

**THE UNEXPECTED FACES
OF GATED COMMUNITY RESIDENTS
INSIDE THE UNITED STATES**

by

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ABSTRACT

Gated communities (GCs) are a growing phenomenon around the world and in the United States. Data collected by the American Housing Survey (AHS) has shown that the total number of housing units inside GCs rose from seven million in 2001 to over ten million in 2007; raising the total to slightly over eight percent. Despite increasing evidence to the contrary, GCs nevertheless are persistently viewed as being homogeneous enclaves of the wealthy. Towards gaining greater insight into the diversity and of GCs and possible differences between inside and out, this thesis uses the data collected in the most recent AHS (2007) to further elucidate the issue.

A canonical discriminant function analysis (DFA) is performed to determine if a different set of push and pull factors act on the residents of GCs relative to the residents of other communities in the United States. A series of two sample difference of proportions Z-tests are used to examine the relationship between immigrants and GCs while a two sample difference of means *t*-test is used to determine if a gated 'transnational elite' exists inside the United States.

Differences between the residents of GCs and non-gated communities along the dimensions considered in the DFA are not found to be meaningful, suggesting that those living inside of GCs are looking for the same community aspects as those living elsewhere. However, the immigrant population is almost twice as large inside of GCs as elsewhere in the United States, suggesting that immigrants are driving the growth of GCs, in part, by creating demand. The proportion of the gated foreign born is found to be more than twice that of native born Americans, with immigrants originating in countries with histories of GCs having the highest rates of gating once inside the United States. This suggests that although immigration itself

seems to encourage gating once inside the host country, the culture of origin is also an important determining factor. Although the income of foreign born homeowners is found to be greater inside of GCs than elsewhere, the differences are insignificant, suggesting that no 'transnational elite' exists inside of the United States.

CHAPTER 1

INTRODUCTION

A Rapidly Growing Trend

Gated communities (GCs) are a growing phenomenon around the world and especially in the United States. In 1997, it was estimated that there were more than three million housing units which could be classified as gated¹ in the United States (Blakey and Snyder, 1997). Recognizing this growing trend, the American Housing Survey (AHS) in 2001 began including questions regarding the gated status of households inside the United States. The national survey found that over seven million households, just below six percent of the United States total, were gated (Sanchez *et al.*, 2005). Between 2001 and 2005, Danielsén (2007:520) found that “9 of the 10 largest [United States] metropolitan areas experienced at least a slight increase in the percentage of walled and access-controlled communities.” Examination of the most recent AHS dataset (2007) shows that the United States Census Bureau now estimates that over eight percent of households in the United States, amounting to over ten million in number, can be classified as gated. The questions then present themselves: Why is that residential form so popular in the “home of the brave” and who is contributing to that popularity?

¹ Because this thesis uses the AHS data, their definition of a gated community was adopted: “Community surrounded by walls or fences preventing access by persons other than residents.” See page 574 of the 2007 AHS codebook (published April, 2009). Blakey and Snyder’s definition is analogous.

Fortified communities have traditionally been scarce in the United States, except for a few examples such as Llewellyn Park, NJ established in the 1850's, the private streets of St. Louis in the 1860's and Tuxedo Park, New York in the 1880's (Hayden, 2003; Low, 2003). Prototypes of the modern GC were used by the already-removed wealthy to further separate themselves from the rest of society.

Gated communities later became more common starting in the 1960's as ideal destinations for retiring Americans. Exclusion of 'free-riders' (especially children in age segregated communities) kept taxes low and allowed for the provision of amenities and services which were otherwise out of reach (Blakey and Snyder, 1997; Blechman 2008).

Popular opinion often views contemporary GCs as being continuations of such forms; as part of the larger trend of residential segregation whereby the white and the wealthy seek to separate themselves from minority and lower class populations. While in some cases this still holds true, evidence from several recent studies has called the validity of such blanket opinions into question. For example, Sanchez *et al.* (2005) found that the majority of GCs are actually rental units with a large proportion of minority occupants.² Furthermore, actual evidence of differences between the residents of GCs and those living elsewhere is lacking. While the residents of GCs may be searching for safe communities (Blakey and Snyder, 1997) and 'niceness' (Low, 2009), so are the residents of other communities. Because such findings are so recent, deeper examination of these trends is lacking in the literature.

² That many of these minorities were of Hispanic descent also suggested a significant immigrant presence as pointed out by Vesselinov *et al.* (2007).

Given the scale of the questions of why people are settling in the GCs of the United States and who it is that have chosen to do so, as well as the complicated nature of social phenomena in general, comprehensive answers are beyond the scale of any one study. However, greater understanding of this phenomenon can be achieved by asking more specific questions which contribute to attaining complete and generally applicable answers. Towards this end, this thesis will further the general understanding of the phenomenon by developing and testing five specific hypotheses designed to address our lack of understanding of contemporary GCs and the possible existence of differences between those living inside and outside of GCs and the nature of the increasing diversity of GCs in the United States.

While it has been recognized that gated and non-gated residents are often looking for the same community attributes (see, for example, Lemanski and Oldfield, 2008), statistical tests of hypotheses to that effect have been absent at the national level. The first hypothesis will test to determine if a different combination of push and pull factors is acting on the residents of GCs than is acting on the rest of the American population. In this way the validity of the commonly assumed differences between those living inside and out can be appraised.

The other four hypotheses are designed to examine the nature of the diversity within GCs. The second hypothesis will shed light on the relationship between GCs and the immigrant population of the United States by examining the size of that population inside of GCs with the expectation that it will be disproportionately large. The third hypothesis will compare the proportion of the immigrant population living in GCs to that of native born United States residents with the expected result of the immigrant rate being the greater of the two. The fourth hypothesis will compare

the rates of immigrant gating by country of origin, with the expectation that immigrants originating in countries with a history of GCs will be more likely to live in one once inside the United States. And finally, the fifth hypothesis will test to determine if the gated segment of the immigrant population is part of the ‘transnational elite’ or class of wealthy expatriates often present in the GCs of other countries.

Because this thesis is concerned with the broader trends of GCs in the United States, this thesis will use the data collected in the most recent American Housing Survey, the only nationally representative dataset to contain information on GCs. While it is understood that these data may fail in some cases to capture a deeper level of detail, in order to answer questions at the national scale such a compromise must be made. By using these nationally representative data, this thesis will contribute to finding answers to the more general questions of why GCs are rapidly spreading in the United States and which groups are most responsible for this proliferation.

CHAPTER 2

LITERATURE REVIEW

General Cause for Concern

That GCs foster social division and segregation cannot be denied; keeping something (most notably people) out is a wall's *raison d'être*. It is argued that GCs, along with shopping malls and theme parks, represent the global trend towards privatized urbanization (Manzi and Smith-Bowers, 2005; Alvarez-Rivadulla 2007). The strongest manifestation of this trend is the rise of common interest developments (CIDs) which are characterized by common ownership, private land use controls, private government through home owners' associations (HOAs) and master planning (McKenzie, 2003). The 'privatization of public space' (Kohn, 2004) such as streets and the proactive security measures they employ (Levy, 2009) separate GCs from individual means of exclusion³ such as doormen, fences, and distance.

Despite evidence to the contrary (see Valentine, 2008), it is argued that public spaces facilitate understanding and empathy with society at large via random interaction (Gieryn, 2000). Conversely, whatever the cause of social exclusion, that exclusion leads to homogenization and potential ignorance of those who are absent. That ignorance can subsequently lead to fear and the creation of perceived 'deviant others' or "folk devils" (Cohen, 1972) on whom the ills of society can be blamed, and

³ Levy (2009) further argues that GCs are also different from other forms of privatization.

who, in turn, must be excluded. It is this concern over the severing of ties between the inside and the outside of GCs that has led courts inside the United States to consistently grant access to GCs⁴. Levy (2009) reported in his systematic study of court rulings concerning GCs in the United States that “in every dispute over the entry of nonresidents, courts have intervened to allow access to the gated community” (Levy, 2009:642).

Yet it is important to note that social exclusion existed prior to GCs making that segregation tangible⁵ (Blakey and Snyder, 1997; Low, 2001; Alvarez-Rivadulla, 2007; Giglia, 2008). Cameron (2006) notes that the wealthy have always occupied “placeless” spaces of inclusion by using various “loopholes and legal innovations” to separate themselves from the rest of society. The first examples of modern American GCs – such as Llewellyn Park, NJ in the 1850's and Tuxedo Park, NY in the 1880's (Hayden, 2003) – were fixed examples of these spaces of auto-exclusion. They were "uncommon places for uncommon people" (Blakey and Snyder, 1997:4). It is the fact that they are no longer uncommon that is viewed by many to be of particular cause for concern.

Traditionally, suburbanization has been the more common means of achieving this exclusion in the United States, which has resulted in a host of concomitant problems. Erosion of the tax base caused by the out-migration of the (primarily white) middle class to the suburbs led to increased levels of poverty, in turn

⁴ It is important to note that regardless of what the courts decide in such disputes, GCs are still keeping out those unable to afford the legal fees required to gain entrance.

⁵ Although the proximity of wealth and poverty potentially created by GCs is almost universally recognized, the best example is given by Alvarez-Rivadulla (2007) which reports a GC whose wall “has a riding club on one of its sides, and serves as one of four walls of several shanties on its other side (Alvarez-Rivadulla, 2007:55).

causing higher levels of crime (Cohen *et al.*, 2003), lower social capital (Altschuler *et al.*, 2004), increasing levels of stress (Gee and Payne-Sturges, 2004), ultimately having a negative impact on health (Brulle and Pellow, 2006). This condition came to be called "urban desertification," which resulted from "contagious urban decay" (Wallace, 1990:802).

Parallels between traditional suburbia and GCs were recognized by Romig (2005) even before Vesselinov and Le Goix (2009) tested a hypothesis to that effect, concluding that "since suburban areas are now diversifying, gating becomes the new mechanism for escaping diversity once again" (p. 17). Given the lack of an alternative choice, it is argued that GCs are becoming a means of 'distance-substitution' whereby physical barriers replace remoteness as a means of providing separation. The common fear then becomes that gating is and will continue to cause what might be termed 'suburban desertification' by combining new detriments with exacerbated versions of the old (Huang, 2006). As a result, modern GCs are widely perceived as having a negative impact on society as a whole (Blakey and Snyder, 1997; Low, 2003; Low, 2008a).

These negative impacts generally fall into the broad categories of increased segregation, social exclusion and homogenization (Atkinson and Blandy, 2005; Lemanski, 2006; Vesselinov *et al.*, 2007; Pow, 2009; Vesselinov and Le Goix, 2009), the direct negative externality of crime displacement (Blakey and Snyder, 1997; Helsley and Strange, 1999; Landman, 2000; Atkinson and Blandy, 2005), the erosion of the tax base and subsequent loss of services via secession (McKenzie, 2003a; Atkinson and Blandy, 2005; Lemanski *et al.*, 2008; Low, 2008a), and the impact these effects have on democracy (Blandy and Lister 2005; McKenzie, 2005; Rosen and

Razin, 2009). However, the evidence informing these fears is largely contradictory or inconclusive.

On the one hand, evidence suggests that the doomsday predictions of a ‘bifurcated society of hostility’ (see, for example, Low, 2008a) are premature. Salcedo and Torres (2004:40) found in their study of Santiago, Chile, that GCs are “not a source of envy, frustration or unpleasantness” to the proximate non-gated residents; but rather, that they are happy for the *positive* externalities the gates provide, such as better infrastructure, including “public transportation, lighting systems, police patrols, better roads”. Similarly, Asiedu and Arku (2009:245) found that in Accra, Ghana, gated and non-gated residents view each other either positively or at least neutrally and that the non-GC residents hold “no resentment towards their gated neighbors.”

With regard to outsiders’ resentment, some evidence exists that such is a ‘case of sour grapes’. For example, Pow (2009) found that although the poor in China engage in acts of rebellion against the proximate GC (such as hanging their laundry or drawing graffiti on the walls), the poor indicated that rather than wishing to see the GCs’ removal, they aspire to live one day behind the gates.

On the other hand, the divisive effects of GCs are well documented. These fears are typified by the findings of Low (2001; 2003) and Lemanski (2006). Low found in a qualitative study of two GCs that GC residents came to fear the outside and the people who lived there. Low (2001:55) further reported residents discussing “their fear of the poor, the workers, the ‘Mexicans’ and the ‘newcomers’” and that residents were displeased with the workers who entered the GC to provide unskilled labor. Low (2001:55) further reported that “even residents who did not select the community for its gates now would only live behind protective walls.”

Lemanski (2006) studied the case of a GC that was constructed adjacent to an older, poorer neighborhood in South Africa. She found that there was a hostile begrudging on the part of the poorer residents, who felt excluded and “rejected by their new neighbors” despite the fact that they were there first (Lemanski, 2006:406). Conversely, the wealthy GC residents displayed indifferent ignorance, simply viewing the older community next door as being a dangerous place (Lemanski, 2006). Blandy and Lister (2005), examining case studies in the United Kingdom also reported that “relations with the wider neighborhood seem to be adversely affected by the physical form of the GC development” (Blandy and Lister, 2005:300).

Vesselinov and Le Goix’s (2009) analysis of the AHS metro data found that GCs seem to add another level to extant urban segregation, confirming Romig’s (2005) observation. Similarly, the GCs in South Africa are seen as being more than less a continuation of apartheid (Jurgens and Gnad, 2002; Lemanski, 2006; Carruthers, 2008; Durington, 2009) whereas in Ghana (Asiedu and Arku, 2009), Mexico (Giglia, 2008), Trinidad, and several other South American countries (Mycoo, 2006) with histories of segregation based on colonialism, GCs are either on the rise or changing form.

