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***Gentrification and Racial Transformation in One Neighborhood
in the City of Cincinnati during the Great Recession****

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ABSTRACT

This article examines the process of gentrification and racial transition in one neighborhood in Cincinnati between 2000 and 2016. Madisonville (Tract 55) was defined as a racially integrated middle-class neighborhood in the 1970s. In the early 2000s, substantial private and public investments in the neighborhood initiated the process of gentrification and an in-migration of wealthier (mostly white) residents. This revitalization of Madisonville coincided with the Great Recession of 2008 and with a massive exodus of the middle-class African American population. Median housing values and median rent in Madisonville increased significantly between 2010 and 2016, indicating that cost of living had become too expensive for a percentage of the population. In 2000, the white and African American population in Tract 55 had comparable median household incomes, but by 2016, white median household income was 3.5 times that of African Americans, suggesting that two separate and unequal housing markets had emerged. Using Google Street View and a gentrification index designed by Hwang (2015), this article undertakes documentation of the process of gentrification between 2009 and 2016 to visually support that gentrification occurred in the built environment after the Great Recession.

KEY WORDS Gentrification; Google Street View; Racial Transition

Gentrification, defined as the in-migration of individuals with higher incomes to formerly disinvested neighborhoods, has undergone two changes since it was first identified in the United States in the 1960s. First, gentrification has diffused down the urban hierarchy, from larger to smaller cities (Hackworth and Smith 2001; Lees, Slater, and Wyly 2008). Second, gentrification has spread further from the core of the central city and has been identified at the suburban-central city interface (Hackworth 2019; Wyly and Hammel 2004).

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The term *gentrification* was coined by Ruth Glass (1964), who noted that during the 1950s, the middle class moved into disinvested neighborhoods in London that had maintained a stock of structurally sound housing obtainable at a relatively modest cost and that provided these individuals with access to employment opportunities in the city. Shortly after Glass's "discovery" of gentrification in London, the process was also noted in large cities in the United States. It is uncertain whether the gentrification process was related to economic restructuring that led to changes in the spatial structure of the city or changes in lifestyle preferences. Neil Smith (1979) argued that substantial profit could be made from investing capital in disinvested neighborhoods that were in proximity to downtown employment opportunities and other urban amenities. For decades, investment had accrued to the suburbs, where inexpensive land was available. Retail, manufacturing, and other services also relocated to the suburbs (Mieszkowski and Mills 1993). By the 1960s, deindustrialization led to a restructuring of the labor force that focused on services instead of manufacturing (Sassen 1990). Much of that new high-wage, professional-service employment has since concentrated in central cities (Florida 2005; Hartley, Kaza, and Lester 2016). Ley (1986) acknowledged that the postindustrial transition changed the nature of work but argued that changes in preferences for urban living drove gentrification. Access to amenities was one of the major reasons why gentrifiers selected certain inner-city neighborhoods.

In *Cities and the Creative Class*, Richard Florida (2005) introduced his "creative capital" approach, which states that in a postindustrial society, creative individuals (artists, educators, scientists, and business professionals) are attracted to cities by not only economic motives but also lifestyle choices. He refers to the three T's: technology, talent, and tolerance. Creative cities are ones that have adapted to the latest technology, which further attracts talented individuals who are looking for cities that are inclusive of a diversity of racial/ethnic and lifestyle alternatives (tolerant). Not surprisingly, the "creative class" overconcentrated in the nation's largest cities. Florida's approach can also be applied to individual cities to explain why certain neighborhoods in a city gentrify. Often, these are neighborhoods in proximity to the central business district or to a major university or health-care complex (technology) that attracts a highly talented labor pool desiring proximity to employment. Bradley Bereitschaft (2014) studied the creative class in 70 mid-sized U.S. cities to test whether Florida's finding that highly talented individuals concentrate in certain neighborhoods was applicable outside the nation's largest cities. He found that in most of these cities, the creative class was more attracted to downtown neighborhoods than to other locations in the metropolitan area because of access to both employment opportunities and amenities.

This article examines two changes in the locational aspects of gentrification (down the urban hierarchy and away from the city center) using one gentrifying neighborhood (Madisonville) in the City of Cincinnati, Ohio, as a case study. As late as 2000, only four census tracts in Cincinnati were identified as gentrified (Wyly and Hammel 2004). Since 2000, Cincinnati's downtown has been totally revitalized, expanding gentrification in this area (Woodward 2016). That revitalization provided a catalyst for additional development in neighborhoods farther from downtown, and by

2016, several inner-ring suburban neighborhoods had undergone the gentrification process (Simes 2016).

Gentrification in Cincinnati is tracked by two methodologies. The first method relies on quantitative data from the U.S. Census to explore changes in the demographic and economic composition between 2000 and 2016 in one gentrifying tract in the inner-ring suburban neighborhood of Madisonville. The second method utilizes Google Street View to examine changes in the built environment between 2009 and 2016. Google Street View imagery became available in 2007 and is a useful tool for documenting changes in the built environment (Bader et al. 2017). Of specific interest is the unfolding of the gentrification process in Madisonville during the Great Recession. I argue that the rapidity of gentrification, as measured by census data (quantitative) and changes in the built environment (qualitative), was due to the City of Cincinnati's revitalization program and the housing foreclosure crisis. It appears that these two processes worked together to revitalize the neighborhood, leading to positive outcomes for some players (the City of Cincinnati, investment corporations, and the gentry) while negatively affecting housing opportunities for the low-income population.

This article is divided into five sections. The first section provides a literature review of the stages of gentrification and how gentrification is affected by economic recessions. The second section lays out the data and methodology. The third section provides a short history of Madisonville. The fourth section presents the results, and the fifth section concludes with suggestions for further research.

LITERATURE REVIEW

Stages of Gentrification

Philip Clay's (1979) model of gentrification involves four stages. In Stage 1, housing stock in disinvested neighborhoods is renovated by middle-class risk takers. These tend to be young adults with high educational levels but moderate salaries. They slowly transform the built environment by using their own skills (sweat equity¹). In Stage 2, the neighborhood becomes more attractive and small-scale investors renovate housing and commercial properties. In Stage 3, developers move into the neighborhood and gentrification becomes a money-making venture. Banks now view the area as safe for investment, which results in the arrival of additional middle-class residents. In Stage 4, specialized commercial districts may develop close to the business district or to major institutions such as universities, hospitals, and research complexes. Land prices have increased substantially by this final stage.

