THE "GOOGLE SHUTTLE EFFECT:" GENTRIFICATION AND SAN FRANCISCO'S DOT COM BOOM 2.0

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List of Figures

Figure 1- Table Ellis Act Eviction Data p.17
Figure 2- “The City from the Valley” (Stamen Design) p.17
Figure 3- Selected Google Shuttle Stops p.23
Figure 4- Rate of Rental Price Charge p.27
Figure 5- Geography with Larger Price Change p.27
Figure 6- Map of Rental Price Change- One Bedroom p.28
Figure 7- Map of Rental Price Change- Two Bedroom p.29
Figure 8- Sample of Craigslist Ads p.32

Change is happening in San Francisco. Newspaper articles ask: "SF Gentrification 2.0 -- For Better Or Worse?" (Kurwa 2013) or proclaim "Gentrification no longer a dirty word" (Nevius 2013), while others lament the rise of the "Bacon-Wrapped Economy" (Cushing 2013). Every month brings a report of rising rents, while local residents struggle to keep track of the new restaurants and boutiques opening and the proliferation of cranes dotting the skyline. As of April 2013, San Francisco supervisors are considering a moratorium on new restaurants on Valencia Street (a main thoroughfare of the Mission District) and there are 26 cranes in a city that only covers 49 square miles.

Almost as hard-to-miss as the cranes are the "Google buses:" huge, unmarked, shuttles bringing well-paid tech workers from San Francisco to their jobs in the Silicon Valley. In many ways, the Google Buses have become a stand-in for the generalized anxiety about another dot-com boom. While the city, through the Muni Partners Program, is seeking to regulate these private shuttles, the broader issue of how these buses are affecting housing equity and gentrification has not entered this dialogue.

While these symbols of "gentrification" may be highly visible, the causes of change and the ways to mitigate gentrification are harder to discern. This paper seeks to link the invisible processes of gentrification with the visible, in the hope of keeping San Francisco a just and equitable city. Focusing on the Google buses is symbolic, as the shifting relationship between the Silicon Valley and San Francisco is creating this boom. But focusing on the buses is also practical; I contend that the buses are concretely contributing to gentrification, and that by pinpointing a specific cause (of many), we can better fight gentrification.

First, this paper has a normative project. While city planners argue for various locations in the Equity-Efficiency-Environment triangle (Campbell), I am primarily interested in a project of equity. Lower-income people should not bear the brunt of the negative externalities of economic development. I hope to contribute to city-wide efforts to combat gentrification through my research.

This report suggests that the Google Shuttles are driving up rental prices within a walking distance (half mile) of five of the shuttle stops, based on rental data from 2010 through 2012, Craigslist ads, quotations from real estate agents, and models of transit-based and neoliberal gentrification. It is my contention that gentrification in San Francisco is not the result of inevitable market forces, but the result of specific actions, or inactions, designed to contribute to the economic growth of the city. By illuminating these specific (in)actions, we can seek to find greater justice in the face of the powerful forces of gentrification.

To begin my argument, I will discuss the literature on gentrification, focusing on two relatively new strains of gentrification theory: super-gentrification, and neoliberal gentrification, and establishing a common framework for understanding these contentious terms. I will then provide some context for the current dot com boom 2.0 in San Francisco, framing it in the long history of business interests displacing poor people in San Francisco. Then, I will briefly discuss the current moment in San Francisco, discussing the "hot" housing market, the recent spate of evictions, and the very pro-Tech administration of current mayor Ed Lee.

In discussing the contribution of economic growth to displacement in San Francisco, I seek to follow in the footsteps of Chester Hartman, who, in his book *City for Sale: The Transformation of San Francisco* (2002), illustrates that San Francisco manifests "the golden rule… those who have the gold get to make the rules," yet claims "it would be incorrect to describe the transformation of San Francisco as a large-scale secret conspiracy. Rather, it is a confluence of power public- and private-sector actors operating in their class and personal interest" (p. 393). I, like Hartman, seek to "analyze those mostly open acts in order to reveal their order and purpose" (p. 393).

In the second half of my paper, I will discuss the Google shuttles and move into my data illustrating gentrification around five of the stops. Finally, having hopefully illuminated some of the drivers of gentrification in San Francisco, I will make suggestions on how to move forward.

Gentrification: "the knife edge of Neoliberal Urbanism"

During the course of my research, I have started calling gentrification "the G word," because it can elicit extremely strong, unintended reactions. People become defensive or offensive, at turns hurt and exasperated around the use of this word. Occasionally, I have tried to avoid using it altogether. Some theorists, such as Liz Bondi, have even argued that the word should "disintegrate under the weight" of its many definitions (Bondi, 1999 p.255). However, as Loretta Lees, Tom Slater and Elvin Wyly (2008) argue, the word "gentrification" comes with some useful political baggage: that is, it invokes the issue of "class-based displacement and oppression," which makes it valuable for arguing in favor of equity in the face of seemingly neutral terms like "revitalization" and "regeneration" (p.155).

The concept of "gentrification" has a robust, albeit variegated, grounding in planning theory, and in the section that follows I will lay out a working definition of gentrification, and unpack some of its components. Of note, in particular, is how contemporary discussions of gentrification lead to discussions of "neoliberalism," another loaded term. This section will seek to link these two concepts as a crucial framework for understanding what is currently happening in San Francisco.

Consumption-side and Supply-side Gentrification

In extremely simplified terms, Lees, Slater, and Wyly (2008) define gentrification as "the transformation of a working-class or vacant area of the central city into middle-class residential and/or commercial use" (p.xv). While contemporary debates on gentrification problematize almost every component of this definition (can areas other than vacant or "working-class" neighborhoods be gentrified? Can places other than the central city be gentrified?), it provides a useful starting point for our brief discussion here.

Traditional gentrification literature has been dominated by two points of view: consumption-side and supply-side. Consumption-side theorists like David Ley (1994)

and Jon Caulfield (1989) are interested in the demographic and social shifts that create a "new middle class" with the desire to move (or return) to central cities. As Lees (2000) explains, "gentrification is deemed to be a spatial manifestation of… new cultural values" (p. 396). These theorists therefore focus on the role of aesthetics of the city, the emergence of new social norms (like increasing numbers of women in the workforce, and delaying child-birth), and the possibility of urban space as "emancipatory" in enticing more moneyed demographics to an area (Lees). Consumption-side theories posit gentrification as a somewhat inevitable outcome of shifting consumer preferences.

Supply-side theorists focus more on the policies and economics of urban space, looking at broader issues of uneven development under capitalism. Neil Smith's (1979) rent gap hypothesis is one of the most pivotal theories of supply-side discussions. Smith argues that gentrification is a result of capital moving into under-invested areas to close the gap between the land's current rent and its potential rent. As urban areas become increasingly profitable, developers and governments seek to maximize their return on the space, and this process of investment causes gentrification. Supply-side theories link gentrification to the movement of global capital and neoliberalism in a way that will be discussed in greater detail below.

The supply/consumption-side debate is representative of earlier stages, and perhaps less sophisticated understandings, of gentrification. Today, most theorists incorporate both elements into their discussions of gentrification. For my analysis, I consider both the impact of a wealthy population moving into a desirable area, and the larger economic and political forces that encourage them to do so.

Super-Gentrification

Loretta Lees (2000) saw the need to extend a theory of gentrification to already-gentrified areas; she labels this not theoretically complex but still significant process "super-gentrification." Lees writes, "many first-stage (sweat equity) gentrifiers have sold their property to new (very well-off gentrifiers), who are regentrifying property in the neighborhood" (p. 398). This addendum to the gentrification theory is significant

because it extends the class-based, politicized analysis of gentrification to areas that are *not* considered under-invested or "vacant." It also contests the notion that there is an end-stage to gentrification, or that it gentrification is a process that can be divided into neat stages. In the case of San Francisco, as we will see below, many of the areas currently being "gentrified" have already faced previous waves of gentrification. Lees' theory allows us to acknowledge the past history of gentrification, yet leaves room for its intensification.

Neoliberalism

Jason Hackworth (2007) defines gentrification as "the knife-edge" of neoliberal urbanism (p. 149), continuing in the vein of Smith's (1979) linkage of gentrification to uneven capital development mentioned above. If "gentrification" is a word that threatens to collapse under its own multitude of meanings, "neoliberalism" is surely even closer to self-destruction. However, a series of incisive theories, put forth by David Harvey (1989), Jamie Peck (2010), Jason Hackworth (2007) and Neil Smith (1996) among others, render the nebulous term useful for "actually existing" cities.