These trends seem to indicate that GCs are widely just continuations of extant exclusionary practices, as well as to confirm the concern that exclusion begets exclusion, no matter its manifestation (Blakey and Snyder, 1997). It will be demonstrated, however, that while this is a contributing factor in the global rise of GCs, such general explanations are insufficient to fully explain the phenomenon.

Effects on Crime

Landman (2000) reports that GCs affect crime in three ways: the reduction of crime, the displacement of crime, and the reduced response times of emergency personnel. Although fortified GCs provide residents with the obvious benefits of reduced crime (Jurgens and Gnad, 2002) by acting as 'target hardeners' (Blakey and Snyder 1997), the concern is that this was effected not through the elimination of crime; but rather, through the displacement of crime to softer (un-gated) targets (Atkinson and Blandy, 2005).

According to Helsley and Strange (1999), this displacement of crime actually results in an increase of crime in other, un-gated areas. This, they argue, "helps [to] explain both the explosive growth of gated communities and the puzzling fact that gating may flourish while the crime rate declines" (p. 83). That is; even when there are fewer criminals in the society at large, there are, as a result of gating, more active criminals per ungated resident. This, in turn, raises the demand for GCs, increasing their number and further exacerbating the issue. Even so, it is important to note that other spatially-dependent treatments of crime (such as video surveillance) also result in the displacement of crime (Koskela, 20006)⁶. Gated communities differ from surveillance equipment in that they physically control space through the creation of obstructions.

While these obstructions are obviously an inconvenience to non-residents,⁷ they are also increase the response times of emergency personnel by forcing

⁶ For further analysis of how technology is changing the control of space, see: Graham, Stephen D.N. 2005. "Software-sorted geographies." *Progress in Human Geography*. 29(5) 562-580.

⁷ For example, Lemanski (2006) reports that the boundaries of a GC in Cape Town, South Africa are designed in such a way that forces the residents of the poorer neighboring settlement "to travel almost 3 km to reach shops that lie less than 100 metres (sic) away" (Lemanski, 2006:408).

them to take circuitous routes around the GC (Landman, 2000; Atkinson and Flint, 2004). The most extreme example of this is reported in Puerto Rico, where the homicide rate is higher than the national average and is partially attributable to the victims of violent assault dying while waiting for slow responding emergency personnel. The slow response time, in turn, is blamed on the prevalence of GCs and the obstructions they create (Garcia-Ellin, 2009). As a result, this further increases the incentive to live behind the gates.

Loss of Services in Surrounding Areas

Buchanan (1965) dispelled the traditional dichotomy of viewing goods as being either public or private when he proposed his economic theory of ‘clubs’. A club, Buchanan argued, must be exclusive enough to prevent congestion, yet large enough to spread costs thin enough (*i.e.*, make them low per capita) so that members can enjoy goods which would otherwise be unavailable to them. However, this dictates that exclusion is both possible and performed. He concludes “the theory of clubs is, in one sense, a theory of optimal exclusion, as well as one of inclusion” (Buchanan, 1965:13).

Webster (2002) was the first to apply Buchanan’s economic theory of clubs to gated communities, predicting that local governments would likely start encouraging the development of GCs because they make economic (club) sense. McKenzie (2003b) confirmed Webster’s (2002) prediction by placing GCs into the larger framework of common interest developments (CIDs).

McKenzie (2003b) reported that Las Vegas and other cities in the United States encourage CIDs and homeowner’s associations (HOAs) so as to keep taxes low amid rapid growth, not having to supply the infrastructure and services taken care of

by the developer and HOA, with walls often being required by local zoning laws (McKenzie, 2003b; Vesselinov *et al.*, 2007). Thus, “cities can acquire new property tax payers without having to extend to them the full panoply of municipal services and thereby making CIDs ‘cash cows’ for local government” (McKenzie, 2003a:207). Cheung (2008) found that the services provided by private governments do, to varying degrees, replace those of the municipal governments in larger cities although in smaller cities, they merely add to those provided by the municipal government resulting in greater overall services provided (Cheung, 2008).

Overall, the result is that the residents of CIDs in general and GCs in particular sometimes have to pay for services twice; first in the form of taxes to the local government, then in the form of fees to the HOA. This duplication of taxes led to growing complaints ending in secession (McKenzie, 2003a) whereby private developments incorporated as private cities to eliminate the problem of the ‘free rider’ (Pompe, 2008) reducing the taxes that municipal governments could levy against them (Low, 2008a). The results are reminiscent of suburbanization.

The loss of the “cash-cow” status of CIDs and GCs in turn leads to the erosion of the tax base and the reduced provision of public services (Atkinson and Blandy, 2005; Lemanski *et al.*, 2008). Fewer government services in turn forces people into places where the community provides them, resulting in a smaller tax base, fewer government services, *etc.* Again, the process is auto-enforcing, and as a result, ‘members’ are taken care of rather than ‘citizens’ (Low, 2008a). In this context, the next question becomes: What effect does this have on democracy?

Effects on Democracy

The logical fear that GC residents withdraw from society to the extent that they stop voting is unfounded. Walks (2009) tested that hypothesis and found that while there was lower general turnout within the GCs he studied, the differences were not statistically significant, nor, did he believe, sufficient to represent a withdrawal from political life (Walks, 2009). In fact, there is reason to believe CIDs and GCs might be a positive force for democracy at large.

Blomley (2005:126) points out, “the private sphere is valued as a site of individuality, liberty and autonomy, while state action is a potential threat to freedom.” Thus by expanding private governance, GCs and CIDs can be seen as a positive, especially during an age of state expansion (Kirby, 2008). Moreover, the supposed homogenizing effects of GCs can, in some cases, actually be conducive to democracy. For example, Andel and Liebig (2002:101) note that “a political issue is more likely to provoke effective senior activism if it affects a homogeneous group rather than American seniors in general.”

Regarding the community level, Chen and Webster (2005:215) put it best when they wrote “the structural problems of collective governance – information asymmetry and opportunism, free-riding and rent-seeking – are inherent in HOAs as much as in public government.” The difference, notes Correia (2000:224), is that GCs “sometimes enforce rules and regulations that would be deemed unconstitutional if imposed by the government.” Even so, logically HOAs cannot be tyrants, else they run the risk of chasing away residents; a club without members provides no benefits.

McKenzie (2003a) calls the market functioning of GCs and CIDs into question, however, because the contracts, covenants, and restrictions (CC&R) are generally written in cryptic legal language that most homeowners cannot understand.

As such, they are not making informed and rational decisions in their choice of residence (McKenzie, 2003a). Atkinson and Blandy (2005:183) echo this sentiment, stating that “it is only if the conceptual framework of contract is stretched to the breaking point that GCs, at least in England and the United States, can be seen as a form of genuine self-management.”

The idea of voting with residence (*i.e.*, by leaving the club) is not always an option given the price of moving; especially, perhaps, when there is already a reputation of a tyrannical HOA (or several proximate houses simultaneously on the market as a result) making it harder to sell the house (McKenzie, 2003a; Chen and Webster, 2005). Furthermore, the prevalence of CID housing means that the agency in choice of housing is reduced because there may not be many options for something else (McKenzie, 2003a). Negative externalities likely further reduce the extent of this agency.

This review of the negative impacts of gating has shed light on the fact that not all problems shown come from all GCs; the ‘risks’ to society at large are shown to be case specific. Given that the majority of the negative effects of GCs are self-enforcing, their continued proliferation can be expected. As such, understanding why it is that people choose to live inside GCs in the first place, as well as who these people are, comes to be of primary concern. The next section will review the literature concerning the causes of gating, in the United States and around the world.

Review of the Reasons Gated Communities Exist

The use of physical boundaries to define and protect space is not a new one. Throughout history walls have served in both practical and symbolic capacities. While in primitive times, walls were constructed for the practical purposes of keeping

out predators and as tools of oppression (Mumford, 1961) they were also used to delineate sacred space in imitation of the divine (Eliade, 1954) as in the ancient Chinese city of Ngog (Wheatley, 1971).

The practical and symbolic uses of walls reached a full synthesis in Medieval Europe, when

“the walls of cities were ritually consecrated as a defense against the devil, sickness, and death. Then, too, symbolic thinking finds no difficulty in assimilating the human enemy to the devil and death... the result of attacks, whether demonic or military, is always the same – ruin, disintegration, death” (Eliade, 1968:49).

What Eliade asserted in that statement is that walls were designed not so much to keep out a given *cause* of harm, but to keep out harm itself, whatever its cause.

On the one hand, the resemblance between these older forms and modern GCs has been widely recognized⁸ (see, for example: Helsley and Strange, 1999; McKenzie, 2003a; Atkinson and Blandy, 2005); some aspects of walls’ form and function, both utilitarian and symbolic, are universal across time and space. Understanding the moment requires knowledge of the history from which it has emerged. On the other hand, as Low (2008b:62) points out, cultural narratives are “not independent of the historical moment in which they occur”. Thus, while it is important to acknowledge the similarities between past walls and present, understanding the re-emergence of this residential form requires examination of the empirical evidence of today.

⁸ U.S. courts have also seen the similarities. Ron Levy (2009) cites the case of *Citizens Against Gated Enclaves v. Whitley Heights Civic Association* wherein the court called the GC “‘a return to feudal times’ (457)” (Levy, 2009:644).

Modern GCs are not exclusive to a given place in the contemporary world; the re-emergence of this residential form is a fairly ubiquitous phenomenon (Landman, 2000; Webster *et al.*, 2002; Frese, 2008). Two reasons exist why the modern GC has recently attracted so much attention. First, GCs are emerging in countries such as the United States (Blakey and Snyder, 1997; Low, 2003; Romig, 2005), the United Kingdom (Atkinson and Flint, 2004), South Africa (Jurgens and Gnad, 2002; Lemanski and Oldfield, 2008; Lemanski *et al.*, 2008; Durlington 2009), Poland (Gasior-Niemiec *et al.*, 2009), and Germany and Hungary (Bodnar and Molnar, 2009) where they traditionally have been absent or scarce. Second, in countries which have historically had some form of GC such as China (Wu, 2005; Low, 2005; Huang, 2006; Pow, 2009), Saudi Arabia (Glasze and Alkhayyal, 2002), Israel (Rosen and Razin, 2008, 2009), Mexico (Giglia, 2008), and Ghana (Asiedu and Arku, 2009), their form and functions are changing, often attracting groups of people which traditionally have not lived in GCs.

It has been recognized that the interaction of global and national, as well as state and local, forces must be considered to understand the rise or change of GCs in a given country (Webster *et al.*, 2002; Low, 2005; Huang, 2006; Grant and Rosen, 2009). However, understanding the rise of GCs inside the United States is of particular importance to understanding the global phenomenon (Atkinson and Blandy, 2005)⁹ because the modern GC is considered to have developed in the United States (Durlington, 2009). As such, the recent re-proliferation of the GC is viewed by many to be the spread of “a fairly unified (and reified) United States model” (Bodnar and

⁹ Atkinson and Blandy (2005) also consider the South African model to be of importance in understanding the bigger picture of gating, though South Africa’s first GC was not constructed until 1987 (Jurgens and Gnad, 2002:340).

Molnar, 2009:5). Conversely, understanding the global context of gating is important because the findings of some studies (Sanchez *et al.*, 2005; Vesselinov *et al.*, 2007) have suggested that the foreign born population is disproportionately represented behind the gates.

The reported connections between the United States and the global spread of GCs are often as abstract as the belief that American influence and neo-liberalism causes change and scares people into GCs (Low, 2005) and the reduction of the role of the state, as in China (Wu, 2005). However, there are also more concrete examples where developers in Israel and Canada explicitly have stated that they follow the American form (Grant and Rosen, 2009) and the emergence of American firms working with local developers to construct GCs in other countries such as Ghana (Asiedu and Arku 2009) and Chile (Bordsdorf and Hidalgo, 2008).

The United States Model

The “United States model”, which is proliferating around the globe, is based on the typology developed by Blakey and Snyder (1997) in their flagship work on GCs, *Fortress America*. After broadly defining GCs as "residential areas with restricted access in which normally public spaces are privatized," Blakey and Snyder (1997:2) identify three primary types of GCs inside the United States based on who the residents are, the form and function of the walls and gates, and the amenities contained within them. Briefly, these categories are ‘Prestige Communities’, which are walled for the sake of status; ‘Lifestyle Communities’, which are walled primarily to keep amenities exclusive and prevent crowding; and ‘Security Zone Communities’, which are walled because the people inside are afraid of crime and criminals (pp. 39-41).

In many of these communities, the fortification serves to enhance the functions of what already exists, making exclusive amenities more exclusive, prestigious places more prestigious, and safe places safer. In the words of McKenzie (2003b:4) “the gated community is especially attractive, as it adds fortification to all the other attributes of CID living”.

Blakey and Snyder (1997:44) further explain that these three types of GCs

“all reflect to varying degrees four social values... a sense of community, or the preservation and strengthening of neighborhood bonds; exclusion, or separation and protection from the outside; privatization, or the desire to privatize and internally control public services; and stability, or homogeneity and predictability.”

There are two things of note concerning these four social values. First, they are redundant in that they are mutually reinforcing. For example, privatization both requires and contributes to exclusion (Buchanan, 1965; Webster, 2002; McKenzie 2003b). Second, this redundancy is the result of all four being part of the broader framework of community¹⁰ and social capital.

Jackson (1984:13) wrote:

“The most basic political unit in any landscape is the boundary. Politically speaking what matters first is the formation of a community of responsible citizens, a well-defined territory composed of small holdings and a number of public spaces; so the first step toward organizing space is the defining of that territory, after which we divide it for the individual members. Boundaries, therefore, unmistakable, permanent, inviolate boundaries, are essential.”

