflects the source data. Data that looks convincing or behaves as expected is no basis for the assumption that it is accurate or consistent with the source. At this stage, I again checked the resultant data for integrity against the source data and found it satisfactory.

The aggregated total voter count and Vietnamese voter count were used to calculate the population density of each polygon. This was accomplished by creating a new field in the Attribute Table (making sure to set the data type to “double” to accommodate decimals), and using the Field Calculator to find the ratio of Vietnamese to total voter count (Vietnamese / total voter count). This was another point at which to check the veracity of the data, to see if the respective counts were transferred successfully.

**Visualization**

Every attempt was made to visualize the data for this project rather than merely “map” it. This means all the difference in presenting spatial data to a diverse audience. Some maps are meant to be complex and present a multitude of different datasets, while others are intended for fast consumption and minimal processing on the viewer’s part. Take a navigational map, for instance, with roads, political boundaries, elevation lines, land use, place markers all vying for the viewer’s attention—this is a highly complex map, intended to be studied and interpreted by a broad spectrum of individuals. Data visualization, on the other hand, typically should focus on one dataset with the express
purpose of relaying information in a simple, straight-forward manner to the viewer. Visualizations are normally presented to augment a text version of the data, whereas a navigational map is often provided as the only reference for the viewer. These differences make the visualization of spatial data, inherently presented on a map, problematic if proper principles of cartography are not followed. These principles inform us about choosing the subject of the map, minimizing distraction to the subject while maximizing emphasis on it, all while balancing reference features to create a harmonious whole.

**Base Map**

Earlier in the process, I created a base map for reference. The voter registration data acquired was limited to Orange County, California, so reference data was either downloaded for that scale or clipped to the Southern California area. Boundaries for counties, cities, census tracts and blocks, as well as roads (edges) were downloaded in TIGER/Line shapefile format from the U.S. Census website (see “2010 Census TIGER/Line Shapefiles”). These files were imported into ArcMap and subtly symbolized to direct maximum emphasis to the data. For example, roads are stylized in a light color rather than one of the high contrast colors typical in a road map. This will allow the data to come to the foreground instead of competing with roads for the viewer’s attention.

**Map Type**

Once the base map had been prepared and the data was ready to be visualized, one step was still undone: determining how the data was going to interact with the map. The end product will best inform the researcher at this stage, namely the type of map, metric, color scheme and other elements of the visualized data. The map type is determined by the type of data—a point map if the data is displayed in raw form as address points, or a
polygon map, which is useful for displaying summarized data in a thematic form. Thematic maps often use a color ramp, or scale of graduating colors based on designated values taken from the data to show changes in relation to the rest of the map. This project utilizes both point and thematic maps to analyze the Vietnamese American community of Orange County.

A point map was made based on the household count data before the spatial join was created. This map provides a very granular look at the population distribution of the community, but, consisting of nearly one hundred thousand records, may be overly complex and certainly does not display all data effectively (i.e. multiple points in close proximity appear as one point with no further emphasis or visual weight). However, there is still utility in the point map when used with interactive digital maps—the viewer can “zoom in” for a high level of detail.

One of the most common spatial visualizations is the choropleth map, displaying each feature in the dataset as a different color, based on a pre-determined color ramp or gradient. Determining the values at which a color ramp will transition is a challenge unless the data has already been analyzed to some degree. GIS applications offer pre-determined intervals, but the researcher really needs to understand the distribution of the data, not only what he or she wants to say, in order for the color ramp to have meaning. This necessitates analysis of the data and contextual consideration to establish a meaningful metric.
Establishing a Meaningful Metric

After the data processing stage, I was left with a dataset containing the polygons with the total count of voters and the count of Vietnamese voters, and the relationship between the two—the proportion of Vietnamese voters.

The methods used in this project to establish a meaningful metric were: analyzing the data by calculating mean, median and standard deviation of the Vietnamese voter proportion to get a feel for the distribution and “average” of the data, and consulting previous studies to see what metrics have been implemented.