Hackworth and Smith (2001) build upon the work accomplished by Clay (1979) by examining the process of gentrification through "waves." The first wave lasted from the 1950s to the early 1980s and saw gentrification as a sporadic process that was rare outside of large northeastern cities of the United States. Gentrification was funded largely by government agencies, as banks were not willing to risk investment in neighborhoods that had experienced disinvestment during the processes of suburbanization and deindustrialization. Specifically, the first wave occurred as the

United States transitioned from an economy focused on manufacturing to one focused on service and information sectors. This change resulted in a preference for central locations in many cities. The second wave began during the early 1980s and lasted until the early 1990s. Gentrification had by then diffused to smaller cities in the United States, but the recession of the early 1990s led to a decline in gentrification-related investment. During the third wave of gentrification (postrecession 1993), investment increased in the central-city neighborhoods that had begun the gentrification process but was also noted in neighborhoods farther from the central city. This era of large-scale investment was promoted by private interests and was also supported by government funds.

Accompanying the third wave of gentrification was a change in housing policy in the United States that affected the spatial structure of neighborhoods in many cities. Local and state governments placed emphasis on deconcentrating poverty by attempting to bring the middle class back to cities to increase the cities' tax revenues (Moskowitz 2017; Newman and Ashton 2004). By the end of the 20th century, city governments also invited to invest in cities those private investors (whether corporations or individual homeowners) that would provide the housing and amenities sought after by the middle class (Hackworth and Smith 2001). Some city areas were too high-risk and required another strategy, however. Edward Goetz (2011) examined one governmental strategy for increasing the tax base of cities: the dismantling of public housing projects. Between 1996 and 2007, 394 public housing projects were demolished in the 139 largest cities in the United States. Like the urban-renewal projects of the 1950s, this demolition of public housing paved the way for investment in prime locations within U.S. cities and facilitated the gentrification process.

Since the 2001 recession, a fourth wave of gentrification has been added by Lees, Slater, and Wyly (2008). The fourth wave was an era in which banks provided loans to high-risk borrowers in poorer neighborhoods. During the Great Recession, many homeowners who secured these unconventional loans were unable to pay their mortgages and were forced into foreclosure (Cheng, Lin, and Liu 2015; Ghent, Hernandez-Murillo, and Owyang 2014). This was a perfect opportunity for speculators in poorer neighborhoods to capitalize on the misfortune of the low- and middle-income homeowners (Herbert et al. 2013).

Manuel Aalbers (2019) has recently added a fifth wave of gentrification. Whereas previous waves of gentrification were funded through individuals, local government agencies, or national development firms, the fifth wave resulted in international companies investing in neighborhoods as a form of speculation and wealth storage. Samuel Stein (2019) refers to this as the "rise of the real estate state." Real estate has become a safe investment in an economically volatile global economy and is fundamentally reshaping the urban landscape in many U.S. cities. Much of this real estate remains empty in cities like New York for much of the year and both contributes to increases in costs of living and eliminates housing opportunities for low- and middle-income populations (Hackworth 2019).

Recessions and Gentrification

Unfortunately, there is a dearth of studies on the relationship between the Great Recession and gentrification, necessitating a review of previous recessions on the process of gentrification. Given that only one decade has elapsed since the Great Recession, this is not surprising. David Ley's (1992) examination of the effect of the 1982–1983 recession on gentrification in six Canadian cities is one of the earliest studies on the effect of recessions on the gentrification process. Contrary to Ley's hypothesis that recession would stall or reverse the gentrification process, he found that it accelerated in the six cities between 1981 and 1986. Ley claimed that the reorganization of the spatial structure of cities in general from economic restructuring had already made inner-city neighborhoods more attractive to white-collar employees by the mid-1980s than they had been in the 1970s. Larry Bourne's (1993) results contradicted those of Ley (1992), however. Bourne envisioned gentrification as a short-term process and claimed that suburbanization would regain popularity during the economic recession of the early 1990s. Bourne came to this conclusion by examining three unsubstantiated hypotheses. The first was that the supply of young gentrifiers was significantly less than it had been in the 1970s and 1980s and that aging baby boomers would not be attracted to inner-city neighborhoods. Second, Bourne incorrectly predicted that the growth of high-wage jobs in the service sector of North American downtowns would slow and that inner-city living would become less attractive to professionals. Lastly, Bourne claimed that neighborhoods with the best potential for gentrification had already been exploited. He did not foresee that gentrification on the urban fringe would become a major process after the 1990s.

Jason Hackworth (2002) claimed that the 1990 recession fundamentally changed the form of gentrification in U.S. cities. Using New York City as a case study, he selected three neighborhoods that had gentrified during the late 1980s. He found that the gentrification process had not stalled during the recession of the early 1990s and that this was largely because these three neighborhoods had secured investment from the local government and private corporations (instead of individuals). A study (Lees and Bondi 1995) on the effect of the recession of the early 1990s on the gentrification process in two neighborhoods in New York City differed from that of Hackworth and Smith (2002). The gentrification process was stanching in the Lower East Side of Manhattan as incumbent and potential residents were unable to afford residence in the neighborhood. In Park Slope, Brooklyn, gentrification began in the 1950s and was aided by the investment of utility companies in the 1970s but slowed significantly by the 1990s. Lees and Bondi attribute this slowing of gentrification in Park Slope to saturation in the housing market, not to the economic recession of the early 1990s.

Wyly and Hammel (1999) examined whether the recession of the early 1990s negatively affected the gentrification process in eight U.S. cities (Boston, Chicago, Detroit, Milwaukee, Minneapolis-St. Paul, Seattle, and Washington, DC). The authors found no evidence that the recession affected gentrification. This was largely a result of housing finance methods. After 1993, banks were much more willing to lend in marginal neighborhoods or to higher-risk borrowers than they had been prior to this time. The authors hypothesize that mortgage lending in gentrified areas should grow at least as fast

as the city average. They found that between 1992 and 1997, conventional home purchases in core gentry areas² of the eight cities grew at 2.5 times that of the suburban rate while those in fringe gentry areas grew by 2.4 times that of suburbia. It appears that changes in the way loans were made and in ideas concerning which areas of the city to invest in paved the way for further gentrification in cities in the United States in addition to leading to the economic crisis of 2008.