This quote serves to illustrate the fact that boundaries are themselves important to the strength of a community¹¹. Following from this is the idea that the strong “inviolate

¹⁰ Blakey and Snyder (1997) recognize the difficulty in defining community, be treat it as constituted by sharing on several levels. See Blakey and Snyder (1997:33).

¹¹ That is, geographic communities.

boundaries” of GCs would naturally support a stronger sense of community and there is evidence to this effect. Romig (2005) reported finding large amounts of social capital behind the gates tied to the exclusionary nature of the community and Lemanski *et al.* (2008) reported GC residents having a strong sense of community and connections with their fellow insiders. Mycoo (2006) reported similar findings although there is also evidence to the contrary (Landman, 2000).

Some research evidence suggests that not only do GC residents have a weak relationship with the wider neighborhood (Atkinson and Flint, 2004) but also have weak social ties to other residents inside the community (Wilson-Doenges, 2000; Blandy and Lister, 2005). Salcedo and Torres (2004) reported that residents of gated and non-gated communities actually have more problems with their fellow insiders or outsiders than they do with the other group. Similarly, Levy (2009) noted that literature on the disputes around GCs focuses on those occurring inside the gates, either between residents or with the HOA, rather than between inside and out.

Gated communities demonstrate the apparent contradiction that they do not appear to strengthen the sense of community even though they have bounded a region within the walls. The reason Blakey and Snyder (1997) treat GCs as being manifestations of “the search for community” is because GCs after “the United States model” tend to bundle “inviolable boundaries” with several other attributes conducive to community, some of which are dependant (or perceived to be) upon the strength of those boundaries and the security they provide (Sanchez *et al.*, 2005). That is, security is the precondition for a host of other benefits provided by community.

While the search for the panacean community is undoubtedly part of a GC resident’s rationale for choosing to live there, the same can be said for a resident living

elsewhere. For example, Low (2009:90) states that the desire for “a nice house, with nice neighbors, in a nice neighborhood where your home values and environment are stable” are part of the “niceness” desired by GC residents; clearly, they are not the only ones who feel that way. Lemanski and Oldfield (2008:5) discuss the issue in the context of South African “land invasions” which are characterized by large groups of squatters laying claim to a piece of land and setting up a community:

“Residents of both gated communities and land invasions express a desire for security and autonomy, in particular the independence to select a lifestyle that the state is unable to provide for them.”

The desire for the “niceness” that goes with community is ubiquitous; people seldom choose a home with the hope of worsening their situation. Thus, while the concept of the search for community is useful for understanding a greater trend of gating, it is itself too broad to be of operational value. As such, evidence regarding the specifically reported pull factors of GCs needs to be examined.

Security Provided by Gated Communities

As should be expected, the global spread of GCs is tied to crime, fear, and security. In many countries such as South Africa (Low, 2005; Lemanski, 2006; Lemanski *et al.*, 2008; Durlington, 2009), Trinidad (Mycoo, 2006), Brazil (Carvalho *et al.*, 1997), and Mexico (Giglia, 2008), gating is the result of high and increasing crime rates and corruption. What is surprising is that those same concerns with crime and security are reported inside the United States (see for example, Blakey and Snyder, 1997; Low, 2001; Blechman, 2008; Coggeshall, 2008). This is often considered puzzling given our low and fairly stable crime rates as a nation.

One explanation comes from Adams and Serpe’s (2000) review of crime and social integration. As they explain, “Taking precautions against crime is not

associated with reduced fear but with increases in it” (p. 621), suggesting that people who began by taking small precautions against crime eventually felt the need to live in a GC. This explanation is supported by the ethnographic study of Low (2001), which reports that some residents who did not choose their community specifically for the gates would now only live in a GC for the security it provides¹². Another contributing factor could be crime displacement whereby gating displaces criminal activity, resulting in higher crime rates (real or perceived) in un-gated areas (Helsley and Strange, 1999). However, the former explanation presupposes that people are already afraid; the second, that gating has already occurred.

The initial drive for gating in the United States is seen by many to be tied to media portrayals of crime (Blakey and Snyder, 1997; Garcia-Ellin, 2009; Warr, 2009). Warr (2009) points out that the proliferation of GCs in the United States coincided with the proliferation of television and the rising crime rates of the 1960’s and 1970’s. He takes this to mean that at a time when crime rates were rising, entertainment became increasingly available at home and more and more focused on that crime, in turn leading to increased seclusion and fear. Garcia-Ellin (2009) reports that in Puerto Rico, when talking about crime, the media uses emotionally charged hurricane-like language to play on the fears of the people, in spite of the fact that Puerto Rico’s crime rate is lower than the national average¹³.

¹²Carvalho *et al.* (2009) report a different explanation for continued gating. In their case study of Alphaville, a GC in Brazil, they found that residents chose the GC for security, but being dissatisfied with the levels provided, stayed in Alphaville for other benefits such as appearance and quality of housing.

¹³ It needs to be noted that the national crime rates mean little someone living in a high crime area.

Security also is of particular concern for those with children. Blakey and Snyder (1997) and Low (2003) both report that the decision to gate is often associated with the attempt to protect children, either from crime or the traffic hazards of open streets. Similar results were found in Chile (Bordsdorf and Hildalgo, 2008), Uruguay (Alvarez-Rivadulla, 2007), and Lebanon (Glasze and Alkhayyal, 2002). Interestingly, gating for the sake of protecting children can result in a stronger sense of community. As Rogers and Sukolratanamettee (2009:331) explain, “the number of children seems to reflect a mechanism by which neighbors meet and get to know the people in the neighborhood.”

Media portrayals of crime also act as a driving force in other countries such as Ghana (Asiedu and Arku, 2009) and South Africa (Durlington, 2009). The difference between other countries and the United States, however, is that in many countries, crime rates actually are extremely high which necessitates gating for those likely to be targeted. For example, in South Africa, GCs are seen by the populace as being “a necessary evil” which at least keep the elite from leaving the country (Lemanski et al., 2008:135). Mycoo (2006) reports “the decision to live in a gated community in Trinidad has little to do with exclusivity; it is one of necessity” (p. 140) representing “privatized responses to state failure” (p. 137). Bordsdorf and Hildalgo (2008) report that economic actors in Brazil are more efficient at providing services than the state. This is similarly the case in both Lebanon (Glasze and Alkhayyal, 2002) and Hungary (Bodnar and Molnar, 2009). These cases represent reactions to state failure.

Conversely, in the United States, consumers have proactively “responded” to state failure, in the sense that they are privatizing public functions prior to their

collapse¹⁴. In the case when the state is not failing, this leads to the redundancy of community and state in “the preservation of law and order and the maintenance of infrastructure” (Jurgens and Gnad, 2002:351). This was the case inside the United States until many CIDS and GCs began seceding, incorporating as their own cities (McKenzie, 2003a; Low, 2008a). Low (2008a:88) views this as a resurgence of the paradigm of first half of the 19th century, when “water, sewer, street cleaning, policing and fire protection were provided privately in cities.”

This return to the ‘club good’ mentality is largely the case because GCs and CIDs as clubs make economic sense, preventing the free-rider problem and essentially ensuring that everyone in the community contributes. The beauty of the club is that it allows access to goods and services which are otherwise out of reach; it allows a different *lifestyle* than would otherwise be available (see, for example, Webster, 2002; Manzi and Smith-Bowers, 2005; Foldvary, 2006; Pompe, 2008). Incorporated age-segregated communities are the strongest example of this because they exclude children, perhaps the largest ‘free-riding’ group of all. In turn, this eliminates the need to support schools, resulting in lower taxes (Blechman, 2008). It was in the form of retirement communities that GCs first began proliferating in the United States in the late 1960’s and 1970’s (Blakey and Snyder, 1997; Blechman, 2008).

Lifestyle of a Gated Community

By the 1980’s retirement communities began including a bundle of amenities, such as golf courses and swimming pools which provided a leisure lifestyle

¹⁴ Although the feedback loop already discussed may eventually necessitate the universal private provision of services in the United States.

inside of a secure and exclusive environment (Blakey and Snyder, 1997). This is why GCs that follow the popular conception of the “United States Model” of GCs represent “exclusive consumer clubs” as in Israel (Rosen and Razin, 2009:1712). To date, the penultimate version of the lifestyle community is The Villages, in Florida, which consists of dozens of GCs spanning an area larger than Manhattan and housing more than 75,000 people¹⁵ (Blechman, 2008).

In his book, *Leisureville*, Blechman (2008) recounts his experience of the time he spent living with some older friends in The Villages. He reports a promiscuous fantasy life of intoxication and general disengagement with the wider world, partially achieved via filtered news and a make-believe history. Attacks on “paramount reality” such as the corruption of temporal sequence are required in attempts “to revert to the consciousness of the child, the pure world of play” (Cohen and Taylor, 1976:161) which is evident in The Villages¹⁶.

Connection with the past is considered by some to be a driving force for gating. Frese’s (2008) study of a military retirement community linked the choice to live in a GC during retirement with living on a military base or in off base fortified housing earlier in life; either as a member of the armed forces or as a brat. Low (2003:55) argues GCs can satisfy our “yearning for the intimacy and predictability small town life represents, a nostalgia (sic) for a mythic, uncomplicated past, one that

¹⁵ As of 2008, Andrew Blechman reported that there were “nearly 75,000 people living in The Villages” (p. 39). However, he also reported that each year the sale of homes inside The Villages has been higher than the previous one for the ten years prior to 2008, and that upon “completion” The Villages will hold 110,000 people.

¹⁶ It is important to note that The Villages are an exaggerated manifestation of the U.S. model of gated community.

probably never existed.” This is supported by Marcus (1992) who found that adults who have fond childhood memories try to recreate their childhood homes.

Although this obsession with fantasy is thought by some (see, for example, Kunstler, 1998) to be especially an American attribute, this fantastic reconnection with a mythical past is also evident elsewhere around the world. Lemanski *et al.* (2008:146) found that in Cape Town, South Africa, security was the secondary draw to GCs, whereas creating a lifestyle “reminiscent of a bygone era, *protected* and detached from the harsh realities and broader concerns of the outside world” was more important (emphasis added). Alvarez-Rivadulla (2007:58) found the “small town feel” characterized by “leaving things outside, forgetting about locking doors, supervising children less when they play outside” was one of the major benefits provided by the gates. Part of the creation of this small town feel comes from trust in the people of the community due to the absence of deviants and undesirables (Low, 2005; Herbert, 2008).

Gated communities help to create this trust by ensuring that residents inside are “pre-approved” (Blakey and Snyder, 1997:59). This works on a variety of levels. Alvarez-Rivadulla (2007) found that GC residents viewed the poor who were allowed to enter the community to work as being honest or hardworking. Giglia (2008) notes that the GCs in Mexico City are ineffective at actually keeping people out, because the guards allow well dressed people to enter. Even then, however, the gates still preserve the feeling of safety by creating perceived “purity” in the absence of actual homogeneity. This is also important both in the creation and maintenance of class status.

Class Status Afforded by Gated Communities

Homogeneity helps ensure the preservation of the property values to which class is tied and following from this has been identified as a major pull factor of GCs in the United States (Blakey and Snyder, 1997; McKenzie, 2003a; McKenzie, 2005; Romig, 2005; Coggeshall, 2008). Pompe (2008:432) found that GC residents are willing to pay 18.6% more for a home behind the gates than in a non-gated community, positing that this is in part because GCs “reduce homeowner investment risk.” This is supported by Bible and Hsieh (2001) who found gating to have a positive effect on housing prices. Low (2005:6) posits that gating is not only a strategy of maintaining property values, but is also a manifestation of “middle-class status anxiety” which causes people to avoid those who have fallen on hard times”, as they act as reminders of the fragility of status in the modern economy. Similarly, in Uruguay, Alvarez-Rivadulla (2007) found that gating was a strategy of class reproduction. However, it needs to be recognized that property values are not of concern to those who rent, and the majority of GCs in the United States are rental communities (Sanchez *et al.*, 2005).

Sanchez *et al.* (2005:290) posits that such is likely the case because the gates “signify ‘middle-class’ respectability”, offering a level of distinction typically absent in rental developments. Blomley (2005:126) elucidates the issue, explaining that “ownership is seen as a good thing because it denotes standing, responsibility and self-control.” Ownership is itself a status symbol. It follows then, that in the absence of ownership, other forms of class and status symbols must be employed; in this case, walls and gates and the exclusion they provide (Vesselinov, 2008). This is similarly the case elsewhere.

In China, GCs often employ “elaborate gates” as symbols of the good life (Wu, 2005:241) sometimes imitating Roman designs to display exclusivity (Pow, 2009). Rosen and Razin (2009:1709) report a diverse ethnic milieu inside of a major GC demonstrating what they term “the prominence of class over ethnic factors.” Grant and Rosen (2009:579) support this, arguing that the armed and fortified boundaries of GCs in Israel create “universal harmony united in class consciousness” creating “an exclusive and modern club that discriminates only by affluence.” Thus, GCs can be used to create class status when it is absent, as well as to maintain class status when it is present. A major threat to class status (among other things) is change in general.

In her examination of GCs in the United States, South America, and China, Low (2005) reported that the factor common to all three locations is change associated with globalization and the increased heterogeneity and uncertainty it introduces. Perhaps the prime mover in the creation of change is the state¹⁷. For example, the transition from communism is seen to be a cause of gating in Poland (Gasior-Niemiak *et al.*, 2009). In Ghana, the rise of GCs began in the 1990’s with the liberalization of that country (Asiedu and Arku, 2009); in Mexico, the government’s wish to supply fewer services has necessitated the existence of HOAs (Giglia, 2008). Bordsdorf and Hildalgo (2008:159) assert that “the latest (gated) developments in Chile must be interpreted as results of globalization.”