Most of these scholars agree that neoliberalism is "polycentric," "multiscalar," and dialectic, existing in a state of flux that allows it to "fail forward" and embrace its multitudes of contradictions (Brenner and Theodore 2002, Peck 2010, Hackworth 2007). However, Peck warns that neoliberalism is not "a metaphor for the ideological air we all must breathe" but instead "an open-ended and contradictory process of politically assisted market rule" (p. 2) characterized by both "roll back" policies, such as privatization or dismantling of public services, as well as "roll out" policies, such as escalating surveillance and police presence. These policies pave the way for increased capital accumulation.

Neoliberalism is particularly involved in dismantling the vestiges of Keynesian market liberalism, which, as Hackworth explains, makes neoliberalism particularly virulent in cities (Hackworth 2007 p.149). Cities represent some of the most obvious and physical manifestations of Keynesian government as seen in the form of public

housing, high concentrations of welfare recipients, and public space, and thus are especially targeted for neoliberal policies. The reclamation of the Keynesian urban spaces in the service of capital can also be seen as a mode of gentrification. Smith (1996) has described this neoliberal gentrification as a "revanchist" or revengeful process of class-based repossession of land from poor people.

David Harvey (1989) also discusses the role of neoliberalism in the gentrification of the urban landscape. In the post-industrial era, capital is no longer "fixed" in the form of factories and machinery, at least not in the United States. Thus, cities must find ways to secure their share of this footloose capital in an era of insecurity and change, by integrating "traditional local boosterism… with the use of local government powers to try and attract external sources of funding, new direct investments, or new employment sources." (Harvey 1989, p.7). Cities must, in effect, become entrepreneurs. Smith describes this process as *the city becoming the agent of the market*, instead of vice versa.

Harvey Molotch (1976) also captures much of this dynamic by framing the "city as a growth machine." Molotch asserts "the political and economic essence of virtually any given locality, in the present American context, is growth" (p.310); and that as businesses and governments seek growth they shape the "conditions of community life" with uneven socio-economic impacts (p. 309).

As we explore the current situation in San Francisco in greater detail below, we will see how San Francisco's government has become, in many ways, an agent of private capital, and how this may contribute to gentrification.

Operationalizing Gentrification

While the academic underpinnings of gentrification are valuable to an examination of the Google buses in San Francisco, it is also useful to look at some of the more practical ways that gentrification has been studied.

To start, how does one operationalize gentrification? From the literature reviewed above, a few measurable characteristics stand out. First, the movement of

people of higher income into areas of lower-income can be measured through longitudinal studies of neighborhood income (such as from census data). Since income is often correlated with educational status and race, some researchers will also use changes in these indicators as a measure of gentrification. Individuals with higher-incomes are able to pay more for housing, and thus landlords will be incentivized to raise rents and homes will sell for more on the market. Hence, rises in rent and housing prices can also be signifiers of gentrification.

As rents rise, low-income people may be forced to move from their houses, especially those who are already paying a larger proportion of their income on housing (Chapple 2009, p.1), in a process of *displacement*. Kathe Newman and Elvin Wyly (2006) write, "residents may be displaced as a result of housing demolition, ownership conversion of rental units, increased housing costs (rent, taxes), landlord harassment and evictions" (p. 27).

Displacement is an important, and troubling, component of gentrification for those concerned with equity in the city, though it is notoriously hard to measure. Newman and Wyly explain, "by definition displaced residents have disappeared from the very places where researchers and census-takers go to look for them." While some (Freeman and Barconi 2004, Ellen and O'Regan 2011) have argued that low-income residents actually are more likely to stay in a neighborhood as rents increase, many, like Newman and Wyly (2006), Peter Marcuse (1986) and others, argue that rent increases drive lower-income people from neighborhoods.

Finally, I would like to acknowledge the role of transportation investment in gentrification. Transit-oriented development (TOD), policies that concentrate housing and commercial space around transit nodes, has been shown to increase rents (though not necessarily cause displacement) within a half-mile radius of the transit nodes (ABAG 2010). According to a study by the Center for Transit Oriented Development (CTOD) (2008), the housing premium can be from one-to 45 percent higher in these areas. As a report by the Association of Bay Area Governments (ABAG) explains, transit-investment does not gentrify directly (i.e., the gentrification is not caused by people being literally

removed from their homes urban-renewal-style), but indirectly. Instead, ABAG finds: "This suggests that indirect displacement does not happen immediately after the opening of a transit station, but is rather tied to a surge in wealthy residents that choose the area because they find transit an amenity, along with attractive housing options and walkable neighborhoods" (p. 11).

Additionally, housing market economics demonstrate that as individuals' economic transportation burdens decrease, their ability to pay for housing increases. Thus, if individuals are provided with free or reduced-cost transportation, they will be able to demand a higher-bundle of housing services, and may force prices upward.

In the rest of this paper, I will illustrate that the gentrification occurring in San Francisco is not the inevitable by-product of market processes, but instead the result of specific and deliberate moments- moments planned both to help attract capital and to upgrade transportation options.

"Too valuable to permit poor people to park on it:" A brief history of gentrification in San Francisco

San Francisco has a long history of displacing poor people. Since the 1950s, San Francisco has held appeal as the "New York City" of the West, that is, as "the darling of Pacific Rim trading" (Harvey 1989, p.13). Often, San Francisco politicians have eagerly obliged private capital's desired incursions on the urban fabric, making the city a perfect manifestation of Molotch's "growth machine" theory. As RIchard DeLeon discusses in "The Urban Anti-Regime" (1992), coalitions of business and city hall have worked tirelessly to remove "unwanted people and structures from the Embarcadero, Western Addition, and South of Market areas to make room for a convention center, hotels, office space, boulevards and luxury housing" (p.558). Some of the most well-documented moments of displacement include redevelopment of the Western Addition in the 1960s, tearing down of the International Hotel in the early 1980s, and the dot

com boom of the late 1990s. Justin Herman, the former director of the San Francisco Redevelopment Agency explained in 1970, "This land is too valuable to permit poor people to park on it" (Hartmann 2002, p.71).

The dot com bubble in the late 1990s is of particular note for this paper. Dick Walker (2006) writes, "the city was picked up, shaken until it rattled, and then dropped into a new configuration" (p. 121). Silicon Valley, located directly south of San Francisco and extending until San Jose along the West side of the Bay, has been a conglomeration of high-tech firms since the middle of the twentieth century. While Silicon Valley had long been a center "of technical talent, business acumen, and openness to new ideas" (Walker 2006, p.122), the rise of the internet, coupled with the concentration of risk-taking venture capital in Silicon Valley in the mid-1990s, led to an economic boom of unprecedented size. The impact of the boom was not only felt in the Bay Area, Walker writes, but "was the Great White Hope for the restoration of American global primacy and for revival of the entrepreneurial myth in America" (p.124). The visibility and promise of the dot com boom contributed to the amount of speculative capital that poured into the Bay Area during this period.

During this era, the Bay Area rapidly became home to more young, extremely wealthy people than New York City and Los Angeles (Walker 2006, p.124). These tech workers became the most obvious symbol of the dot com boom in San Francisco. They were portrayed as "yuppies" "colonizing" the city (Solnit and Schwartzenberg 2000). Through the magnetic force of their capital and their consumer preferences, they shifted the market towards providing them with the high-level of retail and housing amenities that they could afford, and the government made limited attempts to intervene.

Rents climbed over 225 percent from 1996 to 2000 (Walker 2006, p.130), service and manufacturing working-class jobs were replaced with lucrative lofts and warehouses, long-time non-profits, arts and community centers made way for offices and high-end restaurants (Solnit and Schwartzenberg 2000). A combination of loss of jobs and rising cost of living contributed to gentrification in San Francisco, although

Walker and Solnit both acknowledge that the extent of displacement was not as catastrophic as some had anticipated during the peak of the boom.[1]

As a result of the fierce opposition to these "pro-growth" regimes, San Francisco currently has a very robust suite of tenants' rights protections. This includes "just cause evictions," which outline 15 specific reasons landlords can evict tenants and offers tenants legal recourse to eviction. San Francisco also has vacancy-decontrolled rent control on units built before 1979, meaning that within a tenant's tenure rent can only rise by a small specified amount annually. Though there are some restrictions as to which which units are rent controlled, the vast number of rental units in San Francisco qualify. San Francisco also has a very pro-tenant Rent Board, a government body designed to protect tenants' rights. The Rent Board also tracks data on evictions, rent increases, and other landlord-tenant issues, yet, as Chester Hartman (2002) laments, the Rent Board can do relatively little to stop illegal evictions.