A study by Hartley and Kolliner (2014) examined the effect of the Great Recession on gentrification in 59 of the largest cities in the United States, with the purpose of determining if the recession had dampened the process of gentrification there in comparison with the suburbs. The researchers accomplished this by comparing income ratios between the suburbs and gentrified neighborhoods of the respective cities. The authors concluded that during the Great Recession, gentrified neighborhoods were more affected by the economic downturn than were their suburban counterparts. Hartley and Kolliner did not account for stage of gentrification in their analysis, however, whereas Loretta Lees (2009) found that the stage of gentrification had a major effect on economic performance during the Great Recession. Those neighborhoods that gentrified earlier (i.e., those close to the cores of cities) weathered the economic downturn better than those in marginal neighborhoods that had just begun the gentrification process. Lastly, Candace Coleman's (2012) analysis of the effect of the 2008 subprime mortgage crisis on the gentrification process in 14 U.S. cities found that the recession did not adversely affect the process of gentrification.

DATA AND METHODOLOGY

Data

Demographic, housing, and economic data from the 2000 and 2010 U.S. Census and the American Community Survey (ACS) for 2012–2016 were used for this analysis to track the gentrification process in Tract 55 of Madisonville. Google Street View imagery was used to document changes in the built environment between 2009 and 2016. Census tracts have populations, on average, between 2,000 and 4,000 residents and will serve as the unit of analysis in this paper.

I seek to answer the following question: How did the gentrification process unfold in Madisonville (Tract 55) during and after the Great Recession? The subcomponents of this general question include (1) How did gentrification change the demographic and economic characteristics of the tract? and (2) How was the built environment changed during the gentrification process?

Methodology

Identifying Gentrification. Hammel and Wyly's (1996) definition of gentrification was used to identify two census tracts (Tract 55 and Tract 108) in Madisonville as having gentrified between 2000 and 2016. Hammel and Wyly first identify census tracts in a city as "gentrifiable," meaning that the tracts' median household incomes are below the city

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average at the beginning of the study period. A tract must then experience the following three conditions over the study period: (1) percentage change in median household income exceeding city average, (2) percentage change in bachelor's degree or higher exceeding city average, and/or (3) percentage change in housing values/median rents above the city average.

The second part of my analysis borrows from field study research of Wyly and Hammel (2004). Instead of canvassing neighborhoods, however, I used Google Street View to conduct an analysis of structural conditions in Madisonville as of 2016 to determine the stage in the gentrification process (after Hwang [2015] and Hammel and Wyly [1996]). This is discussed in a section below.

Google Street View. Google Street View is used to detect changes in the landscape at the tract level using a method developed by Hwang (2015).

Evidence for gentrification in the built environment was examined between two time stamps:

1. Recession = 2009
2. Post-Recession = 2016

Using imagery from Google Street View allows a detailed view of the built environment at the height of the Great Recession. It is important to allow a lag time in viewing any type of imagery on the built environment (DeVerteuil 2004; Hwang 2015; Yonto and Thill 2020). Although the Great Recession officially began in 2007/2008, it seems reasonable that it would take about one year for the built environment to show the effects of the inability to maintain residential or commercial properties. Unfortunately, imagery cannot be shown before 2007, as Google Street View became operational in 2007. Although some imagery from 2007 exists for Madisonville, coverage is sporadic and does not allow a visualization of the built environment for all sampled blocks; 2009 is thus used as the departure point. The endpoint of 2016 for the study allows a few years for revitalization efforts to come to fruition and to be displayed on the landscape.

Although using Google Street View to examine changes in the urban landscape is more cost- and time-efficient than a physical examination of the study area, Hwang and Sampson (2014) noted in their study of 140 potentially gentrifying census tracts in Chicago that this process would still be too time-consuming. The authors decided on a random survey of blocks within those 140 census tracts. After selection of the census tracts, at least 4 blocks and at least 10 block faces per census tract were needed. A block face is one side of a street within the block. This allows a detailed analysis of a limited number of block faces from which generalizations can be drawn. The 140 census tracts of interest in the city of Chicago had, on average, between 10 and 20 blocks. Tract 55 in this study had 90 blocks; thus, it was decided that a 20 percent sample of blocks within the study area would be undertaken, which would largely align with Hwang and Sampson's (2014) methodology. Following is a detailed description of how to use Hwang's Google Street View methodology.

A Walk-Through of the Gentrification Index Process. This analysis of gentrification on the built environment follows from the work of Jackelyn Hwang (2015), who used Google Street View to examine changes in Chicago's built environment during the Great Recession. By visually inspecting the urban landscape for the years 2007–2009 and 2011–2013, she constructed a gentrification index. This gentrification index consisted of three criteria measured on a binary scale (present or absent):

1. A composition mix score comprising two measures:
 - A. The condition of the preexisting structures in 2009. If at least 75 percent of the structures in the block face were in good condition, a 1 was allocated to this component and the auditor skipped to component 2. If not, a 0 was allocated to this component 1 and the auditor moved to measure 1B.
 - B. The presence of new structures (a judgment call of 10–15 years old) on the block face, new traffic-control signs, new public courtesies, and new large-scale development. These were all recorded as 1 if present and 0 if absent, giving 1B four binary measures.
2. Beautification, including new signage and improvements to the streetscape and landscape. If these features were present on the block face, a 1 was recorded; if not, a 0.
3. Lack of disorder/decay, litter, abandoned lots, and decaying structures (other than buildings). If no disorder was present, the component received a 1; if not, a 0.

Formula for the Gentrification Index (GI):

$$P1 \text{ or } N1 + (B1 + B2 + B3)/3 + (D1 + D2 + D3)/3 = GI_{raw}$$

$$\frac{GI_{raw}}{3} =$$

This process was carried out for each block face (one side of a block) and was averaged to obtain a composite score, which was divided by the number of block faces surveyed.

After viewing these blocks, Hwang created a five-stage gentrification index that ranged from disinvestment/decline (Stage 1) to early, middle, and late gentrification (Stages 2–4) to class turnover (Stage 5). Table 1 provides an example of the process.