¹⁷ The state sometimes plays a more direct role in the creation of GCs, as in China, which is seeking to create “subjects who will govern themselves at the level of their residential communities without the need for government intervention” (Tomba, 2009:592-593). A similar case of direct state action occurred in the U.S. Garcia-Ellin (2009) reported that in Puerto Rico “the Police and the National Guard” conducted a series of quasi military actions and occupations to forcefully construct gates on several housing projects which they then occupied and policed during the 1990’s as an effort in the drug war. However, Rosen and Razin (2009) explicitly note that the emergence of modern GCs in Israel is not the result of state action.

A major manifestation of change is the arrival of new and different groups of people as with diversification of the suburbs in the United States (Romig 2005; Vesselinov and Le Goix, 2009). In South Africa, the end of apartheid led to an influx of squatters in white areas (Jurgens and Gnad, 2009) referred to as “land invasions” (Lemanski and Oldfield, 2008) and the lower classes have similarly “invaded” the good land in Trinidad (Mycoo, 2006:138). In both cases, such “invasions” are seen as a major driving force in the rise of GCs. Thus, the role of immigration must also be considered. Immigration relates to the creation of GCs in two ways: because immigrants introduce heterogeneity and create change, possibly “pushing” the native born population into GCs, and because there is evidence that immigrants themselves have a strong propensity to live in gated communities upon arrival (Sanchez *et al.*, 2005; Vesselinov *et al.*, 2007).

Shamir (2005:199-200) notes that globalization has sparked increasing security measures flowing against its effects, including increased mobility and immigration. These security measures are based on the “paradigm of suspicion” wherein the threats of crime, immigration and terrorism are conflated. This mistrust of immigrants, and the ails they supposedly represent, has resulted in a global “formal criminalization of mobility itself” (p. 201). As an example, Puerto Rico has a large number of immigrants, and the general (Puerto Rican) population has “an exclusionary attitude towards these immigrants” (Sanchez, 2009:324), helping to explain the public’s acceptance of the widespread “forced gating” which transpired in Metro San Juan during the 1990’s (Garcia-Ellin, 2009) officially as an effort in the war on drugs.

Although the immigrant has always been a source of distrust and unease in the United States (Herbert, 2009), this has become increasingly the case since the

terrorist attacks of 9/11/2001 (Ehrkamp and Leitner, 2006). Janx (2008) suggests that the nature of those attacks (lacking the face of a state actor) has affected the American conception of threats and their sources. Not knowing where “the enemy” or the source of danger is can lead people to seek places where they know the enemy is not; one example being gated communities (Shamir, 2005). The strongest link between immigration and GCs comes from Vesselinov (2008:548) who found that a “1% increase in recent immigrants leads to 8.2% increase at the metropolitan level.”

While the fear of immigrants and the change they represent may be driving some people to GCs, it also must be recognized that evidence exists that immigrants themselves are often found behind the gates. Although Vesselinov and Le Goix (2009) found a lower proportion foreign born residents in GCs in Seattle, Phoenix, and Las Vegas, Vesselinov *et al.* (2007) found a higher proportion of foreign born residents living in GCs in the South and West regions of the United States. Furthermore, Sanchez *et al.* (2005) found residents of Hispanic and Asian origin to be disproportionately represented behind the gates for the nation as a whole¹⁸.

One explanation for this is the use of gates as providers of status (Vesselinov, 2008). Status and social standing in the destination country can be particularly important to immigrants because it translates to greater social capital in the home country (Kelly and Lusi, 2006). Another explanation is simply that the majority of GC households in the United States are rental, making them especially appealing to lower class minorities and immigrants (Danielsen, 2007).

The importance of the cultural backgrounds of the home countries has also been recognized. In China, for example, Huang (2006:522) views the recent growth of

¹⁸ All three studies used the 2001 AHS dataset.

GCs as a transformation of the GCs traditionally extant as part of “collectivist culture deeply embedded in Chinese society and the tight political control actively [pursued] by the government” and Low (2005) notes that in Latin American countries, walled and gated forms of housing have traditionally been prevalent. Subsequently, Vesselinov *et al.* (2007) supported the findings of Sanchez *et al.* (2005) by finding that in the South and West regions of the United States, Asian and Hispanic residents are more likely to live in GCs than their white and black counterparts. Other authors (Low, 2003; Danielsen, 2007) have also made the connections between coming from a country with a tradition of GCs and living in one upon arrival in the United States. An important part of that tradition of gating often comes from a history of colonization, particularly in Africa and South America.

The disproportionately high representation of foreign born residents in GCs has been documented in other countries such as Trinidad (Mycoo, 2006) and Ghana (Asiedu and Arku, 2009). However, outside of the United States, the foreign born population of GCs is a “transnational elite” which is often tied to multinational corporations (Shamir, 2005). As Webster *et al.* (2002:318) explain, “guarded enclaves are the places in which transnational elites organize their administration, consumption, production, leisure, education and housing.” Thus, we see that in the modern world of globalization, multiple scales need to be considered to understand the creation of GCs.

Postulated Hypotheses

This review of the literature has demonstrated that the creation of GCs is a complex process, constituted by a combination of push and pull factors, acting at multiple scales. Grant and Mittlesteadt (2004:927) posited that as empirical evidence on GCs accumulated, “we will expect to find that some clustering of attributes

occurs.” While it is evident that general trends such as security, the search for community and the lifestyle it provides are contributing factors, these concepts are overly broad and universally applicable. This review of the literature has shown that comparisons of push and pull factors acting inside of GCs with those acting elsewhere are relatively scarce, with differences often assumed but not demonstrated. This gap in the literature will be addressed by testing the first hypothesis:

H₀₁:

The self-reported push and pull factors with regard to reason for moving, choice of home and choice neighborhood will be the same for residents living both inside and outside of gated communities.

H_{A1}:

The self-reported push and pull factors with regard to reason for moving, choice of home and choice neighborhood will be different for residents living inside gated communities than for those living outside of gated communities.

A second gap this review of the literature has demonstrated is in understanding the relationship between the immigrant population and GCs in the United States. The exact numbers and proportions of foreign born residents living in GCs are conflicting and outdated, warranting further examination. How the foreign born population’s rate of gating once inside the United States compares with that of the native born gated population is also unknown. These questions will be addressed specifically by the second and third hypotheses.

H₀₂:

The proportion of foreign born householders inside of American gated communities will be equal to the proportion of foreign born householders living in non-gated American communities.

H_{A2}:

The proportion of foreign born householders inside of American gated communities will *not* be equal to the proportion of foreign born householders living in non-gated American communities.

H₀₃:

The proportion of gated householders in the United States who were born in the United States will be equal to the proportion of gated householders in the United States who were born overseas.

H_{A3}:

The proportion of gated householders in the United States who were born in the United States will *not* be equal to the proportion of gated householders in the United States who were born overseas.

A nativity profile for the gated foreign born population in the United States is also lacking. While racial and ethnic data have been examined to support the importance of historical and cultural influences in the home country in determining the choice of gating upon arrival in the United States, no study has broken apart the gated segment of the foreign born population living in the United States to determine what specific relationships exist between countries of origin and rates of gating once inside the United States. This gap will be addressed by the fourth hypothesis.

H₀₄:

The proportion of gated householders in the United States who were born in a given country will be equal to the proportion of gated householders in the United States who were born overseas in general, for all countries represented.

H_{A4}:

The proportion of gated householders in the United States who were born in a given country will *not* be equal to the proportion of gated householders in the United States who were born overseas in general, for all countries represented.

Finally, an economic profile for the gated segment of the foreign born population inside of the United States is also missing from the literature. In many other countries the foreign born population is disproportionately high inside of GCs, representing the so called ‘transnational elite.’ Whether or not such an elite class

exists inside of the United States is also unknown and will be addressed by the fifth hypothesis.

H_{05} :

The average income of foreign born homeowners living inside of gated communities will be equal to the average income of foreign born homeowners living in non-gated communities inside of the United States.

H_{A5} :

The average income of foreign born homeowners living inside of gated communities will *not* be equal to the average income of foreign born homeowners living in non-gated communities inside of the United States.

The next chapter will discuss the data and methods used to test these five hypotheses.

Chapter 3

DATA AND METHODS

The evidence accumulated via case studies is undoubtedly important to understanding GCs both in the United States and around the world. These studies serve the purpose of providing deep and detailed insights into both the causes and the effects of this relatively new phenomenon. However, the widely recognized uniqueness of each case (Bordsdorf and Hildalgo, 2006; Coggeshall, 2008; Rosen and Razin, 2008; Grant and Rosen, 2009) calls into question the validity of extrapolating the results of such small scale studies to the phenomenon of GCs in general. As such, there is a growing trend in the study of gated communities in the United States to use the nationally representative AHS dataset to gain answers which are otherwise ineffable (Sanchez *et al.*, 2005; Danielsen, 2007; Vesselinov *et al.*, 2007; Vesselinov 2008; Vesselinov and Le Goix, 2009; Warr, 2009).

The American Housing Survey

The American Housing Survey (AHS) is conducted by the United States Department of Housing and Urban Development (HUD), a branch of the United States Census Bureau. The HUD was established as a Cabinet level agency by the Department of Housing and Urban Development Act of 1965¹⁹ and was established to “increase homeownership, support community development and increase access to

¹⁹ See: http://portal.hud.gov/portal/page/portal/HUD/about/hud_history

affordable housing free from discrimination”²⁰. To help achieve this goal, HUD began conducting the AHS in 1973, which is “the primary source for federal government reports and information on housing policy and programs, building technology, economic development, urban planning, and other housing-related topics”²¹.

The AHS is conducted in two parts: at the national level and on a selection of 21 metropolitan areas inside the United States. Between 1973 and 1984, HUD conducted the national AHS on an annual basis but since 1985, the national AHS has been conducted on a biannual basis²², surveying the same 60,000+ households each time. Given the logistics of compiling such a large dataset, there is a lag time of one to two years between data collection and data availability.

In 2001, the AHS was expanded to include 40 additional questions, three of which were concerned with access to communities and one specifically asking about the gated status of communities – “Is your community surrounded by walls or fences preventing access by persons other than residents?” This question is of fundamental importance to answer the research questions posed by this thesis.

The 2001 AHS marked the creation of the first nationally representative dataset to separate households in gated communities from those located elsewhere in the United States. Since then, several researchers have used the AHS dataset to study broad trends in American GCs with groundbreaking results due to the comprehensive

²⁰ See: <http://portal.hud.gov/portal/page/portal/HUD/about/mission>

²¹ See: <http://www.huduser.org/about/pdrabout.html>

²² The metro AHS is conducted every six years. See page 7 of: <http://www.huduser.org/Datasets/datasets06.pdf>

nature of the data (Sanchez and Lang, 2002; Sanchez *et al.*, 2005; Danielsen, 2007; Vesselinov *et al.*, 2007; Vesselinov, 2008; Vesselinov and Le Goix, 2009; Warr, 2009).

Establishment of Precedence

Studies by Sanchez and Lang (2002) and Sanchez *et al.* (2005) were the first to examine the AHS dataset to gain insights into GCS and provide definitive figures of their prevalence. Prior to the AHS, the highest valuations had estimated that twelve percent of the American populace lived inside GCs. But these studies by Sanchez and colleagues used the AHS to show that the actual number was below six percent. They further dispelled the popular notion that GCs were strictly the domain of the white and the wealthy by finding a prevalence of rental GCs and the minority populations they attracted. Sanchez *et al.* (2005) noted that one of the shortcomings of the AHS was that its nascent nature of data on GCs precluded a study of changes over time.

Because the AHS is conducted biannually, a time series analysis soon became viable and Danielsen (2007) took advantage of this by comparing the data from the 2001, 2003, and 2005 American Housing Surveys. She used those data to examine trends in tenure, finding that while the number of owned GC housing units was decreasing, the total number of GCs was increasing due to a growing trend of rental GCs.

Other examples of the use of using the AHS dataset to study gated communities include Vesselinov *et al.* (2007) who used data from the AHS to show that GCs can introduce a new source of segregation. Vesselinov (2008) further examined this segregation and proved a link between immigration and an increased

propensity to live in GCs. Vesselinov and Le Goix (2009) then confirmed Romig's (2005) position that gating can be a response to the increasing heterogeneity of the suburbs. Warr (2009) similarly used the AHS data to demonstrate the magnitude of this phenomenon.

This thesis builds upon the work of Vesselinov and colleagues. The main advantage of using the AHS is that it is nationally representative. As such, these data are ideal for questions relating to the broader trends of why people choose to live in GCs. The major drawback of these data is that while they are believed by the Census Bureau to be nationally representative, they are not based on a total enumeration. Instead, an average of only about 60,000 households (see below) are surveyed and the Census Bureau assigns weights to each case dependent upon how many households that case represents, based on analysis using data from the previous full census. The same households are generally surveyed each collection period²³.

The 2007 AHS national dataset will be used for analysis in this thesis²⁴. Unfortunately, the 2009 dataset will not be available until summer of 2010 due to the delay between data acquisition and publication.

Subsets of the AHS Dataset

The 2007 AHS is comprised of seven subsets of data, divided by the types of information they contain. The smallest subset, 'mover information' (containing only 12,538 cases) reports such information as the kind of unit (condominium, apartment, house, *etc.*), the respondent's previous residence, and how many people

²³ See: <http://www.census.gov/hhes/www/housing/ahs/datacollection.html>

²⁴ Downloaded from the HUD user website, <http://www.huduser.org/portal/datasets/ahs/ahsdata07.html>.

lived there. The ‘mortgage’ subset (containing 17,098 cases) reports mortgage information such as interest rates and when the mortgage was obtained. The ‘home improvement’ subset (containing 43,334 cases) reports who performed the household alteration or repair and what the nature of that alteration was, if a household improvement was made.