The boundaries between pro-tenant and pro-landlord rights are hotly and frequently contested to this day, as landlords and real estate lobbyers seek to diminish the number of units that qualify for rent control, and tenants seek to criminalize abusive behavior. This contestation will be seen below, in the discussion of Ellis Act evictions.

The Dot Com Boom 2.0

Many have claimed that San Francisco is currently experiencing another dot com boom- 2.0. This time around, large tech companies are locating in San Francisco rather than in the more spacious, more business-friendly, but less urban and less exciting Silicon Valley. These companies include Twitter, valued $9 billion as of January 2013, Zynga valued at $2.68 billion[2] as of April 2013, and Yelp valued at $1.69 billion as of April 2013 (Google Finance). According to a report by SPUR (San Francisco Planning and Urban Research association), the number of tech jobs in San Francisco has grown by

[1] A warning against catastrophizing today, perhaps.

[2] Though in early 2012, Zynga was valued at $20 billion, which perhaps contributed to speculative investments (Streitfeld).

13,000 between 2010 and 2012, reaching a total of 41,000, a higher total than the previous dot com boom (Metcalf and Warburg 2012).

However, it is not just the success of tech companies located within San Francisco but also outside the city, in Silicon Valley, that creates an impact. According to an annual report, Silicon Valley is creating new jobs at a similar rate (3.6 percent) to the previous dot com boom (Silicon Valley Index 2013). The private shuttles provided by Google, as well as many other firms, have the capacity to transport 14,000 people per day to the Silicon Valley, which makes living in San Francisco easier than ever for many of these workers. Therefore, gentrification in San Francisco is intimately linked with production in the Silicon Valley, and an extremely regional economy is in full swing.

Many of the tech jobs being created and supported in this second dot com boom pay extremely well. The average salary for a tech worker in the Silicon Valley is $101,278, much higher than the national tech average of $85,619 (Netburn 2013). Additionally, many Bay Area workers have seen their salaries supplemented by stock options: companies in both San Francisco and the Silicon Valley have had their Initial Public Offering (IPO)[3] within the past year and a half, making workers extremely wealthy literally overnight. To put things in perspective, San Francisco's Area Median Income for one person is $70,850,[4] which, while still extremely high on a national scale, is still 30 percent lower than the average tech salary.

San Francisco's government has taken concrete steps to ensure that Tech will come and stay in the city, exemplified by the election and policies of current mayor Ed Lee. Former mayor Gavin Newsom appointed Ed Lee as interim mayor when Newsom left the post to become Lieutenant Governor of California in early 2011. Newsom appointed Ed Lee as a non-controversial placeholder: Lee promised not to run for re-election in November of the same year. However, in the ten interceding months, Lee changed his mind, ran for re-election and won.

[3] An IPO is when a privately-owned company opens up their stock for sale to the public. Employees with stock options then can sell their stock, often for extremely high prices. IPOs are generally seen as a way of raising money, though they can be risky.

[4] Which is still much higher than the National median *household* income of $52,762 according to US Census data from 2007-2011.

Notably, during those intervening months, Ed Lee championed a tax break that was very beneficial to tech companies. Twitter, the extremely popular "microblogging" company, was threatening to leave San Francisco, citing the high cost of doing business in the city. In order to entice Twitter to stay, Ed Lee promised to rescind their payroll tax if they located in the Mid-Market area. The New York Times estimates this tax exemption to be approximately 22 million dollars (Story 2012). This tax break, extended to other companies that agreed to locate in the same area, sponsored a flurry of investment in the Mid-Market area by tech companies, adding legs to the already active dot com boom 2.0. It also conveyed to prominent people in the tech Industry that Ed Lee was interested in a partnership.

In particular, Ed Lee attracted the attention of Ron Conway, a high profile and influential "angel investor"[5] in the Silicon Valley who has invested extensively in Twitter. Conway saw "potential" in Ed Lee, and so used his substantial resources to form a committee to encourage Ed Lee to run for mayor of San Francisco. Conway explained, "We believe that Ed Lee is very tech friendly and that's why the tech community is embracing him; he kept Twitter in San Francisco and he abolished the tax on private company stock options" (Tsotsis 2013). Shortly after Lee's re-election, Conway decided to continue his role in San Francisco politics, and started sf.citi (the San Francisco Citizen's Initiative for Technology and Innovation): "leveraging the collective power of the tech sector as a force for civic action in San Francisco" (sf.citi 2013).

Sf.citi has already seen political success: running and winning a campaign to repeal San Francisco's payroll tax (the same tax involved in Twitter's exemption) and replacing it with a "gross receipts tax." This shift in the tax structure of San Francisco benefits tech companies while creating more of a tax burden on more traditional businesses such as real estate firms.

The relationship between mayor Ed Lee and the tech sector illustrates the blurring relationship between the state and the market. It exemplifies David Harvey's assessment of the "entrepreneurial city," portraying "the use of local government

[5] Angel Investors are wealthy people who manage and invest their own money in companies. Other kinds of investors often do not manage their own money.

powers to try and attract external sources of funding, new direct investments, or new employment sources" (Harvey 1989, p.7). As Harvey and others mentioned above have shown, these processes contribute directly to the gentrification of urban space.

Housing Market

Not surprisingly, then, the influx of tech jobs and tech money has led to increased housing prices in San Francisco (Metcalf and Warburg). Median rents rose 10.6 percent from February 2012 to February 2013, placing the median rent for the city at $3,200, the most expensive in the country (Zillow 0213). Other sources show that from 2011 to 2012, rents increased by as much as 135 percent in some neighborhoods like the Bayview, with increases of 53 percent in the Western Addition, 29 percent in the Mission and 61 percent in Noe Valley.

According to data from the American Community Survey, the vacancy rate for rental units in San Francisco was 3.7% in 2011 compared to 5.3% in 2010 (by comparison, nationwide the rental unit vacancy rates were 7.4% in 2011 and 8.1% 2010). Apartments are notoriously challenging to find, and reports, like the following from the Wall Street Journal in March 2012, abound:

> *Soaring rental prices—up more than 10% in the Mission and Noe Valley in the past six months alone—are also making buying more competitive, said Vanguard Properties broker Craig Waddle. He's seen bidding competitions for rentals and rental offers coming in higher than the asking prices. At an open house for a one-bedroom offered for $1,400 a month, 40 people were filling out applications on the spot. One person walked up to the owner, offered $1,700 and got the place.*
>
> (Keates and Fowler 2012)

The increased demand for housing can also be illustrated by a construction boom- San Francisco approved 4,220 housing starts in 2012, while approving only 269 the previous year (Metcalf and Warburg 2012). However, since new housing

construction is a time intensive process, San Francisco is still experiencing a current demand for housing which far outstrips its supply.

San Francisco policymakers, advocates, and citizens have responded to these market imbalances in a variety of ways. In November 2012, the San Francisco Board of Supervisors agreed to temporarily approve a suspension of the zoning code to allow "micro-apartments: "220 square foot residential units, which previously were considered too small to meet code requirements. These apartments are set to rent for $1,300- $1,500/month (compared to other studios which rent for about $2,075/month). Supervisor Scott Weiner, who sponsored the legislation explained, "To confront San Francisco's rising housing affordability crisis, we must be creative and flexible. Allowing the construction of these units is one tool to alleviate the pressure that is making vacancies scarce and driving rental prices out of the reach of many who wish to live here" (Riley 2012). The approval of micro-apartments is another sign of the significant housing crunch that San Francisco is currently experiencing.

Displacement and Ellis Act Evictions

Housing advocates, such as the San Francisco Tenants' Union and the Housing Rights Committee, have argued that this housing crunch is causing displacement. One local long-time advocate described it as an "epidemic of evictions" (Redmond 2012). As discussed above, displacement is notoriously difficult to quantify, but the qualitative evidence is present. Since San Francisco has reasonably strong tenants' rights protections, landlords seeking to evict tenants must use roundabout tactics. One such tactic involves taking advantage of and intimidating tenants who do not know their rights. If a tenant is intimidated or uninformed, they may leave their building when merely threatened with eviction. These "evictions" are almost impossible to track, as landlords are operating outside the legal system and do not need to file paperwork.