Table 1. Hypothetical Scores for Stage of Gentrification in a Census Tract

	Block Face A	Block Face B	Block Face C
1.a. Built environment in good condition ^a	1	1	0
b. Presence of new/rehabilitated structures	0	0	0
Average score on 1^b	0.5	0.5	0
2.a. Efforts to discourage disorder	1	1	1
b. Personal frontage beautification	1	1	0
c. Vacant/public space beautification	0	1	0
Average score on 2	0.66	1	0.33
3.a. Lack of litter	1	1	0
b. Lack of decaying structures	1	1	0
c. Lack of unkempt vacant lots	0	1	0
Average score on 3	0.66	1	0
Average of 1,2, and 3	<i>0.61</i>	<i>0.83</i>	<i>0.11</i>
Average for Tract	0.58 (early gentrification)		

^a 0=not present; 1=present.

^b Score of <0.50 = disinvestment; 0.50–0.57 = early gentrification; 0.58–0.64 = middle gentrification; 0.65–0.80 = late gentrification; >0.80 = turnover.

Source: Author's interpretation of Hwang 2015.

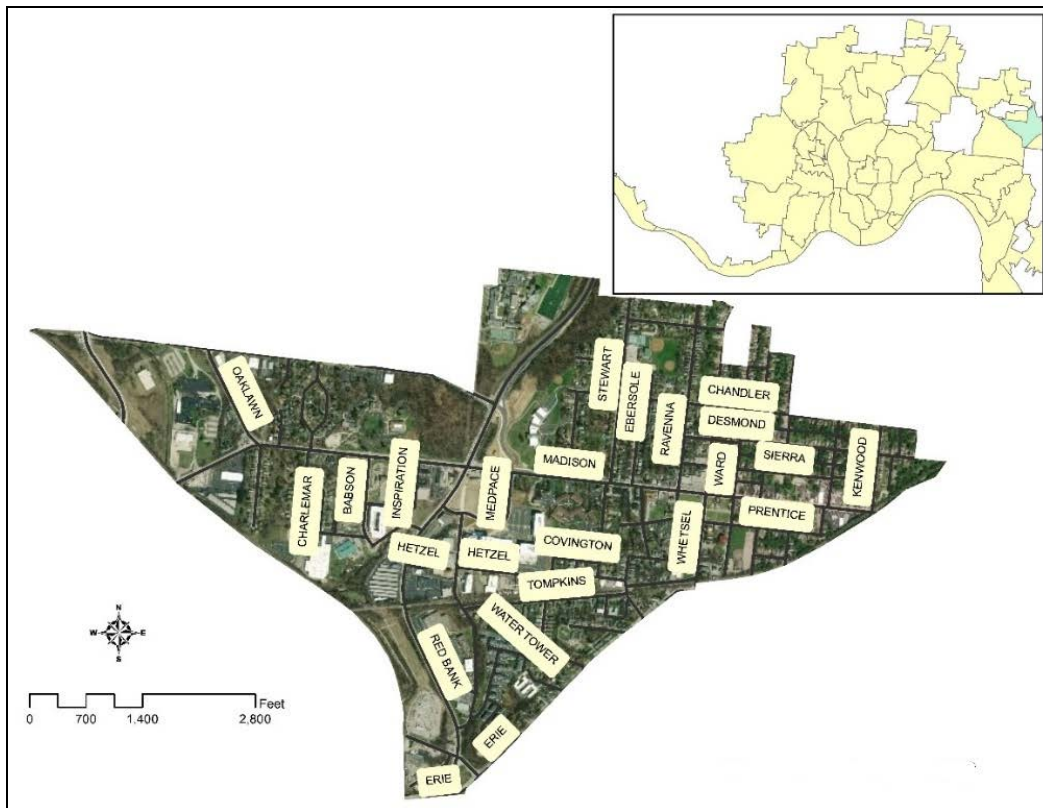
A SHORT HISTORY OF MADISONVILLE

The area that would later become Madisonville (Figure 1) was a Native American settlement that arose in the 1400s, built by people we refer to today as the Fort Ancient moundbuilders.³ The site attracted substantial interest from archaeologists during the late 1800s and early 1900s and was reputed to contain one of the largest archaeological collections of burials and middens in the Midwest (Brown 1999). The area was first surveyed by William T. Darling in 1819 and platted for settlement by 1829 (Writer's Program 1943). By 1841, Madisonville had a population of approximately 400 residents. Present-day Whetsel Avenue and Madison Road were old Native American trails (City of Cincinnati 2002) and provided the foundation for the first roads in Madisonville. Madisonville's growth continued after the completion of the Marietta and Cincinnati Railroad in 1866 (Writer's Program 1943), and by 1898, Madisonville was connected to downtown Cincinnati by streetcar.

By the early 1900s, the Norwood Trough⁴ was the second most important concentration of industry in the Mill Creek Valley and connected Madisonville to this important epicenter of industrial activity in the Cincinnati area. In 1911, Madisonville was annexed to the City of Cincinnati (Writer's Program 1943). Between the 1930s and 1960s, Madisonville was the business center for eastern Cincinnati (City of Cincinnati 2002), but suburbanization and the construction of highways led to the community's demographic and economic decline during the 1970s (Maloney and Auffrey 2013). By

the 1970s, substantial blight had affected residential, business, and industrial areas of Madisonville and provided the impetus for revitalization of the community (City of Cincinnati 2002). In the early 2000s, Madisonville was identified by “Go Cincinnati” (a plan on investment potential in Cincinnati neighborhoods by the City of Cincinnati) as a neighborhood with potential for economic development, and this led to the “Quality of Life Plan” that framed the revitalization of Madisonville’s business, industrial, and residential properties (Madisonville Community Urban Redevelopment Corporation [MCURC] 2016). This plan was coordinated through the City of Cincinnati but was vested with the interests of the Madisonville community.

Figure 1. City of Cincinnati, Madisonville, Tract 55, Satellite Imagery



RESULTS

Madisonville Tract 55 Census Data

Table 2 displays Tract 55’s population by race from 2000 to 2016. The total tract population declined by 7.4 percent. While the African American population declined by 36.9 percent between 2000 and 2016, the white population increased by 83.2 percent. In 2000, African Americans constituted 77.7 percent of Tract 55’s population, but by 2016, only 53.0 percent. Whites comprised 19.0 percent of Tract 55’s population in

2000, but 37.7 percent by 2016. One of the main arguments against gentrification is that it displaces the resident lower-income (mostly minority) population (Kennedy and Leonard 2001; Sutton 2018). According to the 1965 classification of racial change from Taeuber and Taeuber,⁵ it is likely that displacement of African Americans occurred between 2010 and 2016.