The ‘journey to work’ subset (containing 43,925 cases) reports information such as the distance and time the respondent travels to work, the kind of vehicle used for the commute, and how many hours (if any) are worked at home. The ‘owner’ subset (comprising 14,857 cases) contains only one variable and reports whether or not the owner of a rental household lives on site. The largest number of observations (98,329) is contained within the ‘person’ subset which reports basic demographic information on the individual respondent. This subset is the largest because whereas some of the subsets have limited applicability (*e.g.*, home improvements may not have been made every two years), every completed observation has a resident.

The largest number of variables is contained in the subset ‘newhouse’ (comprising 65,419 cases) which also contains all of the variables necessary to test the hypotheses examined in this thesis. This subset was created in 2001 when three previously extant subsets were combined²⁵ and contains a wide range of information concerning neighborhood and household characteristics.

All told, these datasets consist of 887²⁶ variables, though not all variables are made available to the general public in the public use file. There are an additional

²⁵ For more information on these subsets, see the 2007 AHS Codebook (2009) pp. 7-8.

²⁶ The “CONTROL” variable contains a unique ID number for each observation and is present in all seven subsets. CONTROL is used primarily for merging different sets together.

410 variables, the ‘J series’, which serve as edit flags denoting which of the 887 variables have had edits made to some of its observations.

Edits to the AHS Observations

Edits to the AHS observations generally are either ‘hot-decking’ or ‘topcoding’. Hot-decking is a process “in which a missing value is replaced with the last value for that variable for a unit with the same selected characteristics” (2007 AHS Codebook, 2009:816); that is, a nearest neighbor cluster analysis is performed based on an ‘allocation matrix’. The missing value is then replaced by the present value of the nearest neighbor, based on p dimensional space as defined by that matrix, where p is the number of variables in that matrix. Because these are not actual observations, their validity is questionable and as a matter of course, all observations that have been ‘hot-decked’ shall be excluded from analysis in this thesis.

Topcoding (and less frequently, ‘bottomcoding’) is a process designed to protect the confidentiality of respondents reporting at either extreme of a given variable. For example, high and low income levels are usually masked by topcoding and bottomcoding. Above a certain percentile (dependent on the variable, but generally above the 97.5th percentile), all values are averaged and the resultant mean replaces the value for each observation. In this way, the exact figures are masked, which could potentially identify a household, but the overall average is maintained (2007 AHS Codebook, 2009). Topcoding and bottomcoding does not present a major problem for our purposes because general trends such as means are maintained.

It is understood that the issue stemming from topcoding is that assigning the same values to all cases at either extreme of the sample population effectively shrinks the standard error and will likely result in an underestimation of variance. This

requires that extra caution be exercised in the interpretation of results, because an underestimation of variance makes an erroneous assertion of statistically significant differences more likely. However, this does not present a major issue because by definition, very few cases are affected by this process. Furthermore, statistical tests exist (see below) to be used specifically when variances are unknown.

Non-interview and zero-weighted observations are also excluded. Non-interviews are denoted specifically in the AHS dataset and occur, for example, when the owner is repeatedly absent or outright refuses to participate in the survey. Zero-weighted observations also are clearly denoted in the AHS dataset and occur when the unit is vacant or is not the primary residence of the occupant, as is the case with tents and boats, for example (2007 AHS Codebook, 2009).

Data Selection from the AHS Dataset

Hypothesis # 1

While several empirical studies have examined the rationale of GC residents for choosing their communities both in the United States (Blakey and Snyder, 1997; Low, 2003; Romig 2005; Coggeshall, 2008) and abroad (Mycoo, 2006; Lemanski, 2006, Alvarez-Rivadulla, 2007; Bordsdorf and Hildalgo, 2008; Durlington, 2009) the push and pull factors (safety, status, community, *etc.*) identified in these studies are universally applicable. Few studies exist that compare the push and pull factors between inside and outside gates to determine if there are differences. Given Grant and Mittlesteadt's (2004) assertion that a clustering of attributes unique to gated communities would become manifest with more data, it is of interest to determine if, at

the national level, a *different* combination of push and pull factors is acting in the creation of GCs as opposed to non-gated communities inside the United States.

The first variable needed to test this hypothesis denotes the gated or non-gated status of the community from which an observation was taken. This ‘gated’ variable is a binary measure but has several possible values such as “not applicable,” for example, occurring when a previous answer has disqualified ‘gated’ from being asked. As such, positive responses to the question are coded as 1 and all other responses, directly or indirectly negative, are coded as 0. The second variable needed denotes the weight of the cases, or the number of households the Census Bureau believes a given case to represent. This variable is used both to assign weights to the observations during analysis and to exclude zero-weighted observations.

The final three variables required to test the first hypothesis contain the information pertaining to why the respondent moved in general and why they chose that particular neighborhood and household respectively. Each of these variables contains several possible outcomes as listed in Table 3.1 and Table 3.2. All observations with missing values on any of these variables are removed because they are in a different context than the ‘gated’ variable. People have moved for some reason and because these variables are not binary, a null value (e.g., not gated) cannot be assumed. After this refinement of the dataset, 465 observations, weighted by the Census Bureau to equal 1,354,631 households were retained. A canonical discriminant function analysis (DFA) will be performed to test the first hypothesis.

Discriminant Function Analysis

Discriminant function analysis (DFA) refers to a suite of related statistical techniques which use a combination of discriminating variables (DV) to separate at

least two mutually exclusive and naturally occurring groups²⁷. Because the DV drive group membership, DFA is essentially the opposite of MANOVA, wherein group membership drives the values of the variables (Klecka, 1980). In this case, the DV are the reported reasons for moving and the two ‘naturally’ occurring groups are gated and non-gated communities.

Discriminant function analysis is generally conducted either for the purposes of interpretation or classification. Classification is the process of using the profiles defined in the interpretation step to predict group membership. This analysis is an interpretation, which is the process of identifying differences between groups based on p , a number of DV which are measured at the interval ratio level (Klecka, 1980). Because the numeric values of the variables being considered are not actual interval ratio data, a new ‘dummy’ variable was created for each possible outcome using the binary system of 0 for no and 1 for yes responses (Huberty and Olejnik, 2006).

A researcher can have any number, p , of DV so long as there are fewer DV than the total number of observations minus two (*i.e.*, $p \leq n-2$). No discriminating variable can be a linear combination of other discriminating variables, nor can any two DV be perfectly correlated (Klecka, 1980). In the case of canonical discriminate function analysis, a linear combination of the discriminating variables is used to create a canonical function (f_{km}) given by the equation:

$$f_{1km} = u_0 + u_1X_{1km} + u_2X_{2km} + \dots + u_pX_{pkm} \quad (3.1)$$

²⁷ This technique was first proposed by R.A. Fisher in 1936.

where u_0 is an error term unique to the function, $X_{1km}, X_{2km}, \dots, X_{pkm}$ are discriminating variables and $u_1, u_2, \dots, u_p$ are coefficients derived so as to maximize the variance between groups and minimize the variance within groups (Klecka, 1980). Statistical significance is given by the F -ratio of M_B/M_W where M_B is the mean square of variance between groups and M_W is the mean square of variance within groups (Manly, 2005). Every function after the first is also derived so as to maximize the F -ratio with the additional criterion that it is uncorrelated with all previous functions (Klecka, 1980).

Depending on the dataset, many functions, q , can be derived up to whichever is the lesser of two bounds: the number of DV (p) or the number of groups, g , minus one (Manly, 2005). Because only two groups are being considered in this analysis, only one function will be derived (*i.e.*, $q=1$). Below the upward bounds of how many functions *can* be derived, there is the question of how many functions *should* be derived so as to keep the functions meaningful.

Because DFA is hierarchical, the first function will explain more variance than the second function, and subsequent functions will explain less and less variance as denoted by the shrinking eigenvalue, λ . The sum of all eigenvalues of the functions derived equals 100% and the ratio of each eigenvalue to the total sum defines the relative importance of a given function. When the i th function is found to have relatively weak explanatory power it should be discarded (Klecka, 1980).

The eigenvalues can also be used to calculate Wilk's lambda, λ . Wilk's lambda is an inverse measure of group differences over several DV, with values closer to zero denoting greater separation between groups along the DV being considered. Wilk's lambda is useful in determining both the individual and combined value of the derived functions. Wilk's lambda ranges from 0 to 1 and is given by the equation:

$$\Lambda = \prod_{i=k+1}^q \left(\frac{1}{1 + \lambda_i} \right) \quad (3.2)$$

where k is the number of functions already derived, q denotes that q terms (one for each function) will be multiplied, and λ_i is the i th function's eigenvalue. In this case, Λ simply equals $(1/[1 + \lambda_1])$ because only function can be derived. To test the significance of Wilk's lambda, a chi-square or F -test is compared to a standard table. That, in turn, gives the significance level, which is a concrete measure of a function's utility and whether or not it should be kept (Klecka, 1980).

The representation of each function is given by the structure coefficients, which are the product-moment correlations between the DV and the functions to which they contribute (Klecka, 1980). Structure coefficients range from -1 to 1 with absolute magnitude denoting the relationship between the functions and the variables. If a strong relationship is revealed then direction (positive or negative) is used to determine if that relationship is direct or inverse. Ideally, each function will be strongly correlated (greater than 0.7) with a subset of DV which are weakly correlated (less than 0.3) with the other functions. This not only reveals which DV are the most effective at discriminating between groups, but also allows the researcher to understand what it is that the function or functions represent.

If no such 'simple structure' exists, then the utility of the results is questionable, as some combination of several DV can almost always be found to discriminate between groups without actually being meaningful (Huberty and Olejnik, 2006). Because only one function will be derived, only some of the DV being considered should be strongly correlated with that function. In this way, the present analysis will determine whether or not a combination of push and pull factors is

effective at discriminating between the residents of gated and non-gated communities, as predicted by Grant and Mittlesteadt (2004).

Discriminant function analysis assumes equal covariance matrices for each group and a multivariate normal distribution on the variables being considered in the population from which those groups have been drawn (Klecka, 1980). A multivariate normal distribution is generally assumed unless there is reason to believe otherwise, and treated as being the combined normal distributions of the individual variables (Manly, 2005). Because the data used in this analysis are collected by the United States Census Bureau to maximize the accuracy of their representation of the population, it will be assumed that these assumptions are met.

An attempt to answer a similar question was made by Sanchez *et al.* (2005) which performed a discriminant function analysis (DFA) using 34 variables from the 2001 (AHS). That study sought to identify the differences between the four groups of gated and non-gated owners and renters. While the descriptive statistics performed in that study are invaluable, the interpretations of that study's DFA are questionable because the largest structure coefficient between any DV and a function was only 0.38, with all others being under 0.35. Their treatment of variables was also questionable because only one of the binary variables being considered (marital status) was noted as such, with no mention being made of other binary variables such as gender (see page 289 of Sanchez *et al.*, 2005). Although the present study employs a similar methodology, a different set of variables is being used to discriminate between two groups instead of four.

Table 3.1 Possible Primary Reasons For Resident's Choice of Home and Neighborhood

WHYTON	WHYTOH
Main reason this neighborhood was chosen	Main reason this unit was chosen
1 Convenient to job	1 Financial reasons
2 Convenient to friends or relatives	2 Room layout/design
3 Convenient to leisure activities	3 Kitchen
4 Convenient to public transportation	4 Size
5 Good schools	5 Exterior appearance
6 Other public services	6 Yard/trees/view
7 Looks/design of neighborhood	7 Quality of construction
8 House was an important consideration	8 Only one available
9 Other	9 Other-SPECIFY
0 All reasons equal	0 All reasons equal
B Not applicable	B Not applicable
D Don't Know	D Don't Know
R Refused	(See: 2007: AHS Codebook:731-2).

Table 3.2 Possible Primary Reasons for Resident's Decision to Move in General.

WHYMOVE	
Main reason moved	10 Other, family/personal related
0 All reasons of equal importance	11 Wanted a better quality house (apartment)
1 Private company or person wanted to use it	12 Change from owner to renter OR renter to owner
2 Forced to leave by the government	13 Wanted lower rent or less expensive house to maintain
3 Disaster loss (fire, flood, etc.)	14 Other housing related reasons
4 New job or job transfer	15 Other - Specify (Prior to 2005)
5 To be closer to work/school/other	15 Evicted from residence (2005 onwards)
6 Other, financial/employment related	16 Other – Specify (2005 onwards)
7 To establish own household	B Not applicable
8 Needed a larger house or apartment	. Not reported
9 Married, widowed, divorced, or separated	(See: 2007 AHS Codebook:729).

Hypothesis # 2

Given the conflicting and somewhat dated nature of the data regarding the proportion of foreign born residents inside of gated communities in the United States, an assessment of the actual proportion for the nation as a whole is warranted. Answering this hypothesis will help elucidate the nature of the relationship between immigrants and GCs in the United States.

A disproportionately high representation of the foreign born population will indicate that immigrants are directly contributing to the rise of GCs in the United States by creating and perpetuating demand (Sanchez *et al.*, 2005; Vesselinov *et al.*, 2007). Conversely, a disproportionately low representation of the foreign born population will indicate that immigrants are indirectly contributing to the creation of ‘Fortress America’ by acting as a push factor (Low, 2005; Vesselinov, 2008; Vesselinov and Le Goix, 2009).