Additionally, since the first dot-com boom, landlords have been taking advantage of one kind of "just cause" eviction, the Ellis Act, to displace large numbers of tenants. As illustrated in Figure 1, Ellis Act Evictions have risen dramatically in the past year,

	Ellis Act Evictions	Annual increase	Total Evictions
2010	43		1269
2011	61	42%	1370
2012	64	5%	1395
2013	116	81%	1,757

Figure 1- Eviction Data from San Francisco Rent Board

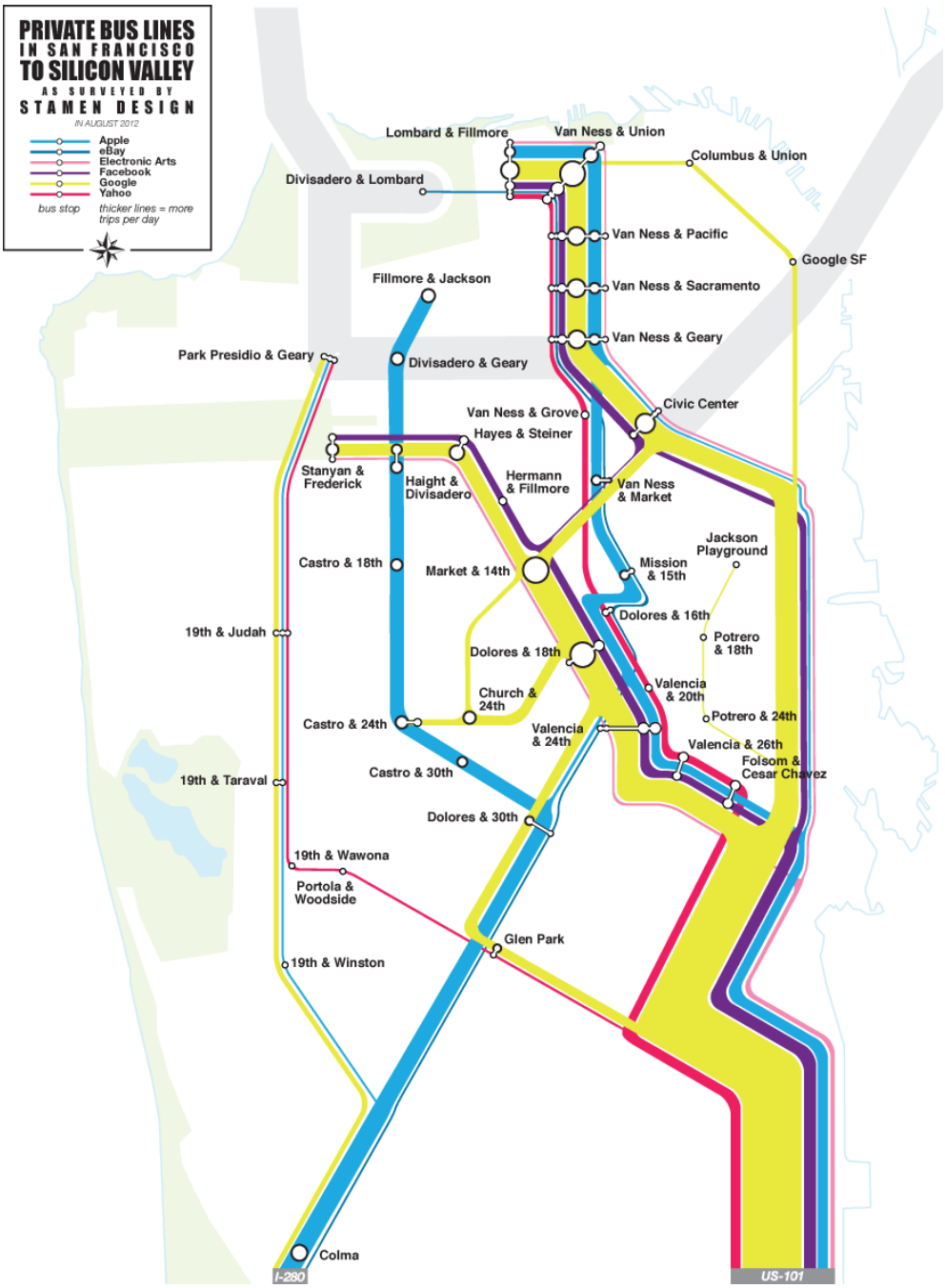

Figure 2- "The City from the Valley" (Stamen)

though the Rent Board does not record *all* Ellis Act-related evictions. In addition to the absolute increase in reported Ellis act evictions, these evictions as a portion of total evictions were 3.4 percent in 2010 and rose to 6.6 percent in 2013. The San Francisco Tenants' Union and the Housing Rights Committee both claim the number of their clients facing Ellis Act Evictions has tripled in the past year. The San Francisco Tenants' Union explains that often landlords need only threaten Ellis Act evictions, and couple the threat with a buy-out offer, to induce a tenant to "voluntarily" leave a property (Gullicksen 2013). While buy-outs may be as high as thousands of dollars (and legally higher if the Tenant is elderly or disabled), tenant advocates insist that a buy-out is almost never enough to compensate for the difficulties or financial cost of finding a new apartment, especially in the current market.

Ellis Act evictions are enabled on a state level. They allow landlords to "go out of business" by removing all tenants from their property. Although the intention of the Ellis Act is reasonable, in practice Ellis Act evictions manifest Smith's Rent Gap gentrification theory: as the value of land goes up, more landlords reap the benefits of selling to developers, and developers use buy-outs to remove tenants and convert buildings to condos or market-rate units (Bowe and Tokar 2013). Recent attempts to reform the Ellis Act and discourage this kind of "flipping" have included provisions requiring that a landlord own a building for over six months before invoking the Ellis Act. This reform did not pass.

In conclusion, an influx of tech businesses and highly paid tech workers is shaping San Francisco's housing market. The city government is encouraging tech companies to locate in the city. As a result, rental prices are rising, and landlords, seeking to capitalize on the boom, are evicting larger numbers of their lower-income tenants.

The focus of the remainder of this paper is on another factor influencing housing prices: the increasing ability of tech workers employed in Silicon Valley to live in San Francisco and commute, for free, to work.

The Google Buses

Corporate Shuttles in San Francisco

The Google buses are private shuttles that transport 4,500 Google workers daily from San Francisco to Mountain View, 35 miles away. Google is only one of many companies offering this service; other large companies such as Apple, EA, and Genentech also provide buses. In this section I will first broadly discuss the shuttles, and then I will provide some additional information on Google's shuttles in particular.

Stamen, a design firm in San Francisco, researched and mapped the private shuttle routes as a way of exploring the "fundamental shifts… underway in the relationship between San Francisco and Silicon Valley" (see Figure 2). They write, "Historically, workers have lived in residential suburbs while commuting to work in the city. For Silicon Valley, however, the situation is reversed: many of the largest technology companies are based in suburbs, but look to recruit younger knowledge workers who are more likely to dwell in the city." Stamen's methodology deserves note: Stamen dispatched researchers to various intersections to sit and manually count the shuttles that passed as the shuttles do not and will not provide public maps of their stops. This lack of collaboration between the private shuttles and the public is paradigmatic, though the Muni Partners Program is seeking to close this gap.

In many ways, the existence of the shuttles is indicative of a land use problem in Silicon Valley. According to a report on private shuttles: "Conventional fixed route transit service is unable to meet all the transportation needs of a modern urban area where decentralized residential and employment patterns lead to indirect, dispersed and long-distance travel patterns" (Margulici and Singa 2013, p.5). In other words, corporate campuses such as Google are located in areas of low-density that cannot support traditional public transportation systems. Instead, the location of these corporate campuses encourages automobile use.

The shuttles contribute to the laudable goal of decreasing green house gas emissions through decreasing single-occupancy car trips. According to a Strategic

Analysis Report (SAR) by the San Francisco County Transportation Authority (2011), the private shuttles reduce vehicle-miles traveled by 20 million, and reduce CO_2 emissions by at least 8,000 tons.

While providing significant positive environmental effects, the shuttles also create some negative externalities. The proceeding section will discuss the possible impacts of the Google shuttles on rental prices in San Francisco, however a few other negative impacts warrant attention. The buses can be extremely loud and travel on roads not serviced by San Francisco's Muni buses. The noise and inconvenience of these buses on narrow residential streets have caused citizens to appeal to the city government for regulation.