On the first approach, I calculated the median and standard deviation of Vietnamese voter population density to get an idea of the spread and distribution of the values. The goal of this exercise was to find a value that could serve as the “threshold,” meaning polygons with a density value greater than or equal to that of the threshold would be displayed on the map, and therefore imply that there was some significance to that number. Using the calculated median, the voter registration data was opened in ArcMap and the symbology—or the style used to present the data—was adjusted to only display the polygons that met the threshold. The resulting map appeared too light, suggesting that the threshold was too high and not representative of the underlying data. Certain blocks were hand-checked against the original data and the impression of under-representation was confirmed. These blocks had a sizeable number of Vietnamese voters, but were not displayed as such on the map. The threshold was adjusted and the process repeated until the resultant map visually correlated with the data. This final threshold value turned out to be 0.04, meaning that blocks where Vietnamese voters made up 4% or more of the total voter population would be displayed on the map. This process of
comparing the calculated “averages” and the visual map was repeated in determining the subsequent values of the metric, keeping in mind these values would serve as intervals in the color ramp of the final symbology. The final metric was established as follows: 0–4%; 4%–15%; 15%–30%; 30%–50%; 51%+.

I compared this metric with Desbarats and Holland’s study of 1980 Census data, where the low threshold is 2% and the high threshold is 5%. They also mention densities on page 25 at 5% and 10% in Santa Ana, Westminster and Garden Grove. Since their study in 1983, the population has both grown and further concentrated in certain areas, so it appears reasonable that the threshold for this project ended up slightly higher than their research, however, in order to further validate my metric against previous work, I generated a map using Desbarats and Holland’s data and threshold along with the current data in this project, and found a strong correlation (see p. 44). Another factor in the higher threshold for this project is the unit of scale, which is neatly described by the Modifiable Areal Unit Problem.

Modifiable Areal Unit Problem

The problem of data appearing differently at different scales and groupings has been documented since the 1930’s (Gehlke & Biehl, 1934), and can lead to the assumption that aggregated data, once aggregated at a specified scale and grouped in discrete zones, can be re-grouped at a different scale without issue (see Openshaw, 1984). Spatial data is susceptible to this problem because there is no standard set of spatial units in geography—all units are arbitrarily imposed on the space by administration or the researchers themselves, and can be modified on a whim. This dangerous fallacy is demonstrated in political phenomena such as gerrymandering where district boundaries
are modified to encompass and concentrate the most beneficial constituent groups for the elected official.

This problem is clearly evident in ethnic community mapping as well. The data available to Desbarats and Holland was Census data, which provides ethnic group data at the tract level. They included a map in their article showing the most impacted tracts. From the scale of the county, this may be sufficient in displaying general patterns and trends. Census data today still provides the same format and modern ethnic maps at the tract level are bountiful. But my objective in this project was to delve deeper into the fabric of ethnic population distribution, focusing on higher-resolution data and visualizing at the smallest unit scale available by the Census—the block. I created maps showing the difference between data at the city, tract and block scales to illustrate this problem in the context of my thesis (see Figure 2, Appendix B). As the resolution increases, subtleties and nuances—even predominant trends—are revealed.

Figure 2. Comparison of Vietnamese voter density at different unit scales.
The Mapping Process

I will provide a simple summary of the actual work on the map since it is predominantly a matter of preference and style, and to leave the emphasis of this report on the aforementioned processes and the following description of the maps themselves.

With all of the above processes and considerations behind me, I went to work on building the maps based on my research questions as well other inquiries that came up during the project. Once the data had been geocoded and aggregated at the Census block level, I layered the block data on the previously-prepared base map and applied the color ramp with the specified intervals. I added elements to make the maps more cartographically pleasing—a title, legend, North arrow, and scale meter, as well as notes on the creation date and data sources—and polished off the visualization by customizing the labels and clipping any superfluous geographical data from the base map. These maps are highlighted in the subsequent chapter.