To test this hypothesis, the variable concerning the nativity, or country of birth of the householder, is required. This variable is refined into a new variable with two possible outcomes: native born (born inside the United States) and foreign born (born outside the United States). For this variable, observations reporting ‘not applicable’ are assumed to be native. The variables concerning weight and gated status are also required. When all edited observations are removed, a total of 46,275 observations remain. Of these, 40,426 are native and 5,849 are foreign. Combined, the Census Bureau weighted these observations to represent over 127 million households. A two sample difference of proportions Z-test will be performed to test this hypothesis.

Two Sample Difference of Proportions Z-Test

The two sample difference of proportions Z-test is a statistical technique used to test the significance of differences in the proportions of positive responses in a binary variable between two sample populations (McGrew and Monroe, 2000). In this case, the binary variable being examined is the ‘nativity’ of householders and the positive response or category of interest is ‘foreign’. The two sample populations are gated and non-gated community residents respectively. The Z statistic is given by the equation:

$$Z_p = \frac{p_1 - p_2}{\sqrt{\hat{p}(1 - \hat{p})\left(\frac{n_1 + n_2}{n_1 n_2}\right)}} \quad (3.3)$$

where P_1 is the proportion of positive responses in the first population, P_2 is the proportion of positive responses in the second population, and the denominator is the standard error of the difference (McGrew and Monroe, 2000). The larger the absolute value of Z, the stronger the signal.

Hypothesis # 3

A prominent vein of research on GCs in the United States is concerned with unraveling why it is that *Americans* are fearful and thus inclined to live in GCs (see, for example, Blakey and Snyder, 1997; Low, 2003; Romig, 2005; Coggeshall, 2008; Warr, 2009) in spite of the relative safety and stability they enjoy. However, before the claims of a bifurcating society (Low, 2008a) should be accepted, the frequency of gating by the native born American population must be compared to the frequency of gating by those who were born in other societies. In this way, insight can be gained into the relative significance of American rates of gating.

On the one hand, if Americans are found to gate more frequently than immigrants, in spite of the ‘bad way’ in which moving to a new country often puts

immigrants (Shamir, 2005; Herbert, 2009) then this would support the notion that American society is becoming fractured. On the other hand, if native born Americans are found to have a relatively low rate of gating when compared to another population (in this case the foreign born population living in the United States) then claims of an emerging “Fortress America” (Blakey and Snyder, 1997) will be further called into question.

To test hypothesis #3 the same observations and variables needed to test hypothesis #2 are required and the same statistical test will be conducted. However, in this case, the binary variable of interest is ‘gated’ and the two sample populations are native and foreign born householders respectively.

Hypothesis # 4

Following from the third hypothesis it becomes of interest to compare the total gated foreign born population living in the United States to the rates of gated residents coming from each of the countries contributing to that total. Racial and ethnic data have been examined to support the importance of historical and cultural influences in the home country in determining whether or not an immigrant will gate upon arrival in the United States (Danielsen, 2007; Vesselinov *et al.*, 2007). However, no study has broken apart the gated segment of the foreign born population living in the United States to determine which countries’ residents are more or less likely to gate upon arrival in the United States and to determine if regional trends exist regarding gating preferences.

In this way, preliminary insights will be gained into what role if any is played by the historical and cultural factors of an immigrant’s country of origin in that immigrant’s decision to move to a GC once inside the United States. If the rate of

gating for a given country of origin differs significantly from the average rate of gating for *all* countries of origin, then it can be inferred that the decision to gate upon arrival in the United States is influenced by the country of origin. Conversely, if the proportions of each of the individual countries equal the average proportion of all of the overseas countries, then it would seem that gating upon arrival in the United States is purely a function of coming to the United States (or moving to a new country in general) with country of origin having no influence.

To test the fourth hypothesis the same observations and variables used to test the second and third hypotheses are again employed. In this case, the ‘nativity’ variable is dissembled, with each possible country or region of origin being turned into its own variable (see Table 3.3). In this way, the proportion of gated householders in the United States who were born in a given country can be compared to the total proportion of foreign born gated householders in the United States. To accomplish this, the same two sample difference of proportions Z-test discussed above will be conducted for each country of origin represented in this dataset.

Table 3.3 Countries and Regions of Origin Represented in the AHS.²⁸

HHNATVTY :	Householder country of birth		
57 United States	72 Puerto Rico	96 Outlying U.S.	109 France
110 Germany	117 Hungary	119 Ireland/Eire	120 Italy
128 Poland	147 Yugoslavia	185 Armenia	192 Russia
195 Ukraine	202 Bangladesh	206 Cambodia	207 China
209 Hong Kong	210 India	211 Indonesia	212 Iran
213 Iraq	214 Israel	215 Japan	218 N/S Korea
221 Laos	222 Lebanon	229 Pakistan	231 Philippines
238 Taiwan	239 Thailand	242 Vietnam	301 Canada
311 Costa Rica	312 El Salvador	313 Guatemala	314 Honduras
315 Mexico	316 Nicaragua	337 Cuba	339 Dom. Republic

²⁸ Numbers shown next to country names are ID numbers used by the AHS.

Table 3.3 Continued

342 Haiti	343 Jamaica	351 Trinidad and Tobago	375 Argentina
377 Brazil	379 Colombia	380 Ecuador	383 Guyana
385 Peru	440 Nigeria	555 Elsewhere	610 Other North and Central America
611 Other Caribbean	620 Other South America	640 Other Africa	641 North Africa
650 Other Europe	651 Portugal with Azores	652 Great Britain	653 Scandinavia
654 Other Northern Europe	660 Other Asia	661 Other Middle East	670 Australia/Oceania

Hypothesis # 5

Although Sanchez *et al.* (2005) found that minority residents inside of United States GCs are more likely to be renters than owners, the existence of a gated transnational elite in other countries such as Trinidad (Mycoo, 2006) and Ghana (Asiedu and Arku, 2009) raises the question of whether or not such an elite exists inside of the United States. It is reasonable to expect that members of this elite would own their homes rather than rent them. To test this hypothesis, the foreign born gated population is filtered by ‘tenure’ with only those observations reporting owner status (as opposed to renter) being retained. The variable containing household income was also needed. The removal of edited and non-owner observations leaves 2,673 weighted to represent 7,491,811 households by the Census Bureau. To test this hypothesis, a two sample difference of means *t*-test will be performed.

Two Sample Difference of Means t-Test

A two sample difference of means test is used to determine whether or not the mean value of a variable measured at the interval ratio scale differs significantly between two normally distributed sample populations (McGrew and Monroe, 2000). In this case, the variable being measured is household income and the two sample

populations are foreign born homeowners living inside American GCs and foreign born homeowners living in non-gated communities inside the United States, respectively.

Although the un-weighted samples both exceed 30 observations, the population variances are unknown because they have been obscured by ‘top-coding’. As such, the t statistic is calculated as

$$t = \frac{\overline{X_1} - \overline{X_2}}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}} \quad (3.4)$$

where X_1 and X_2 are the observed means for the two samples and $X_1 - X_2$ is the observed difference between these means. Because the population variances are unknown, in this case the denominator is an estimate of what the expected standard error of the difference between the means would be if the samples were drawn from the same population. As such, a large t statistic, whether positive or negative, represents a greater difference than can be expected by chance (McGrew and Monroe, 2000). If the population variances were known, then the stronger Z -statistic could be calculated in a similar way, but with the denominator being the actual standard error of the difference between means.

Chapter 4

RESULTS AND DISCUSSION

The first of the five hypotheses examined in this thesis is concerned with overall differences between those living inside of GCs and those living elsewhere in the United States. The remaining four hypotheses seek to further the understanding of the relationship between GCs and the immigrant population of the U.S. The results of the statistical techniques used to test these hypotheses and discussion of their subsequent rejection or acceptance are given in this chapter.

Hypothesis # 1

The first null hypothesis posits that a combination of self reported push and pull factors would be ineffective at discriminating between the naturally occurring groups of gated and non-gated community residents. Using the weights assigned to the 465 observations, the F -ratio of the mean square of variance between groups and the mean square of variance within groups (M_B/M_W) is equal to 1.78, and is significant at the 0.005 level. The Wilk's lambda value calculated for this DFA is equal to 0.876.

These results show that there is a statistically significant difference between the reasons residents of gated and non-gated communities have for moving in general and choosing their neighborhood and home in particular. However, while these results are statistically significant, the large Wilk's lambda value indicates that the group centroids (mean values on all DV) are proximal and the function derived in this analysis is relatively ineffective at discriminating between the two groups.

Furthermore, the structure coefficients given in Table 4.1 reveal a weak relationship between the function and the discriminant variables (DV) from which it was derived. Ideally, a function will be strongly correlated with, or ‘load’ strongly on, several DV and in that manner make some latent characteristic contained in those DV discernable. Effectively, that latent characteristic is what sets the groups apart.

In this case, the strongest correlation between the function and any DV has a magnitude of 0.50, followed by 0.32, with all others being below 0.28. As such, the function does not represent a latent characteristic which separates the groups, but rather is only significant because there are so many variables contributing small amounts of discrimination (Huberty and Olejnik, 2006). Thus, even if Wilk’s lambda was close to zero, the meaning of the function would be difficult to interpret and the results would still lack meaning.

These results support the conclusions of Lemanski and Oldfield (2008) by indicating that residents living in GCs are effectively looking for the same qualities in home and neighborhood as residents living in other types of communities. While the residents of GCs are looking for “a nice house, with nice neighbors, in a nice neighborhood” (Low, 2009:90), these results indicate that so is everyone else. Furthermore, the same reasons for moving in the first place seem to be acting within both groups. These results undermine Grant and Mittlesteadt’s (2004) postulation that a clustering of attributes unique to GCs would become apparent with more data.

Despite the number of observations which had to be excluded from this analysis due to missing or edited values, these results should be considered highly reliable because the sample considered is weighted to equal 1,354,631 households. To determine if these results were generated only because of the weights assigned to the

observations by the Census Bureau, the same analysis was conducted treating the 465 actual observations as a random sample. This did not change the outcome of the analysis in any meaningful way, though the significance was slightly increased. The F -ratio produced using the raw weight is 1.86 and is significant at the 0.0028 level. Wilk's lambda changed from 0.876 to 0.871. This similarity further strengthens these findings by showing the same trend regardless of using a weighted or simple random sample.

The variables considered in this case were the residents' reasons for moving, in general, and choosing their home and neighborhood, in particular. While this is useful in determining if a different set of push and pull factors is acting on the residents of GCs than on those living elsewhere, the number of possible responses is limited and could fail to allow for other outcomes which are better at separating the groups. That being said, the logistics of tabulating answers to open ended questions precludes their use in a national survey. As such, the present analysis and all others concerned with national trends will always have this potential shortcoming. Similar tests should be used in future studies to determine if a different set of variables can effectively discriminate between the residents of gated and non-gated communities in a way that is both significant *and* meaningful.

Table 4.1 Structure Coefficients Giving Strength of the Relationship Between the Function and Discriminating Variables

-0.505555	Chose unit for quality of construction
-0.323774	Moved to establish own household
-0.2779	Moved for other family personal related reasons
-0.199695	Chose unit for other reasons
-0.187027	Chose neighborhood because convenient to public transportation
-0.17273	Moved for other financial or employment related reasons
-0.156641	Chose unit for its size
-0.119944	Chose neighborhood because of its looks or design
-0.061076	All reasons were equal in choice of neighborhood
-0.050173	House was an important consideration in choice of neighborhood
-0.049721	Chose unit for yard, trees, view
-0.038499	Chose unit for financial reasons
-0.01776	Moved for other housing related reasons
-0.016803	Moved because recently married, widowed, divorced or separated
-0.005367	Moved because wanted lower rent or less expensive house
-0.002803	Moved because needed a larger house or apartment
0.006761	Chose unit for exterior appearance
0.03001	Chose neighborhood for other reasons
0.03476	Moved because forced to leave by the government
0.046201	Moved for other reasons
0.057837	Chose neighborhood because of other good public services
0.060465	Chose neighborhood because convenient to leisure activities
0.060798	All reasons are equal in decision to move
0.067166	Chose neighborhood because convenient to job
0.069328	Moved because private company or person wanted to use residence
0.077516	Chose unit for its kitchen
0.089577	Chose neighborhood because convenient to friends or relatives
0.10539	All reasons equal in choice of unit
0.118708	Chose unit because only one available
0.120679	Moved because wanted a better quality house or apt
0.168811	Moved because of new job or job transfer
0.186483	Chose unit for room layout or design
0.205595	Moved to change from owner to renter or vice versa
0.214771	Moved to be closer to work, school, or other
0.241033	Chose neighborhood because of good schools

Hypothesis # 2

The second hypothesis posited that householders born outside of the United States would be disproportionately represented in GCs. Using the weighted values, 13.22% of householders living in non-gated communities were found to have been born outside of the country. Conversely, inside of GCs, the foreign born were found to constitute 25.05% of householders. The two sample difference of proportions Z-test used to examine the significance of this difference yielded a Z value of 1,235, which is extremely significant ($p < 0.0001$). This Z value is the result of the weighted observations being equal to over 127 million households. Treating the raw observations (in this case totaling 46,275) as a random sample again yielded similar results. In non-gated communities in the United States, 11.54% of householders were found to have been born overseas, whereas inside of GCs that number jumps to 25.26%. This yielded a Z value of 24.08, which is also significant beyond the 0.0001 level.

It is important to note that given the large sample size used in this study, even a small difference in the sizes of the proportions would have yielded statistically significant results. But more important than the statistical significance of these findings is their practical significance and the real world implications they have. If differences of this magnitude (1:2) exist at the population level (as these nationally representative data suggest they do) then it is obvious that immigrants play a much greater role in the creation of GCs than they do in the creation of non-gated communities in the United States. Thus, while immigrants may in part be contributing to the rise of GCs in the United States by acting as a push factor (Low, 2005; Vesselinov, 2008; Sanchez, 2009), they are more directly contributing by choosing to

live behind the gates themselves. These results are especially interesting because they demonstrate that the ‘United States Model’ of gated community which is reportedly proliferating around the globe (Bodnar and Molnar, 2009) is, in large part, shaped by immigrants.