Additionally, according to the SAR (2011), 90 percent of the private shuttles load in Muni bus stops; that is, the private shuttles do not have their own curb space but instead monopolize curb space set aside for public transportation. According to research by the San Francisco Metropolitan Transit Authority (SFMTA), conflicts between Muni buses and private shuttles occur relative to the size of the curb space and the frequency of service (Paine 2013). It is illegal for vehicles other than Muni vehicles to stop in Muni bus stops; however, this policy is not enforced enough to disincentivize the private buses.

To better manage and understand the benefits and drawbacks of the private shuttles, the SFMTA has created a "Muni Partners Programs" with grant money from the regional Metropolitan Transit Commission. The goal of this program is to facilitate collaboration between the existing systems of transportation in San Francisco, and the rapidly growing private shuttle sector (Paine 2013). While the program has yet to produce its comprehensive policy framework, thus far it has collaborated with the private shuttles to create designated private-shuttle curb space in two of the highest traffic areas.

Google Shuttles

As Figure 2 illustrates, Google has the largest private shuttle fleet, with

approximately 30 stops throughout San Francisco. Google estimates that one-third of its employees ride the shuttle, or about 4,500/day (Google Green 2013). While "Google Buses" has become shorthand for the entire system of private regional shuttles discussed above, I am making a conscious decision to focus only on Google in this report, as it is the largest fleet and therefore a trendsetter in the industry.

The Google shuttles began in 2004 as a project of Google Employee, Cari Spivak, and initially had 155 riders/day (O. Thomas 2012). Spivak recently said, "I'm proud of the industry for seeing the potential for improving their employees' quality of life and for recognizing their responsibility in minimizing their environmental footprint. It's amazing to know that one person's small initiative at a single company can have such a ripple effect on so many people, the environment and an entire industry" (O. Thomas 2012). Google does not provide data publically on the shuttle routes, but many of the current stops have been in place since 2007 (Helft 2007), though ridership has more than tripled since that time (N. Thomas 2012).

The shuttles are part of a larger effort by Google to encourage their employees to commute more sustainably, which includes philanthropic incentives for employees who choose "self-powered commuting." The buses use five percent biodiesel, and also "exceed the EPA's 2010 bus emission standards," according to Google's website (Google Green 2013).

The shuttles are also part of the impressive amenity package that Google gives its employees, which includes gourmet meals, gym-access, and a variety of health care services. The shuttles themselves are also very amenity-focused: they are large (double-decker), spacious, comfortable, and equipped with Wi-Fi. Like the in-house amenities Google provides at its campus, the buses serve the dual function of increasing worker satisfaction *as well as* worker productivity: Google employees can begin billing for hours as soon as they get on the bus: "even highly-paid professionals who are otherwise able to drive alone to work and afford rising gas prices are choosing the bus for more productive use of their commute" (Margulici and Singa 2010, p.6).

Do Google shuttles have an impact on housing prices in San Francisco?

The narrative in the preceding sections sets the stage for my research question: are the Google shuttles contributing to gentrification in San Francisco? San Francisco is in the middle of a second dot com boom which is manifested in very high rents and rising rates of eviction. Additionally, I have shown that tech companies relocating to San Francisco, as well as Silicon Valley tech companies offering free transportation can be linked to this boom. The free transportation has enabled thousands of workers to live in San Francisco and commute, without accompanying costs, to their jobs in Silicon Valley. Furthermore, the gentrification literature reveals that both wealthy people, like tech workers with median salaries above $100,000, and transit-related investments can also contribute to gentrification. My hypothesis is that the Google shuttles – as a transportation investment that allows wealthier tech workers to live in San Francisco-is contributing to the phenomenon of rising rents in the city, particularly around the bus stops.

Data

For this study, I looked at rental price data from 2010-2012 near five Google shuttle stops, selected by the San Francisco Tenants' Union, with whom I partially collaborated on this project, as areas specific to concerns with their work.

The selected shuttle stops, illustrated in figure 3 are:

- **Lombard:** Fillmore Street and Lombard Street
- **Geary:** Geary Boulevard and Presidio Avenue
- **Haight:** Divisadero Street and Haight Street
- **Valencia:** 24th Street and Valencia Street
- **Dolores:** 30th Street and Dolores Street

The data represents the rental market (instead of the market for home sales). I am looking at rental data primarily because lower-income people often rent, instead of own, and thus this is the market segment where concerns of displacement are most salient.

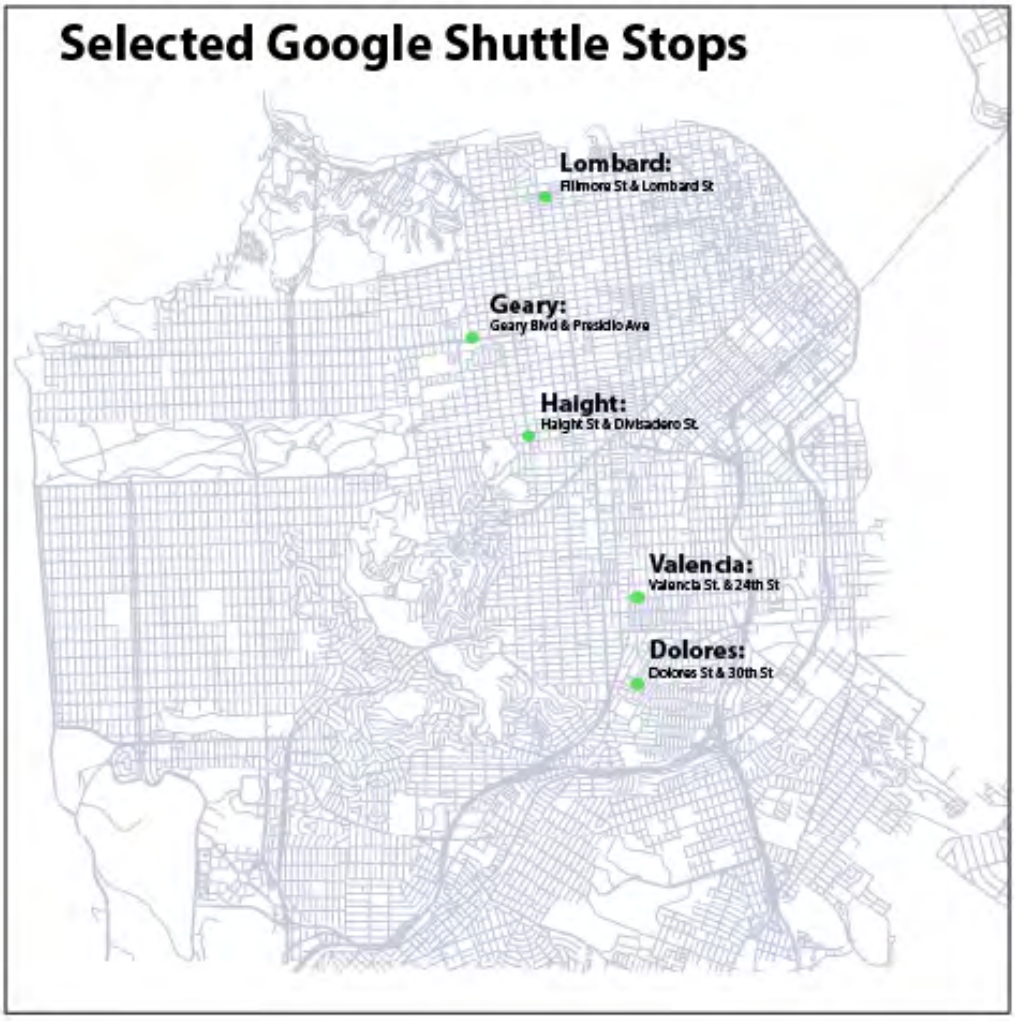

Figure 3- Selected Google Shuttle Stops

Looking at rental prices is also relevant for the gentrifying, and not just the gentrified, population. Tech workers moving to San Francisco are largely considered to be "millennials," a generation whose homeownership rates have been steadily declining according to census data. A tight credit market caused by the housing crisis of 2008 has reduced homeownership levels nationwide, so young millennials have come of age in an era with low rates of first-time homeownership**.** Additionally, demographers explain that millennials' values have shifted away from conspicuous consumption and away from the immobility of homeownership (Thompson and Weissman 2012). This indicates that while the dot com boom is impacting San Francisco's housing prices, it is also significantly impacting the rental market.