I had planned for the data and mapping processes, as outlined in this report, to take a significant amount of time, however, I was not prepared for how much time it would ultimately consume. It took a full six months to complete the maps. The tedious steps in processing and validating the data, iterating through the testing cycles, and performing mapping functions often go unseen but are truly the heart of a GIS project. This formidable obstacle clearly answered one of my original research questions, namely, why is mapping not more prominent in the study of ethnic community—simply put, good maps take time.
CHAPTER 4

RESULTS

Thirteen maps were generated for this project, one of which was included in the previous chapter to illustrate the Modifiable Areal Unit Problem. From the myriad ways to display the data on a map, I chose to visualize raw household count, Vietnamese voter population density, and different analyses of growth over time. This chapter will detail these map categories, how each category contributes to the definition and area of Little Saigon, and relevant observations along the way. Map previews are included in the text for reference, and full maps can be found in the appendices.

Household Count

The raw household count maps display a single red dot for each household with one or more Vietnamese voter registration record (see Figure 3, Appendix C). This method was chosen, instead of using a color ramp to differentiate households with different numbers of Vietnamese voters, to keep the map simple as it was already complex with the high number of data points. Household count maps were generated for each of the four sample periods (2000, 2004, 2008, and 2012), as well as a composite map which is detailed in the subsequent section on “Growth.”
The advantage of these point maps lies in the different levels of detail, even as a printed map. A viewer can, at a glance, grasp the basic outline and shape of the community. At a closer look, the viewer can distinguish areas of high and low concentration and the underlying cities. A careful inspection reveals the presence of even the lowest concentration, regardless if only one Vietnamese voter resides in an entire neighborhood or city. This multilevel spatial description of Little Saigon is, to my knowledge, unprecedented in the literature. In fact, mapping programs with this level of resolution have been questioned and even protested (see Winton & Watanbe, 2007), hence my choice to only publish these maps at a county scale.

The lack of this type and resolution of map is indicative of assumptions within the literature that may not reflect the actual distribution of Vietnamese people in general, such as location and proximity not acting as driving factors in the existence and vitality of Little Saigon as a concept. These maps—and especially a look at the trend over time, which is addressed in-depth in the “Growth” section—confirm that, although Vietnamese people have resided outside the “official” bounds of Little Saigon since at least 2000,
there is a definite and persistent form that emerges from the residential pattern. Indeed, data points are observed in all corners of the county, from La Habra and Yorba Linda to Seal Beach and San Clemente. However, the distribution trend from 2000 to 2012 implies a “thickening” of the concentrated community core more than an exodus to the periphery. This trend stands in opposition to theories that Little Saigon has fully matured beyond “enclave” status and that boundaries are amorphous and ever-expanding.  

**Population Density**  

The Vietnamese voter population density maps display polygons of graduating colors to represent the percentage of Vietnamese voters to total voters, summarized as households by Census block (see Figure 4, Appendix G–Appendix J). The intervals in the color ramp are determined by a pre-established metric, indicating less-dense polygons with lighter colors and more-dense polygons with darker colors.  

The advantage of these maps—and choropleth maps in general—is the immediate presentation of complex data in a simple form. The viewer can quickly consume the shape and characteristics of the general trend. The problem of visually excluding overlapping points in the point maps is resolved here, since each polygon represents a density value that includes all Vietnamese voter data points (where points in highly-dense areas of the point maps are visually obscured). As such, the choropleth maps provide a more contextualized spatial definition of the community, in relation to the general population. This advantage over point maps reveals trends that are not visible when viewing only household data.
The shape of Little Saigon in the thematic maps appears condensed and centered around the “traditional” core. This is due to the addition of the total population values to the data, and the results confirm what the point maps could only imply: the thickening of the core. Though the growth trend from 2000 to 2012 does show growth around the periphery, the intensity of color around the community core in 2012 indicates that the “Bolsa Corridor” continues to attract Vietnamese residents as it did 30 years ago (Desbarats & Holland, 1983), consistently anchoring the community—in space and concept—to a definite geography. Furthermore, this view of density growth confirms that the raw increase of Vietnamese voters in the point maps is not merely a reflection of overall voter population increase, but that the Vietnamese voter growth has significantly increased around the core, above the growth rate of the general population. There is one question that these density maps cannot answer—what was happening to the general population growth during this period? The following section addresses this concern.
Growth