These results confirm that while in some metropolitan areas of the United States the foreign born population is smaller inside of GCs than in the surrounding areas (Vesselinov and Le Goix, 2009), this is not always the case (Sanchez *et al.*, 2005; Vesselinov *et al.*, 2007). By providing definitive numbers at the national scale, this analysis of the most recent AHS dataset demonstrates that as of 2007, over a quarter of the households in Blakey and Snyder’s (1997) ‘Fortress America’ are headed by persons who were born outside of the country.

A shortcoming of this analysis is its lack of a temporal component. For example, comparing the age of housing unit to the year the householder arrived in the United States. This information is also contained in the AHS dataset and can be the focus of future studies. The rates of gating by foreign and native born householders are compared in the third hypothesis.

Hypothesis # 3

The third hypothesis posited that in the United States, the proportion of the foreign born population living in GCs would be greater than the proportion of the native born population. Using the weighted values of the observations showed that in the United States, 6.95% of households headed by native born persons are in GCs, as opposed to 15.89 % of households headed by foreign born persons. The Z-statistic generated by the two sample difference of proportions test is again huge, at 1,233, which is significant beyond the 0.0001 level. Again, more important than the

statistical significance of these findings is their practical significance. The fact that householders born overseas are more than twice as likely to live in GCs as are native born American householders demonstrates that actual, significant differences in housing preferences exist between these two populations.

Treating the raw 46,275 observations as a random sample produced similar results, with 15.97% of the foreign born population gated as opposed to 6.83 % of the native born population. The Z-statistic for the raw analysis is 20.08, and is also significant beyond the 0.0001 level. Thus, for the nation as a whole, householders born overseas are more than twice as likely to live in GCs once inside of the United States as are householders who are native born. These results indicate that although GCs are a growing phenomenon inside of the United States, claims of a fracturing American society (see for example, Low, 2008a) are premature (Cameron, 2007), as demonstrated by the fact that Americans actually have a relatively low rate of gating.

A major factor likely contributing to this disproportionately high representation of the foreign born population behind the gates is that the majority of GC units are rental, making them more practical for the lower classes of which immigrants are often part (Blomley, 2005; Danielsen, 2007). The exclusionary nature of the gates can also serve as a status symbol in lieu of ownership (Blomley, 2005; Vesselinov, 2008).

Status can be especially important to immigrants for the sake of escaping the stigma of immigration (Shamir, 2005; Herbert, 2009) which has reportedly increased since the terrorist attacks of 9/11 (Ehrkamp and Leitner, 2006). Furthermore, symbols of status and 'success' abroad can result in greater social capital in an immigrant's home country (Kelly and Lusic, 2006). However, the importance of

the history and culture of the home country with regard to GCs has also been noted by such authors as Glasze and Alkhayyal (2002) Low (2003, 2005) Huang (2006) Danielsen (2007).

Hypothesis # 4

Towards unraveling the relationship between an immigrant's country of origin and their decision to live in a GC once inside of the United States, the gated proportion of each country's population living in the United States is compared to the total proportion of foreign born GC residents. For these analyses, the raw observations were not considered because breaking the >5000 raw observations into the 64 possible places of origin resulted in some countries (*e.g.*, Costa Rica) having sample sizes too small to be meaningfully analyzed. Map 4.1 shows the percentages immigrants living in GCs in the United States by country of origin. The results of the differences of proportions Z tests are given in Table 4.2 and shown in Map 4.2. These proportions were also compared to that of the United States to test for the significance of those differences. The second set of results is given in Table 4.3 and shown in Map 4.3.

While the third hypothesis showed that overall, immigrants are more likely to gate than are residents who were born in the United States, these results clearly demonstrate that an immigrant's decision to move to a GC once inside the United States is highly dependent on their country of origin. As hypothesized, immigrants originating in countries with colonial histories (as in South America) or collectivist cultures (as in Asian and Arab countries) tend to have a higher rate of gating once inside the United States than do immigrants coming from countries with no such history as in most of Europe.

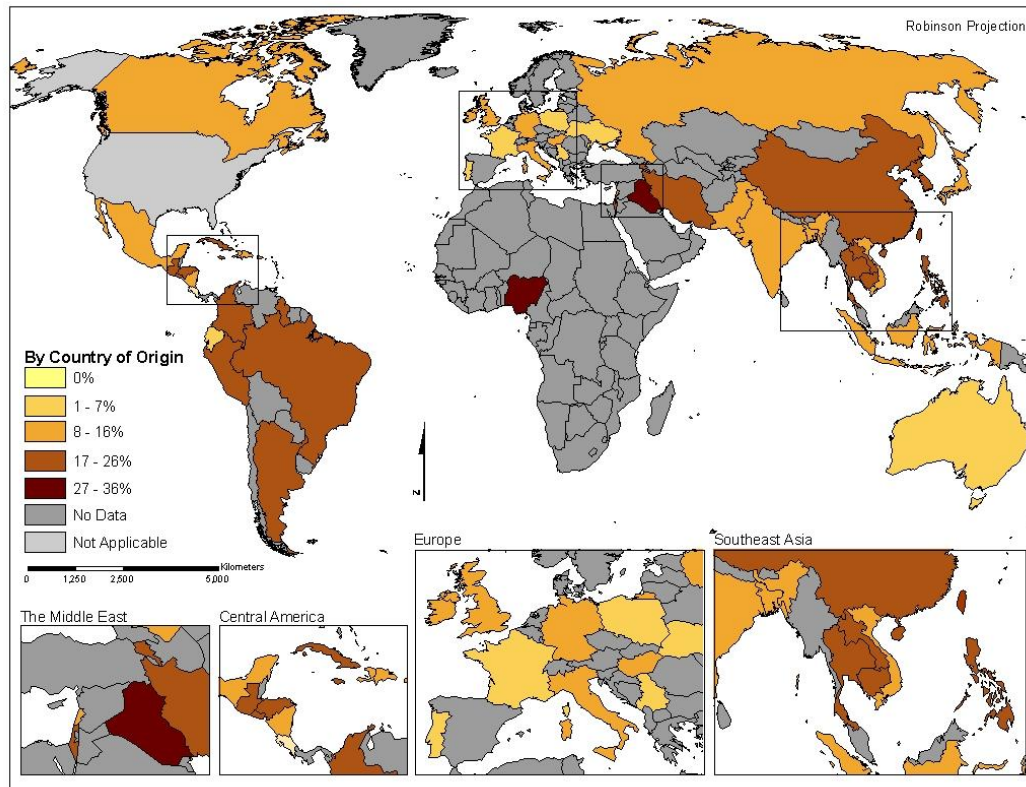
Table 4.2 Percent Gated by Country of Orgigin Versus Total Foreign Born Average

Weighted Households					
	Total	Gated	Proportion as (%)	Z-Statistic	Significance Level
Foreign Born	16,250,000	2,583,503	15.90		
Argentina	73,297	18,125	24.73	135	0
Armenia	40,163	8,198	20.41	91	0
Australia	46,332	2,615	5.64	51	0
Bangladesh	61,053	9,860	16.15	99	0
Brazil	82,268	21,458	26.08	146	0
Cambodia	54,306	10,765	19.82	104	0
Canada	381,301	48,836	12.81	221	0
China	445,998	107,640	24.13	328	0
Colombia	214,122	53,038	24.77	230	0
Costa Rica	19,960	0	0.00	0	0
Cuba	347,261	64,771	18.65	255	0
Dominican Republic	121,362	17,297	14.25	132	4.86
Ecuador	61,991	2,987	4.82	55	0
El Salvador	239,322	55,115	23.03	235	0
France	63,433	2,953	4.66	54	0
Germany	490,165	68,613	14.00	262	0
Great Britain	355,382	43,170	12.15	208	0
Guatemala	129,868	28,897	22.25	170	0
Guyana	55,988	9,777	17.46	99	5.46
Haiti	174,732	23,457	13.42	153	0
Honduras	102,212	25,909	25.35	161	0
Hong Kong	53,410	19,096	35.75	138	0
Hungary	64,693	5,721	8.84	76	0
India	589,513	89,396	15.16	299	7.72
Indonesia	33,583	2,639	7.86	51	0
Iran	119,840	26,518	22.13	163	0
Iraq	33,749	12,304	36.46	111	0
Ireland	76,412	8,234	10.78	91	0
Israel	56,637	10,909	19.26	104	0
Italy	165,427	16,281	9.84	128	0
Jamaica	180,419	31,324	17.36	177	4.69
Japan	144,782	18,794	12.98	137	0
Laos	57,671	9,567	16.59	98	6
Lebanon	54,027	8,816	16.32	94	0.007
Mexico	2,819,599	434,605	15.41	659	3.87
Nicaragua	64,138	10,056	15.68	100	0.128
Nigeria	86,457	29,734	34.39	172	0

Table 4.2 Continued

Korea (N/S)	351,801	84,646	24.06	291	0
Pakistan	70,124	7,614	10.86	87	0
Peru	91,379	18,249	19.97	135	0
Philippines	546,227	100,155	18.34	316	0
Poland	210,286	14,482	6.89	120	0
Portugal	81,480	2,685	3.30	52	0
Puerto Rico	433,229	58,948	13.61	243	0
Russia	156,036	20,090	12.88	142	0
Scandinavia	42,802	14,528	33.94	121	0
Taiwan	119,876	27,893	23.27	167	0
Thailand	76,814	17,721	23.07	133	0
Trinidad and Tobago	83,732	14,149	16.90	119	3.1
Ukraine	116,004	7,949	6.85	89	0
Vietnam	344,331	49,533	14.39	223	0
Yugoslavia	110,226	7,556	6.86	81	0

Map 4.1: Percent of Immigrants Living in GCs in the U.S. by Country of Origin



Map 4.2: Rates of Immigrant Gating in the U.S. Versus the Total Foreign Born Average