The website Padmapper is my primary source of data on rental prices. Padmapper collects rental listings from Craigslist, Apartments.com and Rents.com, among other websites, and maps this data using the Google Maps platform as a tool for those searching for rental housing. While Padmapper does not have all their cached rental data publically available, I was able to access the data through a contact at Padmapper. The dataset consists of just fewer than 63,900 rental listings including price, number of bedrooms, number of bathrooms, geographic coordinates, date and time for each listing.

While many studies rely on Census data or data from the American Community Survey (ACS) to measure rises in housing/rental prices over time, neither of these data sources is sufficiently granular for this project. Census data is collected once every decade, while the Google bus stops have only been implemented over the past five years. ACS data, while collected more frequently, is not more granular than census tracts, which is a geography too large to accurately measure the impact of the stops on surrounding areas.

Assumptions

The stops selected were chosen both because they are areas of concern to the San Francisco Tenants' Union and their work around renter's rights, and also because

most are in census tracts with a high percentage of renters (as shown below). Neighborhoods with high percentages of renter-occupied units are good places to get a large sample size of rental listings.

- **Lombard:** 70% renter-occupied
- **Geary:** 67% renter-occupied
- **Haight:** 71% renter-occupied
- **Valencia:** 87% renter-occupied
- **Dolores:** 40% renter-occupied
  (Census 2010)

Given that my concern is equity for lower-income people, I looked at one- and two-bedroom listings, which are likely to be units appealing to lower-income individuals and families. Additionally, one and two-bedroom units are prevalent in San Francisco's housing stock, so there was a sufficiently large sample size.

In order to arrive a dataset that best represents market-rate rental listings, and not sublets, I had to take measures to remove false sublet postings that were grouped into the one- and two-bedroom data sets. According to common sense, I knew that there were no two-bedroom apartments for rent at $500 in San Francisco in 2010, although according to the initial dataset there were several hundred. I was able to bring more rigor to my assumption by manually examining a histogram distribution of the rental prices. Upon examination, I found that the distribution was bi-modal with one center on the true rental prices, and the other, far below reasonable market-rate and most likely sublets, falsely grouped into the one- and two-bedroom category. I eliminated the specious data around the low mode, solely on a per unit size basis. There were also a few outliers on the high rent end (above $20,000/month) that I eliminated.

I looked at data within two specific geographies: the first consists of rents within a "walkable" radius of half a mile from the selected shuttle stops. A half-mile distance is often considered "walkable" in transit-oriented development, and so I used this standard here. The second geography consists of rents "outside" the walkable radius: from an area between half a mile and a full mile from the shuttle stops.

Methodology

I used ArcGIS to associate each rental listing with a Google shuttle stop, and to classify each as inside or outside a walkable radius. I found the average rent for the area around each bus stop, by geography (walkable/outside) and by unit-size (one-bedroom and two-bedroom). I then computed the percentage change in average rental prices around each bus stop, both inside and outside the walkable radius, from 2010 to 2012. I used percent changes, rather than raw changes, to have a normalized measure across different areas that may represent different points across the range of rents. See Figure X for the percentages.

In order to display the data for ease of discussion, I compared the percent change within each shuttle stop and unit-size across the walkable/outside geographies and noted differences of five raw percentage points or greater. Given that the very large sample size, five percent is a conservative cut-off. See figure X for these comparisons.

Discussion

As you can see from Figures 4 and 5, in many cases rental prices within a walkable distance of the shuttle stops appear to be increasing at a faster rate than rental prices outside the walkable distance. There are seven instances of rents increasing faster within the walkable radius, one that I have considered neutral (as the difference between the two rates is less than five percent) and two where rents outside the walkable radius are actually increasing faster. Figures 6 and 7 show the rates changes mapped to the shuttle stops.

Rate of Rental Price Change 2010-2012

		walkable	outside
Lombard	1br	30%	17%
	2br	11%	25%
Geary	1br	10%	22%
	2br	23%	12%
Haight	1br	28%	23%
	2br	37%	27%
Valencia	1br	23%	23%
	2br	27%	20%
Dolores	1br	43%	23%
	2br	28%	23%

Figure 4- source: Padmapper

Geography with larger change (≥5%)

Lombard	1br	walkable
	2br	outside
Geary	1br	outside
	2br	walkable
Haight	1br	walkable
	2br	walkable
Valencia	1br	neutral
	2br	walkable
Dolores	1br	walkable
	2br	walkable