Table 2. Population Change in Tract 55, 2000–2016

	2000	2010	2016
Total	3,982	4,000	3,686
	3,096	2,956	1,954
African-American	(77.7%)	(73.9%)	(53.0%)
	758	851	1,389
Non-Hispanic White	(19.0%)	(21.3%)	(37.7%)
	128	193	343
Other	(3.2%)	(4.8%)	(9.3%)

Sources: 2000 U.S. Census; 2006–2010 ACS; 2012–2016 ACS.

Although we cannot determine displacement from census data, interviews with long-term Madisonville residents in 2016 confirmed that there had been an in-migration of whites and an out-migration of African Americans over the past few years (Rinehart 2016). This decline in the African American population is troubling in that as of 2007, Madisonville had been noted as a stable racially integrated community for the past 30 years (Brown and Baize 2009). In the following discussion, I will argue that the displacement was caused by both gentrification and the Great Recession.

Comparison of Tract 55 with the City of Cincinnati on Select Economic, Social, and Housing Characteristics, 2000–2016. Table 3 compares Tract 55 with the City of Cincinnati on median household income, the percentage of population over 25 years of age with at least a bachelor's degree (educational attainment), median housing values, and median rent in the years 2000, 2010, and 2016. A median household income below the city average in 2000 made Tract 55 eligible for gentrification (according to Hammel and Wyly's 1996 criteria). In 2000, Tract 55's median household income was slightly below that of the City of Cincinnati (0.96), but by 2016, Tract 55 had a median household income slightly above that of the city (1.02).

Although there was little change in aggregate median household income for Tract 55 in comparison to the city between 2000 and 2016, that was not the case for educational attainment, which increased substantially in Tract 55 during this time. In 2000, only 15.4% of the population over age 25 in Tract 55 had at least a bachelor's degree, compared to 26.6% for the city. By 2016, 35.4% of Tract 55's residents had attained this level of education, compared to 33.8% for the city. The increases in educational levels for both Tract 55 and the city are not surprising, in that the percentage

of the U.S. population with a college degree has been increasing every decade since 1940, according to the U.S. Department of Education (1993), the 2000 U.S. Census, and the 2010 ACS. Doubling in the percentage of the college-educated population in Tract 55 over only 16 years, however, indicates in-migration of higher-educated individuals into Tract 55 and/or exodus of lower-educated individuals. The discrepancy between growth of median household income and growth of educational levels in Tract 55 is not surprising. Many highly educated in-migrants to gentrifying neighborhoods are in the early stages of their careers and have not had time to earn higher incomes (Blasius, Friedrichs, and Ruhl 2016) or are in occupations that require higher education but do not necessarily generate high incomes (e.g., artists, community activists, social workers).

Table 3. Education and Median Household Income, Housing Value, and Rent for the City of Cincinnati and Tract 55, 2000–2016

	2000		2010		2016	
	Tract 55	City of Cinci.	Tract 55	City of Cinci.	Tract 55	City of Cinci.
Med. Income	\$28,424	\$29,493	\$32,342	\$33,681	\$35,231	\$34,629
Bachelor Degree+^a	15.4%	26.6%	22.1%	31.7%	35.4%	33.8%
Med. Housing Value	\$73,700	\$93,000	\$89,000	\$129,700	\$105,100	\$120,300
Med. Rent	\$397	\$444	\$632	\$593	\$707	\$662

^a Percentage of population older than 25 years with a bachelor's degree or higher.

Sources: 2000 U.S. Census; 2006–2010 ACS; 2012–2016 ACS.

Although the City of Cincinnati had identified Madisonville as a candidate for revitalization by the 1990s, large-scale development through the City of Cincinnati and private corporations did not occur until after 2010. In Stage 1 of gentrification, however, higher-educated individuals with fewer financial resources move into the neighborhood, as cost of living tends to be lower, and begin to fix up the neighborhood (Clay 1979). According to Smith (1979), gentrification will occur outside of the core of the city after central-city neighborhoods have been revitalized. In Cincinnati, investments in Downtown and Over-The-Rhine had already been capitalized upon by 2010, leaving investors searching for other neighborhoods where the payoff was greater. Although the investment was not completed during the years examined in this study, two hundred million dollars has been set aside for investment in Madisonville at the intersection of Madison and Red Bank Roads (Tweh 2016). This is an expansion of Medpace and will result in 250 multifamily housing units, 250,000 square feet of office space, 100,000 square feet of commercial space, and a 239-room hotel/conference center. It is likely that

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these investments will attract the middle class and professionals who will replace the early pioneers of gentrification (Clay 1979).

In 2000, median housing values in Tract 55 were only 78.5 percent of those of the city. Both Tract 55 and the city experienced increases in housing values between 2000 and 2010, likely because of the housing bubble; however, Tract 55 housing values increased by 18.1 percent between 2010 and 2016 while the city experienced a 7.2 percent decline in housing value. By 2016, median housing value in Tract 55 had increased to 87.4 percent that of the city, still allowing homebuyers with limited financial resources to purchase housing in Tract 55 at a reasonable price.

Median rent increased substantially between 2000 and 2016 for both Tract 55 and the city, but the city's 49.1 percent increase between 2000 and 2016 was below that of the 78.1 percent increase for Tract 55. Whereas median rent in Tract 55 was 89.4 percent of that in the city in 2000, it was 107 percent that of the city in 2016. Although owner-occupied housing was still a bargain in Madisonville in 2016 in comparison to other parts of the city, increases in median rent may have put pressure on those with fewer financial resources and may have led to out-migration of some of these individuals.

There is evidence to suggest that affordable housing in Madisonville may be experiencing pressure. According to a community impact report using data from the MLS of Greater Cincinnati, the average sale price of houses in Madisonville in 2013 was only \$65,736, but by 2017, the average sale price was \$117,000.⁶ This would seem to suggest that new housing and revitalization of aging housing stock had increased demand for housing in Madisonville. This is not surprising, as millions of dollars of investment were slated for Madisonville redevelopment during the past decade (Tweh 2016). Even with increases in median housing values in Madisonville, these prices are more affordable than median housing values in neighboring Hyde Park and Oakley and may have incentivized some homebuyers to purchase in Madisonville. The latest data from Zillow (2019) estimated median housing values of \$358,300 for Hyde Park and \$270,100 for Oakley but only \$106,700 for Madisonville.