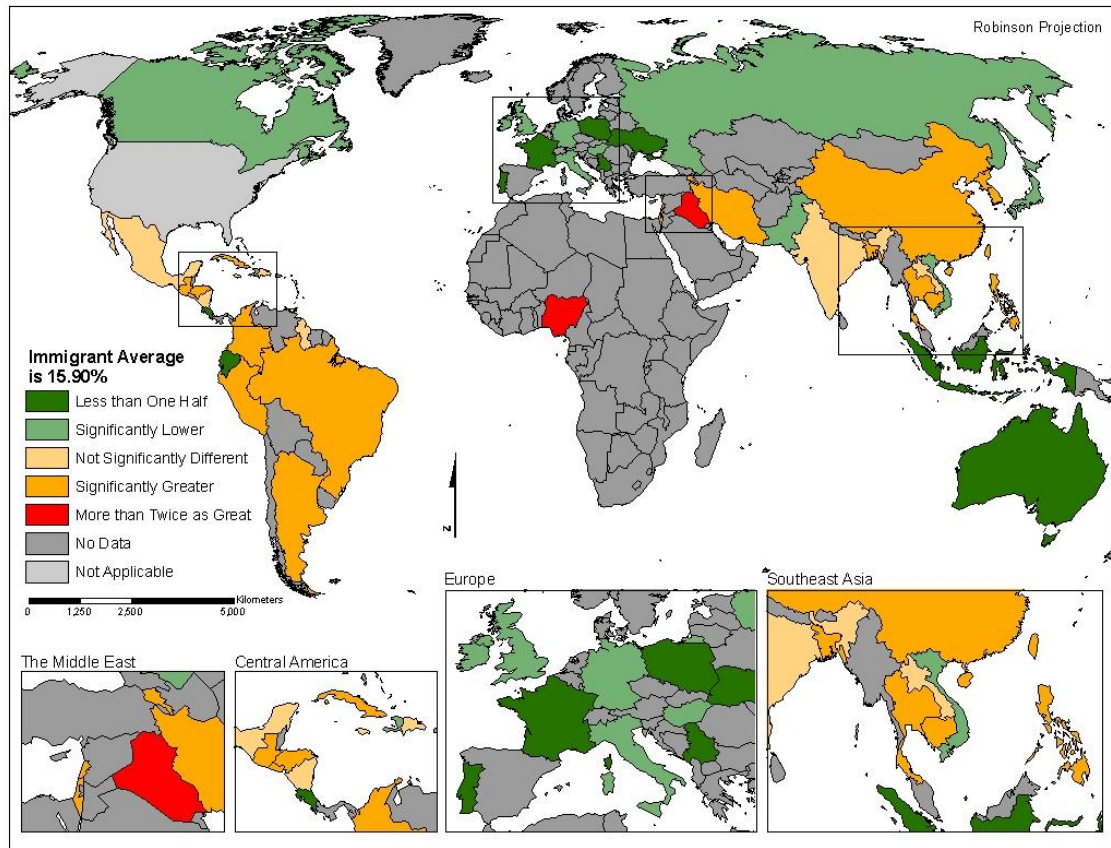


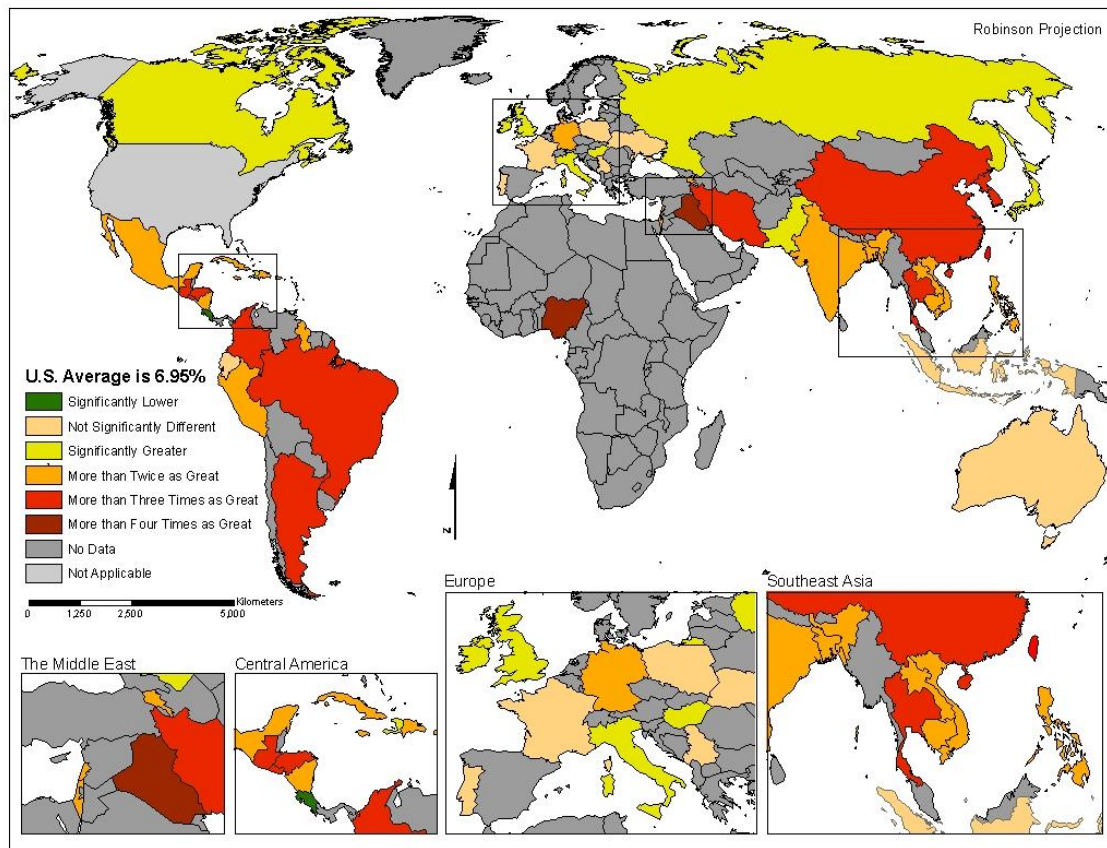
Table 4.3 Percent of Immigrants Gated by Country of Origin Compared to U.S. Native Born Average

Weighted Households	Total	Gated	Proportion as %	Z-Statistic	Significance Level
Born in the U.S.	111,000,000	7,730,954	6.96		
Argentina	73297	18125	24.7	-191	0
Armenia	40163	8198	20.4	-107	0
Australia Oceania	46332	2615	5.6	10.2	8.88
Bangladesh	61053	9860	16	-90	0
Brazil	82268	21458	26	-218	0
Cambodia	54306	10765	19.8	-119	0
Canada	381301	48836	12.8	-145	0
China	445998	107640	24	-453	0
Colombia	214122	53038	24.7	-327	0

Table 4.3 Continued

Costa Rica	19960	0	0	0	0
Cuba	347261	64771	18.6	-274	0
Dominican Republic	121362	17297	14.2	-109	0
Ecuador	61991	2987	4.8	20	1
El Salvador	239322	55115	23	-312	0
France	63433	2953	4.6	21	1
Germany	490165	68613	13.9	-197	0
Great Britain	355382	43170	12.1	-124	0
Guatemala	129868	28897	22.2	-219	0
Guyana	55988	9777	17	-99	0
Haiti	174732	23457	13.4	-108	0
Honduras	102212	25909	25.3	-233	0
Hong Kong	53410	19096	35.7	-264	0
Hungary	64693	5721	8.8	-20	0
India	589513	89396	15.1	-251	0
Indonesia	33583	2639	7.8	-7.3	1
Iran	119840	26518	22	-208	0
Iraq	33749	12304	36.4	-215	0
Ireland	76412	8234	10.7	-42	0
Israel	56637	10909	19	-116	0
Italy	165427	16281	9.8	-48	0
Jamaica	180419	31324	17.3	-176	0
Japan	144782	18794	12.9	-92	0
Korea (N/S)	351801	84646	23.6	-395	0
Laos	57671	9567	16.58	-92	0
Lebanon	54027	8816	16.3	-87	0
Mexico	2819599	434605	15.4	-553	0
Nicaragua	64138	10056	15.6	-88	0
Nigeria	86457	29734	34	-319	0
Pakistan	70124	7614	10.8	-41	0
Peru	91379	18249	19.9	-156	0
Philippines	546227	100155	18.3	-333	0
Poland	210286	14482	6.8	0.655	0.25
Portugal Azores	81480	2685	3	40	1
Puerto Rico	433229	58948	13.6	-175	0
Russia	156036	20090	12.8	94	0
Taiwan	119876	27893	23	-224	0
Thailand	76814	17721	23	-177	0
Trinidad Tobago	83732	14149	16.9	-114	0
Ukraine	116004	7949	6.8	0.022	0.98
Vietnam	344331	49533	14.3	-174	0
Yugoslavia	110226	7556	6.8	-0.056	0.95

Map 4.3: Rates of Immigrant Gating in the U.S. Compared to the Total Native Born American Average



That being said, there are outliers such as Costa Rica which has a colonial history and Germany, which has neither a colonial past nor a collectivist culture. This demonstrates that in addition to culture and history, individual and contemporary forces are also at work. The rates of Nigeria and Iraq seem to indicate that tumultuous events in a country's recent past increase the propensity of immigrants coming from such countries to gate upon arrival in the United States. As mentioned above however, the lack of a temporal component limits the conclusions we can make on that topic. Future research should build on the findings of Low (2003) by using ethnographic

methods to further examine the relationship between immigrants' country of origin and their decision to move to a GC once inside of the United States.

One major shortcoming of these results is the lack of data for many countries, particularly in Africa. However, because these data are representative of the United States as a whole, this absence of data is the result of relatively few immigrants coming from African countries other than Nigeria. Although this limits the conclusions that can be drawn concerning that continent, the extremely high proportion of immigrants originating in Nigeria who have moved to GCs in the United States does at least, not go against the general hypothesis.

Hypothesis # 5

The fifth hypothesis posited that foreign born homeowners living in GCs inside of the United States would be wealthier than foreign born homeowners living elsewhere in the United States. The mean income of gated foreign-born homeowners was found to be \$87,963 whereas that of non-gated foreign born homeowners was found to be \$83,940. While the gated segment of this population has a slightly higher household income on average, the two sample difference of means *t*-test found this difference to be insignificant. The *t*-statistic generated in this test is 0.702 which is only significant at the 0.2416 level.

These findings do not warrant the rejection of the null hypothesis but rather suggest that foreign born homeowners living in United States GCs are in fact not part of the so called 'transnational elite' which gates itself in other countries such as Ghana (Asiedu and Arku, 2009) and Trinidad (Mycoo, 2006). This would seem to indicate that the wealthy immigrants employ more traditional means of separating themselves from the rest of society such as distance (Cameron, 2006). Future studies

could use the AHS to determine if there are differences between wealthy and lower class rates of gating vary by country of origin.

Summary of Findings

These analyses have found that overall, the push and pull factors acting on the residents of GCs are effectively the same as those acting on the residents of other communities in the United States. Although immigrants may be contributing to the rise in the number of GCs in the United States by acting as a push factor, they also contribute by creating and perpetuating demand for gated residences. Compared to the average foreign born rate of gating inside the United States, native born Americans have been found to have a relatively low rate of living in GCs.

These analysis have also shown that while on average the foreign born are more likely to live in GCs than are the native born, these rates vary significantly by country and region. Although there are some exceptions, these differences are based primarily on the culture and history of the country of origin. This study has also shown that on average, the gated segment of the foreign born population is not significantly wealthier than the non-gated population, disproving the existence of a gated transnational elite in the United States.

Chapter 5

CONCLUSION

Summary

Gated communities are a growing trend in the United States and around the world. Although the proliferation of GCs has attracted much attention in both academic circles and in the public's eye, misconceptions remain persistent. One of the most prominent of these misconceptions is that the people living behind the gates are somehow different or better off than the rest of society, whether fiscally, socially or otherwise, even if only by virtue of their choice of residence. Another poorly understood facet of the phenomenon of GCs is the dialogue between the United States and the rest of the world. Commonly, the global rise of GCs is viewed as the result of a proliferating American model. While American influence is obviously at play around the world, America is itself a nation of immigrants. As such, it is surprising that the role immigration has played in the development of the 'United States Model' has received relatively little attention in academics.

Together, these gaps in the literature constitute a poor general understanding of the overall causes of GCs in the United States. To shed light on these issues, this thesis developed and tested five null hypotheses: that the same combination of push and pull factors acts on residents of gated and non-gated communities respectively; that the proportion of foreign born householders would be

equal both inside and outside of GCs; that the proportion of householders living in GCs who were born overseas would be equal to the proportion of GC householders who were born in the United States; that the proportions of foreign born GC residents inside the United States would be equal for all countries represented in the AHS; that the average income of the foreign born population living in GCs would be equal to the average income of the foreign born population living elsewhere in the United States.

Contributions of this Thesis

While some case studies have compared residents inside of GCs with those living outside, such research is relatively scarce. The one study to make such a comparison at the national level using the 2001 AHS dataset (Sanchez *et al.*, 2005) produced uncertain results. To more conclusively determine whether or not such differences exist, this thesis examined a combination of push and pull factors using the most recent nationally representative AHS dataset collected in 2007. Results of this analysis showed that along the considered dimensions of residents' main reason for moving, choosing a home, and choosing a neighborhood, no real differences exist between the residents of gated and non-gated communities. These findings support those of Lemanski and Oldfield (2008) who suggested that the push and pull factors acting on residents living in GCs are effectively the same as those acting on residents living elsewhere in the United States.

Sanchez *et al.* (2005) was the first study to reveal that minorities, such as Asians and Latinos, were disproportionately represented behind gates, thus indicating a connection between immigration and gating. Vesselinov *et al.* (2007) gave the actual proportions of foreign born for the South and West regions of the United States, again finding that population to be disproportionately large, though Vesselinov and Le

Goix (2009) found that for certain metro areas in the United States, the foreign born population was smaller inside of GCs than in the surrounding areas.

This thesis is the first to give definitive numbers for the nation as a whole, revealing that as of 2007, while 13.22% of householders in the United States were born overseas, more than 25% of householders in American GCs were born overseas. This demonstrates that while immigrants may be contributing to the rise of GCs in the United States by acting as a push factor (Low, 2005), they are definitely contributing by creating demand for such residences themselves. Thus it must be recognized that while the so called 'American Model' of GC is spreading throughout the world, that model is, in large part, shaped by the immigrant nature of the United States.

This thesis is also the first to compare the relative frequency of gating between the foreign and native born populations for the United States as a whole, finding that householders born overseas are more than twice as likely to live in a GC than are residents born in the United States. These results indicate that while GCs are a rapidly growing residential form in the United States, Americans still have a relatively low rate of gating, contradicting reports of a fracturing society.

Building on the evidence of such studies as Glasze and Alkhayyal (2002), Low (2003, 2005), Huang (2006), and Danielsen (2007), who have suggested the connection between the culture of origin and the decision to gate once inside the United States, this thesis is also the first to examine gated proportions by country of origin. As expected, immigrants originating in countries with a history of GCs, whether based on colonialism or a collectivist culture, are more likely to gate once inside the United States. However, exceptions to this rule demonstrate that other factors are also at play.

This general proclivity to gate among immigrants and expatriates is common elsewhere in the world but those populations are often wealthy (Mycoo, 2006; Asiedu and Arku, 2009). This ‘transnational elite’ uses personalized security measures such as GCs to protect itself from real and imagined dangers presented by the native population when overseas (Webster *et al.*, 2002; Shamir, 2005). Because the existence of such an elite in the United States has not previously been tested, the final hypothesis of this study sought to answer this question.

Although the average income of the foreign born population was found to be higher inside of GCs than elsewhere in the United States, this difference was not significant, indicating that the gated segment of the foreign born population in the United States is not part of a transnational elite. This further supports the conclusion that immigrant gating in the United States is due primarily to the culture of the country of origin, the status provided by the exclusive nature of GCs which can translate to greater social capital in the home country, and the personal factors unique to each individual immigrant.

Shortcomings of this Thesis and Suggestions for Future Research

One shortcoming of this analysis is the lack of temporal considerations. While this study shows that immigrants are more likely to live inside of GCs once inside of the United States, the average time lag, if any, between arriving and moving to a GC remains unknown. Future research should seek to answer that question by further analyzing the forthcoming AHS dataset.

Another shortcoming of this analysis is that while the immigrant population’s country of origin was examined, race was not. Answering this question is of importance to determine if the immigrants coming from countries with colonial

histories are more likely to be descendents of the native population or of the colonists. This study did not consider that question because separating the immigrant population originating in a given country by race made the sample sizes too small for analysis. However, future research can examine regions with colonial pasts rather than countries so as to maintain adequate sample sizes.

Finally, the set of variables used to test for differences between the residents of GCs and those living elsewhere were not exhaustive. As such, that analysis may have failed to demonstrate extant differences. Future research should test to determine if a different set of variables is more effective at discriminating between the groups. Such research could either use other variables contained within the AHS, or data collected in case studies designed specifically to examine whether or not such differences exist.

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