Figure 5- source: Padmapper

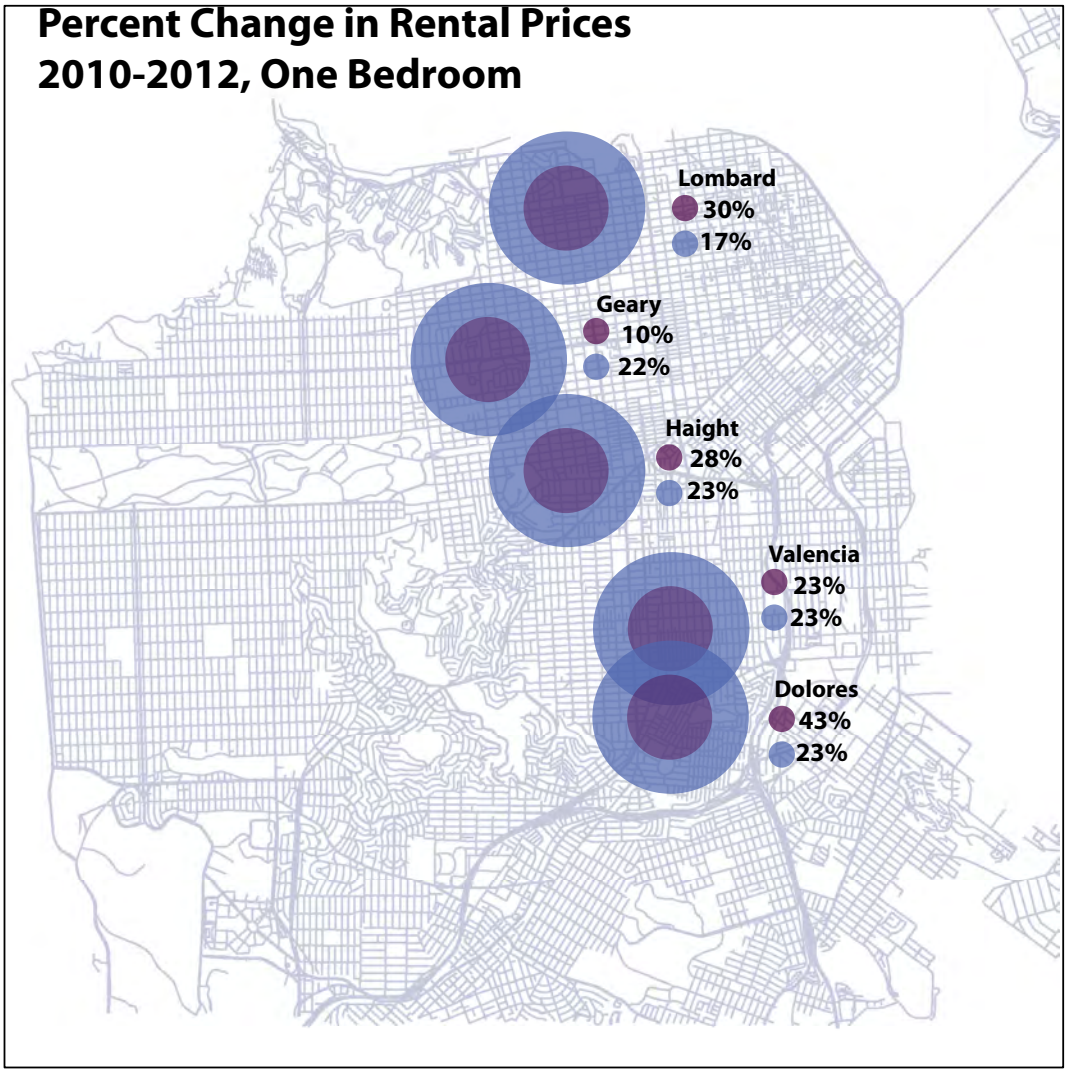

Figure 6- source: Padmapper

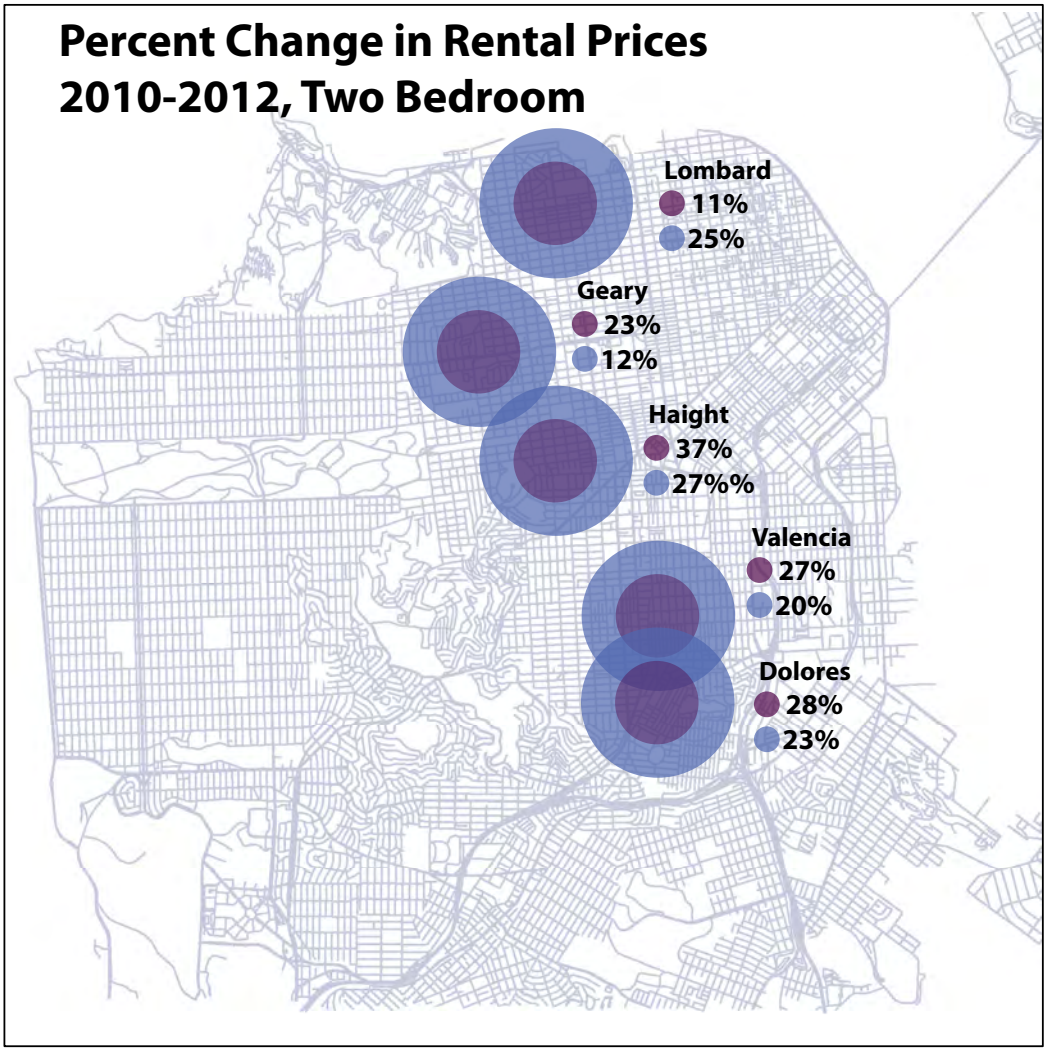

Figure 7- source: Padmapper

Limitations

In this study, I use rental prices as my only statistical indication that gentrification is occurring near the bus stops. This is clearly a limitation of the data, however, it is a necessary one, as other indicators of gentrification, such as educational status or racial make-up, are not available for the necessary geography and timeframe of the study.

Additionally, though I have provided some context for displacement in San Francisco as a whole, it is not possible to measure displacement in these specific areas without a more thorough qualitative or survey-based study, which is beyond the scope of my research here.

This dataset was a selection of rental listings across certain time periods. We were unable to compare the same property across time periods. This prevented the application of significance testing without more advanced models which were outside the scope of this work.

Future research should attempt to control for confounding variables, such as negative externalities caused by bus noise, and variations in neighborhoods and units (perhaps controlling for number of bathrooms or other amenities if possible). In addition, a study that tracks rental prices for the same unit around a new shuttle stop from a year or two prior, to several years after the implementation of the stop might be better able to deduce causation. However, while this study does not prove that the shuttle stops are having an impact, it does provide compelling descriptive evidence that the San Francisco Tenants Union, and other anti-gentrification activists, can use to help draw political attention to the problem.

Craigslist Ads and Real Estate Agents

In addition to the data analysis, my project entailed looking at qualitative measures to understand the potential impact of the shuttle stops. One indicator that

the Google shuttles may be impacting the rental market comes from Craigslist. Craigslist is a very popular website for listing apartment rentals, and provides a snapshot of what amenities sellers think would 'draw' potential tenants to their units, and/or allow them to charge higher rents. Between November 2012 and April 2013, I picked three random, separate days to review the Craigslist ads for apartments in San Francisco. On each of these days, I found several listings that advertised proximity to the Google Bus stops as a perk. Figure 8 provides a sampling of those listings.

Additionally, many real estate agents claim that proximity to the shuttle stops commands a rent premium. A San Francisco real estate agent quoted in the Wall Street Journal explains, "When a listing gets deluged with people- that tells me it's close to a stop" and calls the phenomenon the "shuttle effect." According to this agent, homes near the shuttle stops can command up to a 20 percent premium (Keates and Fowler 2012). The website of McGuire Real Estate company similarly explains,

> *Relocation agents have told me that new Google employees overwhelmingly state that being within a 10 minute walk to a shuttle is their primary housing objective….Each time a new shuttle stop is established, it has a positive impact on income property revenue within a 4-6 block walking radius.*
> (Blakely 2010).

Finally, another real estate blog humorously wrote,

> *Dear Googlers,*
> *Please buy real estate. ASAP. The fact that you are renting is evil. What happened to do no evil? Why don't you want to support the rest of the state? Please be less selfish – you're hurting everyone. Please buy a house. Or two. Or three. Thank you.*
> (burbed 2008)

The descriptive analysis presented here suggests that the Google shuttles are having an impact on rental prices in San Francisco. Rents appear to be rising more rapidly within a walkable distance of the shuttle stops, and proximity to the shuttle stops is touted widely as a desirable amenity. As the city continues to negotiate efficiency and equity tradeoffs in this housing market, special attention should be paid to the housing conditions around the shuttle stops.

$4000 / 2br - Hayes Valley Furnished Rental: April 1 (hayes valley)

Updated Kitchen & Bath, Refinished Hardwood Wood Floors, Cable and WiFi, inc. Two Bedroom w/ Queen Beds.
Parking available for $300/mth extra. Month to month - OK. .(Small-med sized car only).
Strictly No Pets and No Smoking!

Excellent restaurants, cafes and shopping close by.
#21 Bus; 10 mins walk to BART (Civic Center); Google bus stop 1 block away.

$3000 / 2br - Best Noe Location, Very Sunny, grg parkg incl., Open Sat 2/23 10:30-2 (noe valley)

Easy walk down 24th street to all of the shops and great restaurants. 1 1/2 blocks from the Whole Foods, 1-4 blocks to numerous bus stops and Church street Muni and Google bus stops around the corner. Great little park 1 1/2 blocks up the street.

$2850 / 1br - Charming 1 Br/1Bath Unit w/ Walk-in Closets & Parking! (marina / cow hollow)

Charming one bedroom, one bathroom unit located in a great neighborhood just blocks from Union, Chestnut and Polk Streets and near plenty of transportation options on VanNess Avenue. (NEAR GOOGLE BUS STOP!)

$3500 / 2br - 1400ft² - 2 bdrm, 2 bath + office + great location (noe valley)

1.5 blocks from google bus, 1 block from J car, 2.5 blocks from bart
conveniently located near restraunts, bar, and shopping
owner pays garbage, water and gardener

$3500 / 2br - 800ft² - 2BR/2BA Pet Friendly Building (alamo square / nopa)

coming soon), small shops, dry cleaners, banks, cool club scene. Great area for Foodies. Near Alamo Square, GGP Panhandle. Short walk to lower/upper Haight. Great public transportation: 2 blocks to Google Shuttle. Bike lanes (new bike corridor coming soon). Weekly farmers market. $3500.00 mo rent. One year lease. $7000.00

- $4100 / 2br - 2bd/2ba with parking Pacific Heights (pacific heights)

Email with your phone number to set up viewing appointment.
Close to Union Street shops and Google bus stops...