The growth maps are more complex than the previous point and choropleth maps. This added complexity means two things for the viewer—more time is needed to understand the objective and meaning of the map before interpreting the data, and, if the former is successfully accomplished, a more meaningful insight into the underlying data. Complex maps should contain a textual component to orient the viewer and instill confidence that, despite the complex look, the data is actually accessible and worthy of the viewer’s effort. As each growth map tells a different story, they will be addressed individually in the following subsections.

Distribution Growth Comparison

This map is actually a composite of the household count maps (see Appendix C). They are laid out side-by-side to allow the viewer to easily compare them on a county level and to mimic the effect of an animated map as much as possible in printed form. Although changes are present, it is difficult to recognize the growth trends in a map of this type, however, it can be useful in checking underlying data when used in reference with choropleth maps.

Density in Census Tracts

This map was generated using the map from Desbarats and Holland’s 1983 study and 2010 Census data (see Figure 5, Appendix E). Their map was replicated by hand, transposing 1980 tracts onto 2010 tracts when necessary, then the 2010 data was mapped using Desbarats and Holland’s threshold. This exercise was used to “true” the threshold that had emerged from the voter data when establishing the color ramp metric. To do so, the area of blocks in the study above the threshold of 0.04 were outlined and simplified to
correspond with primary roads, then superimposed on the combined map. Generally speaking, this outline encompassed both datasets and therefore satisfactorily confirmed the threshold as representative of the data.

At the tract level, the shape of the community has increased nominally over the last 30 years (apart from a disproportionately large tract in east county that is misrepresented and which can be considered an anomaly in this map—see section on “Modifiable Areal Unit Problem”). Some tracts in the far west and east regions of the 1980 outline have decreased in overall Vietnamese population density, whereas additional tracts to the north and south of the original area have increased, changing the general orientation of the area from horizontal to vertical. A general observation from this map is that the community has grown in size since 1980, however, the large size of the Census tract hides many aspects of the growth. It is this very limitation of Census data
that drives the need for this project, and the following maps demonstrate how high-resolution data illuminates the story in important ways.

**Vietnamese Voter Density**

This map emerged out of several efforts, namely to determine the average Vietnamese voter density over the total period of the study, the total area of above-average density for each dataset, the way in which each dataset interacts with each other, and whether a “persistent area” of growth exists (see Figure 6, Appendix A). The last question regarding a “persistent area” was of special interest to me, for if there existed such an area, I could confidently label it “Little Saigon.”

The resultant map addresses all of these items, and, as with all complex maps, is open-ended to allow further interpretation by its viewers. To generate this map, the average density value for each respective dataset was calculated and used as a threshold for filtering “above-average” density blocks in that dataset. All of the blocks from each dataset with a value greater than or equal to the density threshold were combined,

creating a single polygon for each dataset. Then the combined polygons were overlaid in succession. The 2000 polygon was used as a baseline and left hollow to allow the viewer to see how the other datasets interact with it and each other.

Due to the nature of this map, which displays the data as one large polygon rather than separate blocks, it is best suited to define the shape of Little Saigon in terms of Vietnamese voter density. Indeed, the emergent form is reiterated through every dataset with surprisingly little variance. Since roads were used as the physical boundaries of Westminster’s 1988 definition of Little Saigon, I have “revised” the definition using roads as well.