Select Housing Characteristics for Tract 55, 2000–2016. Total housing in Tract 55 increased from 2,052 units in 2000 to 2,381 units by 2016, an increase of 16.0 percent (Table 4). Recall that the total population of the tract declined by 7.4 percent during this same period. This mismatch between population and number of housing units is likely due to declines in average household size. According to national trends in household size, 88 percent of household growth between 2005 and 2030 will be from childless individuals (Center for Neighborhood Technology 2011). These trends are a result of the baby boomers aging into the empty-nest/retirement stage as well as young adults delaying or foregoing childbearing. Many individuals in these categories are attracted to densely settled older neighborhoods closer to the city (Center for Neighborhood Technology 2011). Madisonville is noted as having at least 15 architectural styles (City of Cincinnati 2002); this array of housing stock would attract a variety of persons. The increase in housing units came about largely through new construction of apartment buildings (both market-rate and subsidized) as well as single-family housing built by the MCURC.⁷ The Quality of Life Plan, initiated in 2008, focused on removing dilapidated housing from the

inventory of housing units and replacing those units with new units (Demeropolis 2018), which is in accordance with a long-range revitalization plan focused on the Madisonville Business District (City of Cincinnati 2009). This remediation of blight and the consequent reduction in crime by 25.2 percent between 2015 and 2017 made Tract 55 more attractive to newcomers with greater economic resources (CDC Association of Greater Cincinnati 2018). As previously stated, revitalization efforts along the Whetsel–Madison intersection have attracted additional investment.

Table 4. Select Housing Characteristics for Tract 55, 2000–2016

	2000	2010	2016
Number of housing units	2,052	2,423	2,381
Owner-occupied housing	43.4%	34.3%	24.9%
Vacant housing	11.3%	17.0%	16.9%

Sources: 2000 U.S. Census; 2006–2010 ACS; 2012–2016 ACS.

In 2000, 11.3 percent of dwelling units in Tract 55 were vacant. This high percentage of vacancies was likely a result of blighted buildings that were not suitable for occupation but had not yet been targeted for demolition. Vacancy increased to 17.0 percent by 2010, likely due to the recession. Surprisingly, vacancy rates were still 16.9 percent in 2016 after the city’s concerted effort to remove dilapidated buildings since 2008. This failure to reduce the percentage of vacant housing units suggests that recovery from the Great Recession was slow. Recall that the ACS data represents an average of vacancy rates between 2012 and 2016; thus, much of the recent in-migration to Tract 55 was not recorded as of 2016.

Owner-occupied housing in Tract 55 underwent a major transformation between 2000 and 2016. In 2000, 43.4 percent of the population was in owner-occupied housing. By 2010, only 34.3 percent of residents lived in owner-occupied housing, suggesting that the Great Recession negatively affected home ownership in Madisonville. Madisonville had the third highest foreclosure rate in Cincinnati in 2008 (Brown and Baize 2009), and by 2016, only 24.9 percent of residents were in owner-occupied housing.

Comparison of Median Household Income for African Americans and Whites in Tract 55 and the City of Cincinnati. In 2000, median household income for African Americans in Tract 55 was 134 percent that of the City of Cincinnati. Because Madisonville was noted as a middle-class community (Brown and Baize 2009), a higher median household income for African Americans in Tract 55 than for their counterparts in the city was not surprising (Table 5). The financial vulnerability of the middle-class African American population residing in Tract 55 was visible by 2010, however. Whereas median household income increased for African Americans in the city, it declined between 2000 and 2010 for African Americans residing in Tract 55. This suggests that there was an exodus of middle class African Americans from Tract 55

between 2000 and 2010. Median household income of African Americans in Tract 55 was still 1.23 times that of the city in 2010. By 2016, median household income of African Americans in Tract 55 was only 0.75 times that of their counterparts in the city, suggesting that a mass exodus of middle-class African Americans occurred because of the housing crisis, which affected Madisonville more acutely than the city as a whole (Brown and Baize 2009).

Table 5. Comparison of Incomes for Tract 55 and City of Cincinnati, 2000–2016

	African American		White	
	City of Cincinnati	Tract 55	City of Cincinnati	Tract 55
2000	\$20,984	\$28,196	\$36,467	\$27,692
2010	\$22,816	\$27,986	\$47,067	\$36,199
2016	\$21,814	\$16,375	\$50,937	\$51,800

Sources: 2000 U.S. Census; 2006–2010 ACS; 2012–2016 ACS.

African Americans were more likely to have obtained subprime housing loans during the 1990s and early 2000s than were their white counterparts (Cheng et al. 2015; Ghent et al. 2014). The disruption caused by unemployment and adjustable mortgage rates/balloon payments likely caused economic hardship and foreclosure for many African Americans. We assume that a mass exodus of middle-class African Americans occurred, as the African American population declined by one third between 2010 and 2016.

Conversely, in 2000, the median household income of whites in Tract 55 was substantially less (only 75.9 percent) than that of their white counterparts in the city. By 2016, median household income for whites in Tract 55 was 1.02 times that of their counterparts in the city, suggesting that an in-migration of higher-income whites to Tract 55 occurred between 2000 and 2016. It has been noted that since the Great Recession, the wealth gap between whites and African Americans had increased (Weller and Hanks 2018) and that the African American middle class was economically worse off in 2014 than it was in 2000 (Akee, Jones, and Porter 2019). In 2000, Tract 55 was a racially integrated middle-class neighborhood in which whites and African Americans had comparable median household incomes, but by 2016, the median household income of whites was 3.5 times that of African Americans, suggesting that two separate housing markets and populations were coexisting in Tract 55.

Google Street View Analysis

Tract 55 consisted of 90 blocks as of the 2010 census. Using a random number table, 18 blocks were selected for analysis according to Hwang's (2015) methodology using Google Street View.⁸ This resulted in the analysis of 60 block faces. In 2009, only 5 of 18 blocks showed evidence of gentrification, meaning a gentrification score exceeding

0.50, by Hwang’s criteria (Figure 2A). Median household income, educational attainment, and median housing values/rents all increased at rates above the city average, indicating that Tract 55 underwent gentrification between 2000 and 2010.