- $1800 Top Floor Studio with Hardwood Floor (lower nob hill)

- close to Trader Joe's, coffee houses and restaurants
- near Google bus stop
- close to bus lines 2, 3, 27 and Cable Car lines

Figure 8- Craigslist Ads from November 2012, February 2013, and April 2013

Next Steps

While San Francisco welcomes tech workers to the city, housing prices continue to balloon. The Google shuttles are one of many factors contributing to rising housing prices, but they provide an opportunity to consider anti-gentrification interventions. I propose two possible interventions: a Community Benefits Agreement and a "Displacement Impact Review." Both interventions provide an opportunity to challenge the unchecked logic of the "entrepreneurial city" by interjecting concerns about equity into conversations around development.

Both of these interventions would be strengthened by San Francisco enforcing the laws that make it illegal for private shuttles to stop in the designated Muni curb zones. As the Strategic Analysis Report (2011) explains, the "best opportunity to manage shuttle operations lies with the SFMTA's jurisdiction over curb zones" (p. 10). There are several options for designated curb zones, and the Muni Partners Program appears to be moving towards a solution of collaboration between public and private buses. However, I wish to underline the importance of moving forward with this particular component.

The process of designating and permitting these curb zones is crucial for introducing equity issues into the conversation on the private shuttles. This process provides both leverage, the SFMTA can withhold permits for the curb zones contingent on certain mitigations, and public scrutiny, by allowing the public to weigh in on concerns around gentrification. In order to successfully address gentrification concerns, San Francisco must continue to make progress in collaborating with the buses on designated curb space.

Community Benefits Agreements

One potential model for mitigating gentrification is a Community Benefits Agreement. Community Benefits Agreements (CBAs) are a "private agreement between a community coalition and the developer on multiple issues that may or may not be included in the regular planning process" (Baxamusa 2008, p.263). These agreements

are legally enforceable contracts negotiated between self-appointed, self-circumscribed, self-maintained community coalitions and a developer, or other entity. The goals of the CBA are to foster changes to the urban landscape that allow the "community" to gain a share of the benefits coming into the area, and to mitigate the potential negative impacts of development.

CBA advocates argue that if a development project is going to receive public subsidies and use public infrastructure, the project needs to benefit taxpayers and not just a narrow spectrum of moneyed interests (The Public Law Center 2011, p.2). As Harvey (1989), Molotch (1976), Hartman (2002) and others have discussed, too often private developments do not benefit, and often may hurt, lower-income segments of cities.

CBAs can include benefits such as local-hire policies, affordable housing set-asides, funding for parks, and job training programs. Governments can facilitate the process of negotiating a CBA, and even mandate a CBA through a Development Agreement or permitting process.

In many ways, Community Benefits Agreements are a direct response to the processes that have sparked gentrification over the past several decades. As advocates of CBAs have explained, they "are critical because of the current 'back to the city' movement," where capital is flowing into previously underinvested areas causing displacement and disjuncture (Gross 2002, p.i). CBAs counter the city-as-entrepreneur model, which attempts to attract capital often at the expense of equity (Harvey xxxx). As Navid Sheikh (2009) explains, "CBAs are the latest reaction to the decades long marriage between urban America and the private sector" (p. 227). CBAs seek to distribute the benefits of economic development more equally when conventional and governmental processes are not sufficient.

Community groups have an obvious incentive to engage in CBAs, but the developer's motives may be less clear. Why would a developer agree to give concessions to a community group? Often the only reason is to expedite a permitting process by avoiding community resistance. Herein lies one of the limitations of CBAs:

the developer in question must have sufficient incentive to negotiate with the community coalition.

Other concerns with CBAs are related to the extra-governmental process of the negotiations. For some, like Sheikh, the question of who speaks for the "community" in these negotiations is troubling. While the community coalition might be a representative group, there is no oversight to guarantee appropriate representation. Sheikh contrasts the process of choosing a community coalition to negotiate a CBA with the process of electing local officials-- the former has no formal accountability mechanism, while the latter is predictably organized around elections.

II believe that despite the fact that Google not a real estate developer, CBAs are still a valuable model for mitigating the negative impacts of the shuttles on housing prices. As discussed above, CBAs seek to add a community voice to the development process in order to distribute the benefits more equitably. In the context of urban "growth machines" and neoliberal governments, this non-governmental "community" voice can often be the only one calling for greater equity. City government appears to be more committed to enticing tech profits to San Francisco than worrying about gentrification, as demonstrated through its emphasis on tax breaks and sf.citi. Therefore, the insertion of a community voice is necessary to assert the need for more equitable development processes.

However, in proposing a CBA with Google, advocates will have to re-think the typical formulation of "developer" and "development" since Google is not building in San Francisco. The shuttles are, however, in the process of applying for their own curb space, as discussed above. Legislative action and a public hearing are necessary to designate curb space, and thus there is a point of leverage for community groups and the government to intervene and insert questions of equity into the process. I would strongly suggest that as these terms are being negotiated, the government should seek to engage tenant advocacy groups on the issue of housing equity. If the government will not lead the way, then community groups should make themselves aware of the permitting process, and attend at the hearings to provide pressure.

Effectively negotiating the terms of the CBA could result in significant benefits for the community including: increased funding for tenant education to avoid displacement by illegal intimidation; donations to the city's new Affordable Housing Trust Fund, to ensure funding for affordable housing into the future; and support for tenants rights organizing.

Displacement Impact Report

A second idea, which has less precedence in planning, is establishing a Displacement Impact Review process. I am borrowing the concept of a "Displacement Impact Report" (DIR) from an editorial in the San Francisco Bay Guardian (SFBG) from December 2012. A DIR would be a publically available report on the projected impacts of a development on the displacement of "existing San Francisco residents." The execution of this report would be an integral part of receiving the permitting approval to move forward with a planned development.

A Displacement Impact Review would be organized very similarly to a familiar Californian city planning tool- the Environmental Impact Report (EIR). EIRs are reports prepared in advance of approval for a development project in the state of California, if that project might have a significant environmental impact. The developer shoulders the cost of preparing an EIR, but a team of experts organized through the local government prepares the report. EIRs do not have legislative power, however they generate information about the impacts of a project that can be used by various interest groups to oppose or support a project. While there are significant concerns, particularly on the part of developers, about the cost of preparing an EIR, Californians have continued to support EIRs as they provide an important point of leverage in protecting a valuable resource- the environment- against undue incursions by developers.

I feel that diverse and equitable cities are a similarly valuable resource that should be protected and maintained. As outlined in the SFBG editorial, the DIR would use economic modeling to predict possible displacement. For example, in the case of the Twitter tax break,

> *You look at how many jobs the tax break will create, how many of those jobs will go to people who are not current SF residents, how much they'll be paid — and what the residential vacancy rate is for apartments and houses in the range they can afford. Add into the mix current plans for housing construction in that range, and plans for low-income housing for people who might be displaced. Historical data could easily create models for how many new highly paid employees it takes to create one individual or family displacement.*
> (San Francisco Bay Guardian 2012)

A Development Impact Review could be helpful during the permitting process for curb space, and also more generally useful tool for mitigating displacement in San Francisco moving forward. San Francisco has long struggled with high housing demand and displacement of poor people, if the city were to integrate a review process around gentrification into its standard development procedures, future concerns around equity could be mitigated.

Conclusion

This report has suggested that the Google Shuttles are contributing to gentrification by making it easier for well-paid Google employees to live in San Francisco and by reducing these employees' commute transportation costs, allowing them to afford more expensive rental units. My data suggests that one- and two-bedroom apartments within a walkable distance of five of the Google Shuttle stops are becoming more expensive at a faster rate than similar units in the same neighborhood. This data is corroborated by real estate agents, who claim that proximity to the shuttle stops commands a premium, and by real estate listings that highlight the bus stops as an important amenity.

In this paper I have also briefly illustrated the (in)actions of government and private companies which have lead to gentrification in San Francisco. San Francisco has come to embody the "entrepreneurial city," a city striving to attract more capital at the great cost of equity. In order to fight for a city where low- and moderate-income

people can live alongside six-figure salaried tech workers, we need to think creatively about combatting displacement. It is my hope that through illuminating some of the processes of gentrification, I can contribute to the struggle for greater equity in San Francisco.

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