Over the past 12 years, the “persistent area” of above-average Vietnamese voter density—effectively, Little Saigon—has consistently rested on the area bordered by Beach Boulevard and State Highway 22 to the west, Interstate 405 to the south, State Highway 91 to the north and Interstate 5 and the Santa Ana River to the east. Predominant areas outside but adjacent to the “persistent area,” also consistently above-average in Vietnamese voter density, include parts of Anaheim, Stanton, Westminster, Fountain Valley, and Santa Ana. Non-adjacent areas meeting the same criteria include parts of Huntington Beach, Costa Mesa, Tustin, Placentia, Lake Forest, and Yorba Linda.

The observation of growth mentioned in correlation with other maps is echoed here—over the last 12 years, growth has largely affected the “persistent area” and has minimally impacted the rest of the county.

**Density Percentage Growth**

Another complex visualization is the Vietnamese Voter Density Growth map (see Figure 7, Appendix F). This choropleth map presents multiple aspects of growth at once.
The objective of this map is to present the growth rate of Vietnamese voters—both increase and decrease—in relation to the growth rate of the total voter population for any given Census block. This approach requires a separate metric for each relationship, namely positive overall growth to positive Vietnamese growth, positive-to-negative growth, negative-to-positive growth, and negative-to-negative growth. I chose to represent relationships in which Vietnamese voter growth is positive with a green-ish color, and conversely with a red-ish color. The resulting map is a conglomeration of colors without any clear initial pattern, however, the viewer can see subtle trends by carefully studying the visualization.

It is perhaps counter-intuitive to generate a map about Little Saigon where the most significant areas are represented by subdued colors, such as in the case of this map, however it is also important to acknowledge the areas that are not significant in terms of Vietnamese voter density. Each color ramp tells its own story, although subtle, and provides its own contribution to the definition of the area of Little Saigon.

Figure 7. Detail of Vietnamese density growth from 2000–2012.
Green: Positive-Positive. The green color ramp represents the positive-to-positive relation (overall increase, Vietnamese increase). The majority of the county exhibits this gradient, and it almost entirely represents the “persistent area.” It represents the phenomenon of substantial Vietnamese voter growth above that of the expected raw increase corresponding to the total voter population growth. The prominence of this relationship is expected since the Vietnamese general population growth is greater than the total population growth countywide, and the lower growth rate in the center of the community core infers that those blocks are reaching a “saturated” population density level.

Red: Negative-Negative. The red color ramp representing the negative-to-negative relation (overall decrease, Vietnamese decrease) is nearly absent from the map, appearing only in the periphery. In this case, the Vietnamese voter density has decreased beyond the raw decrease expected due to overall population decrease.

Cyan: Negative-Positive. The cyan color ramp represents a negative-to-positive relation (overall decrease, Vietnamese increase). This means that although an area experienced overall voter decrease, the Vietnamese voter count still increased. These small areas appear as a smattering of blocks along the periphery.

Magenta: Positive-Negative. The magenta color ramp reveals an unexpected story in the growth pattern of the community. This color scheme represents the positive-to-negative relation (overall increase, Vietnamese decrease), and is prevalent in much of the county that falls outside of the “persistent area.” The implication for blocks exhibiting this color is that although countywide voter count increased, and over 70% of that increase was due to the increase in Vietnamese voters, the percentage of Vietnamese
voters in these blocks decreased. In other words, areas that are associated with the persistent area of Little Saigon are growing in Vietnamese voter population while areas not associated with the persistent area of Little Saigon are declining in Vietnamese voter population. The Vietnamese coming to the county are not arbitrarily settling in any location—they are attracted to the community core, just as they have been for 30 years. Combined with the other maps which present the same trend in a variety of ways, this map further confirms the existence of a magnetic core, an essential spatiality that continues to drive and direct the shape, growth, and future of Little Saigon.
CHAPTER 5

CONCLUSION

Yes, Little Saigon can be mapped. Different approaches to the term “community”—political, economic, cultural, perceived—will, of course, result in different boundaries, shapes, and forms, but just as other continuous entities such as soil type and foliage cover can be mapped with the correct tools and classification scheme, ethnic communities like Little Saigon in Orange County can be spatially visualized and even defined in meaningful ways.