Figure 2. Gentrified blocks in Tract 55. (A) 2009. (B) 2014/2016.



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By 2014/16, 12 of 18 blocks had experienced gentrification (Figure 2B). The block with the greatest change in scores from 2009 was 1003. During this time, this block went from disinvestment to middle-stage gentrification. This is not surprising, in that early gentrifiers often use sweat equity to revitalize housing stock (Clay 1979). An examination of the sampled tracts for the Google Street View analysis revealed no spatial pattern to the gentrification process as of 2009. The gentrified block in the western part of the tract had a score of 0.89 and likely had never experienced disinvestment. The four blocks that gentrified in the eastern part of the tract are spread out and reveal no spatial pattern. The general idea from viewing the 2009 map is that disinvestment was rampant in Tract 55.⁹

Figure 2B displays gentrified blocks in Tract 55 as of 2014/16. The gentrification process appears to be related to proximity of gentrified tracts in 2009, suggesting that blocks adjacent to or near gentrifying areas are more likely to undergo gentrification than are those farther away (Hammel and Wyly 1996).¹⁰ The average gentrification score for Tract 55 in 2014/16 was 0.56 (Table 6), placing the tract in the early- to mid-gentrification stage. During this analysis, two block faces (one located in 4027 and one in 1030) presented worse conditions in the built environment in 2014/16 than in 2009.¹¹

Google Street View Examples. Figures 3A and 3B show a residential area along Kenwood Road in Block 1016. This block face scored 0.33 in 2009, largely because of the houses that were in disrepair. Note the rusted porch roof on the house to the left in Figure 3A. The lawn is mown, but no additional adornments have been applied to the landscape. Sidewalks and driveways are in some disrepair. Note in Figure 3B that by 2016, the house to the right has been demolished and a well-kept vacant space has taken its place. Also note the incremental change in the white house, which received a fresh coat of paint on the porch. It also appears that a new sidewalk has been laid. This block face received a score of 0.55 in 2016.

Table 6. Gentrification Scores for Tract 55 Sampled Blocks, 2009 and 2014/16

	2009 Gentrification Score^a	2014/16 Gentrification Score	Change in Gentrification Stage
Block 1000	0.47	0.52	From disinvestment to early gentrification
Block 1003	0.44	0.61	From disinvestment to middle-stage gentrification
Block 1004	0.44	0.51	From disinvestment to early gentrification
Block 1010	0.37	0.48	In disinvestment stage in both years, but improvement

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Table 6. Gentrification Scores for Tract 55 Sampled Blocks, 2009 and 2014/16, concl.

	2009 Gentrification Score^a	2014/16 Gentrification Score	Change in Gentrification Stage
Block 1016	0.47	0.52	From disinvestment to early gentrification
Block 1019	0.55	0.55	In early gentrification or nondisinvestment in both years
Block 1026	0.33	0.48	In disinvestment stage in both years, but improvement
Block 1030	0.44	0.44	No change
Block 1032	0.61	0.67	In middle-stage gentrification or no disinvestment
Block 3017	0.37	0.48	In disinvestment in both years, but improvement
Block 3018	0.37	0.53	From disinvestment to early gentrification
Block 3019	0.89	0.89	No disinvestment in either year
Block 4008	0.51	0.55	In early gentrification in both years
Block 4010	0.75	0.81	From late-stage gentrification or nondisinvestment to turnover stage
Block 4015	0.41	0.52	From disinvestment to early gentrification
Block 4017	0.41	0.48	In disinvestment in both years, but some improvement
Block 4027	0.44	0.44	In disinvestment in both years
Block 4028	0.44	0.52	From disinvestment to early gentrification
Tract average	0.48	0.56	

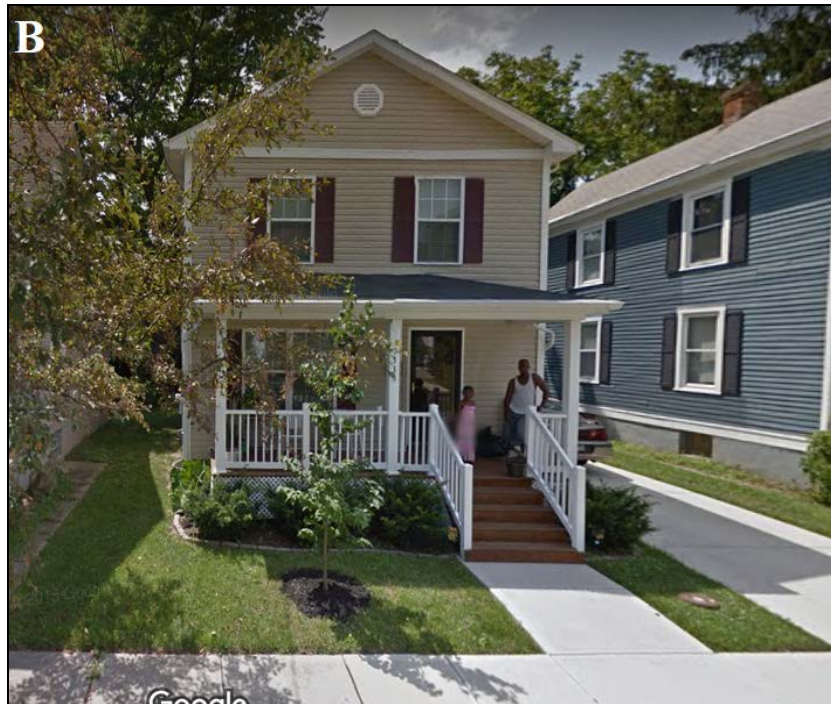
^a Score of <0.50 = disinvestment; 0.50–0.57 = early gentrification; 0.58–0.64 = middle gentrification; 0.65–0.80 = late gentrification; >0.80 = turnover.

Figure 3. Kenwood Road. (A) Disinvested Houses, 2007. (B) Vacant Lot and Façade Improvements, 2016.



Sources: Google Street View, 2009 (A), 2016 (B).