This project documents the manifold steps in acquiring and processing the data needed to produce a high-resolution ethnic population density map, in hopes that subsequent researchers can replicate this model for their own work on ethnic community. Spatial visualization provides layers and depth of understanding that traditional analyses are not capable of producing, and the map is fast becoming the ubiquitous vehicle of understanding the world and its people. This is in part due to the advances in technology that allow unprecedented computational power and fast wireless communication for seamless integration of spatial awareness in mobile devices and GPS units. However, a deeper reason lies beneath the sleek surface of the spatial technology revolution—meaning and direction are informed by, connected to, and derived from the space to which phenomena are inextricably grounded.

The visualization of Vietnamese voter distribution sheds light not only on the shape and area of Little Saigon but also a concept that has lost its place in much of the
contemporary conversation on this community: that spatiality is an essential, driving force in Little Saigon. Underlying the political, economic, cultural, and perceived community that Little Saigon embodies in place and in mind, physical location directs the present trajectory of the community, as it has in the past and as it very likely will in the future. Twelve years of data confirm and perpetuate residential patterns observed in 1983: that a core exists and exhibits physical characteristics such as form and boundaries, and that subsequent growth has not dissolved or diminished that form but reinforced it. The work on refugee resettlement 30 years ago concluded that Vietnamese Americans gravitate to a spatially-defined Little Saigon—this work demonstrates that they still do.
APPENDIX A

AREAS WITH ABOVE-AVERAGE VIETNAMESE VOTER DENSITY
APPENDIX B

ORANGE COUNTY VIETNAMESE VOTER DENSITY RESOLUTION COMPARISON
APPENDIX C

ORANGE COUNTY VIETNAMESE VOTER DISTRIBUTION COMPARISON
# APPENDIX D

## TOP 50 VIETNAMESE SURNAMES

<table>
<thead>
<tr>
<th>1. Nguyễn</th>
<th>18. Đinh</th>
<th>35. Thị</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Trần</td>
<td>19. Trịnh</td>
<td>36. Thành</td>
</tr>
<tr>
<td>3. Lê</td>
<td>20. Lư</td>
<td>37. Đạm</td>
</tr>
<tr>
<td>4. Phạm</td>
<td>21. Đoàn</td>
<td>38. Vong</td>
</tr>
<tr>
<td>5. Huỳnh</td>
<td>22. Đào</td>
<td>39. Triệu</td>
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<tr>
<td>6. Vũ</td>
<td>23. Thái</td>
<td>40. Bửu</td>
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<tr>
<td>8. Trường</td>
<td>25. Văn</td>
<td>42. Vĩnh</td>
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<tr>
<td>10. Ngô</td>
<td>27. Vượng</td>
<td>44. Tiêu</td>
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<tr>
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<td>28. Phùng</td>
<td>45. Hòa</td>
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<tr>
<td>12. Đỗ</td>
<td>29. Quách</td>
<td>46. Trang</td>
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<tr>
<td>13. Bùi</td>
<td>30. Tả</td>
<td>47. Giang</td>
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<td>32. Tôn</td>
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<td>33. La</td>
<td>50. Nghiêm</td>
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<td>17. Lương</td>
<td>34. Thạch</td>
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</tr>
</tbody>
</table>
APPENDIX E

VIETNAMESE DENSITY IN CENSUS TRACTS
APPENDIX F

VIETNAMESE VOTER DENSITY GROWTH
APPENDIX G

VIETNAMESE VOTER DISTRIBUTION: 2000 GENERAL ELECTION
APPENDIX H

VIETNAMESE VOTER DISTRIBUTION: 2004 GENERAL ELECTION
APPENDIX I

VIETNAMESE VOTER DISTRIBUTION: 2008 GENERAL ELECTION
APPENDIX J

VIETNAMESE VOTER DISTRIBUTION: 2012 PRIMARY ELECTION
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