Figure 4. Along Owasco Street. (A) Vacant Lot, 2009. (B) Newly Built Single-Family Home, 2016.



Sources: Google Street View, 2009 (A), 2016 (B).

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Figures 4A and 4B display a vacant lot on Owasco Street in 2009 and a newly built residence in 2016. It is likely that the area vacant in 2009 had previously contained a dilapidated structure that was removed when the City of Cincinnati implemented its demolition of blighted properties in Madisonville. The 2009 gentrification score for this block face was 0.33. Note that the new house has been built in the style of the older houses on the street and is consistent with the style of the existing housing stock. The 2016 score for the block face was 0.61.

Update on Built Environment in Tract 55 as of June 2019

On June 13, 2019, I canvassed Tract 55 to document changes in the built environment since 2016. The most conspicuous change in the built environment was the Ackerman Group's mixed-use complex at Whetsel Avenue and Madison Road, where large-scale development has occurred (Figure 5). This example illustrates that Madisonville had made use of in-fill and new development to spur economic growth in not only the decayed business district.

Figure 5. Mixed-Use Development by the Ackerman Group



Source: Author, June 13, 2019.

CONCLUSION

According to census data and Google Street View imagery, gentrification in Tract 55 (Madisonville) began between 2010 and 2016. During this same time frame, the tract experienced displacement of the African American population, likely because of the

adverse effects of the housing crisis, which affected African Americans to a greater extent than their white counterparts. Even if the housing stock in Tract 55 is not what gentrifiers are looking for in terms of older housing with architectural character that could be found in neighboring Hyde Park or Oakley, it does provide a low-cost alternative for those who do not want to reside in the suburbs or who cannot afford properties in Hyde Park or Oakley. The results also show that the percentage of owner-occupied housing declined substantially between 2000 and 2016, from 43.4 percent to 24.9 percent. While much of this was likely a result of foreclosures in Madisonville, it is likely that many new arrivals are choosing to rent.

Results from applying Hwang's gentrification index indicated that Tract 55 shifted from disinvested in 2009 to the early stage of gentrification by 2016. In this stage of gentrification, according to Clay's (1997) model, individual "risk takers" enter a disinvested tract and gradually improve the built environment. A review of planning documents revealed that Madisonville was already primed for gentrification by the 1990s, however. As previously stated, the area was noted as an epicenter of jobs in the eastern part of Cincinnati, and a massive amount of investment went into the Madisonville Corridor after 2012 (Heyne 2016). It appears that Tract 55 had advanced to Stages 3 and 4 by 2019, which was not included in the study time frame. In these stages of the gentrification process, investment of banks and corporations is prevalent.

Tract 55 now has a well-educated middle-class white population and a lower-educated, lower-income African American population. This is a major transition from the integrated community (both racially and economically) of Madisonville of the 1970s to 1990s. The Quality of Life Plan (MCURC 2012) is an attempt to rectify this situation. As of 2013, Madisonville was the first neighborhood in Cincinnati to focus on implementing form-based code¹² as a method to attract clientele and residents to Madisonville by providing mixed-use opportunities and a walkable neighborhood (Opticos Design 2013). Evidence for this major change in urban planning is found at the intersection of Madison and Whetsel Avenues, as illustrated in Figure 5. These new developments can also help ensure that the low-income population has an opportunity to remain in the neighborhood by providing affordable housing. This can be augmented with two policies for inclusive development (Ehrenfeucht and Nelson 2020). First, affordable housing needs to be maintained. This can be accomplished by offering density bonuses, which would, in effect, allow more-affordable housing to be combined with market-rate housing. Second, people need to be connected to employment opportunities. One example of a program providing such connections is MORTAR, which provides educational/employment opportunities for low-income individuals as well as a method to spur entrepreneurial development that services the needs of the low-income incumbent population. This process is currently taking place in Walnut Hills, a gentrifying tract outside of downtown Cincinnati, and could be implemented in Madisonville.

ENDNOTES

1. *Sweat equity* is a term used to indicate that individual homeowners renovate their homes as time and money permit.

2. Wyly and Hammel discriminated between core and fringe gentrification in their study. They did this via three steps: (1) examining scholarly research, planning documents, and the local press in the eight cities to obtain an inventory of gentrified tracts; (2) completing a block-by-block survey of tracts identified in step 1; and (3) using multivariate discriminant analysis to determine the core and fringe gentrified tracts using several socioeconomic variables. Fringe gentrified tracts were those where investment was modest, were spatially fragmented, or were in early stages of gentrification.
3. Historical artifacts from this civilization are today housed in the Harvard Peabody Museum, the Smithsonian, the National Museum of the American Indian, and the Cincinnati Museum of Natural History.
4. The Norwood Trough was an abandoned preglacial river valley. Its elevation, lower than that of the surrounding area, allowed the railroads and the Norwood Lateral (highway) to be constructed here. Prior to the 1800s, the trough allowed people to move through the area by foot (Potter 1996).
5. According to Taeuber and Taeuber's methodology, for displacement to occur, (1) the African American population must decline by at least 5.0 percent of the total tract racial composition and (2) an increase in the number of whites must occur, along with (3) a decline in the number of African Americans.
6. The data from MLS of Greater Cincinnati are for all of Madisonville, which includes Tracts 55, 56, and 108.
7. Interview with Bill Fischer, Interim Director of MCURC, May 21, 2019.
8. Hwang's blocks for her Chicago study ranged from about 10 to 20 blocks per tract, of which she randomly selected 4 blocks. I modified this and selected 18 blocks, which would be about 20 percent of the blocks in Tract 55, which would be comparable to Hwang's methodology.
9. It appears that the eastern part of Tract 55 was oversampled. This is not unexpected, in that the blocks in this part of Tract 55 are smaller than in other parts of the tract. About two-thirds of the blocks are located east of Stewart Avenue. Several of the blocks in the west were discarded in the sample because they contained private roads that were not accessible with Google Street View or because imagery for some of the roads was available for only one year, making a comparison between two timestamps impossible.
10. The large number of blocks that were unsampled makes these observations largely unsubstantiated but does serve as an indicator of the gentrification process.
11. The blocks did not experience declines in overall block score because other of the block faces were worse in 2009 than in 2014/16.
12. College Hill, Walnut Hills, and Westwood also adopted the form-based code after 2013 as a method of revitalizing their communities.

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