Are charges of racial disparities in the Federal Emergency Management Agency’s relief efforts in New Orleans following Hurricane Katrina accurate? Limited publicly available data on trailer distribution in New Orleans are compared to an on-site trailer count and to a complete trailer count from aerial photographs of New Orleans. The Lower Ninth Ward in Orleans Parish (98 percent Black prior to Hurricane Katrina) had significantly fewer trailers than neighboring Arabi in St. Bernard Parish (95 percent White prior to Hurricane Katrina). To control for administrative differences between parishes and socioeconomic factors, two affluent neighborhoods within Orleans Parish, Pontchartrain Park (97 percent Black prior to Hurricane Katrina) and Lakeview (94 percent White prior to Hurricane Katrina), are compared. The conclusion: racial discrepancies remain large and substantial. A number of hypotheses are developed and the implications discussed.

The U.S. government has a long history of responding to natural disasters. With respect to the San Francisco earthquake of 1906, for example, Will Elder (2003) states, “Based on the army’s experience in the 1906 disaster, clear and formal policies were developed regarding civil relief and the Army’s relationship with the Red Cross was formally defined.” The U.S. Geological Survey (2008) estimates that the 1906 quake destroyed 28,188 buildings. Despite the much more limited role of government during the pre–New Deal era, the government provided aid quickly. In addition to military-run tent cities, cottages were provided as temporary and transitional housing. Blanche Evans (2006) writes about these cottages,

After the earthquake, about 16,488 San Franciscans moved into 5,600 government-provided housing built in refugee camps across city parks. . . . the “shacks” were built by Union carpenters for a cost of approximately $100 to $741 each, depending on size, painted green to blend in the park surroundings and rented to families at a cost of $2 to $6 per month.

Elder (2004) indicates that by the middle of 1907, just over a year after the earthquake, “the cottages were slowly transported out of the camps and onto the owners’ individual property—providing many the opportunity to own their first homes.” Only three years after the quake, 20,000 permanent buildings had been reconstructed, amounting to 70 percent of all buildings destroyed (see Nolte 2006). Linear interpolation yields an estimate of 47 percent reconstruction two years after the disaster. In New Orleans, the percentage of buildings reconstructed after Hurricane Katrina is much lower. Brad Heath (2007) notes that “[f]ewer than 1,400 building permits for new houses in New Orleans . . . have been issued in two years. That represents about 15% of the homes Katrina destroyed.”

What factors may explain the slow pace of recovery? Given that New Orleans is one of the largest cities in the United States with an African American majority (see table 1), racial dynamics may impede reconstruction progress in that city. The possibility that government relief and reconstruction resources could be distributed differentially based on race, whether intentionally or unintentionally, raises profound ethical concerns for normative democratic theory. However, it would be premature to jump to such a conclusion merely from the surprisingly slow pace of reconstruction in New Orleans. If racial dynamics played a role, we should expect to see significant differences in relief and reconstruction progress between majority Black and majority non-Black neighborhoods devastated by Hurricane Katrina. In investigating this
question, care must be taken to disentangle racial inequalities in relief and reconstruction efforts from preexisting racial inequalities. Although preexisting inequalities are an important matter in their own right, it would be unfair to judge government disaster relief and reconstruction resource allocation based on factors that preceded the disaster. The following section discusses the conditions under which a blind force of nature may racially discriminate, and how such “blind discrimination” can be taken into account when evaluating government disaster.

Racial Discrimination by a Blind Force of Nature?
In a residentially integrated area, a localized random force of nature would affect a roughly proportionate number of residents from each social group. In a residentially segregated area, however, disproportionate impact is much more likely, even if segregated settlement clusters share the same socioeconomic characteristics and risk levels. This is attributable to the fact that more possible nonproportional than proportional target areas are possible. The top panel of figure 1 illustrates this point: it represents a hypothetical residentially segregated area (rectangle) that is divided between groups A and B at the center line. The circles represent random impact patterns of a blind natural disaster. The solid circle in the center represents the only possible proportional area of impact, while the dotted circles represent a small subset of all possible nonproportional impact patterns. All of the dotted circles falling to the left of the center line

Table 1 Major U.S. Cities with Black Majorities (100,000 or More Total Population)

<table>
<thead>
<tr>
<th>Rank</th>
<th>City</th>
<th>Black Alone or in Combination (percent)</th>
<th>Black Alone (percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Gary, IN</td>
<td>85.3</td>
<td>84.0</td>
</tr>
<tr>
<td>2</td>
<td>Detroit, MI</td>
<td>82.8</td>
<td>81.6</td>
</tr>
<tr>
<td>3</td>
<td>Birmingham, AL</td>
<td>74.0</td>
<td>73.5</td>
</tr>
<tr>
<td>4</td>
<td>Jackson, MS</td>
<td>71.1</td>
<td>70.6</td>
</tr>
<tr>
<td>5</td>
<td>New Orleans, LA</td>
<td>67.9</td>
<td>67.3</td>
</tr>
<tr>
<td>6</td>
<td>Baltimore, MD</td>
<td>65.2</td>
<td>64.3</td>
</tr>
<tr>
<td>7</td>
<td>Atlanta, GA</td>
<td>62.1</td>
<td>61.4</td>
</tr>
<tr>
<td>8</td>
<td>Memphis, TN</td>
<td>61.9</td>
<td>61.4</td>
</tr>
<tr>
<td>9</td>
<td>Washington, DC</td>
<td>61.3</td>
<td>60.0</td>
</tr>
<tr>
<td>10</td>
<td>Richmond, VA</td>
<td>58.1</td>
<td>57.2</td>
</tr>
</tbody>
</table>

Source: U.S. Census Bureau, Census 2000 Redistricting Data (Public Law 94-171) Summary File, Table PL1; cited in McKinnon (2001, 7).

Figure 1 Top Panel. Hypothetical Disaster Impact Patterns (Round) Affecting a Residentially Segregated Area (Rectangle) that Is Divided between Group A and Group B (At the Center Line). Bottom Panel. Percentage of Black and Non-Black Populations Living in Damaged Areas (Based on Figures from Logan 2006, 7).
represent a disproportionate effect on group A, while those falling predominantly to the right of the center line represent a disproportionate effect on group B.

The bottom panel of figure 1 suggests that blind discrimination may explain some of the racial disparities observed after Hurricane Katrina. It plots the pre-Katrina percentages of the Black and White populations located in the areas that were devastated by the hurricane. The percentages are computed from numbers provided by John R. Logan (2006). He combines demographic information from the 2000 Census using tract-level population data and information on damage levels following the definitions of the Federal Emergency Management Agency (FEMA), with some corrections “based on remote sensing imagery from September 2, 2005, made available by the Dartmouth Flood Observatory” (Logan 2006, 2–3).

In the bottom panel of figure 1, “[a]reas with moderate damage or greater” are classified as “damaged.” “Moderate damage” begins where “solid structures sustain exterior damage (e.g., missing roofs or roof segments); some mobile homes and light structures are destroyed, [and] many are damaged or displaced” (FEMA definition, cited in Logan 2006, 2). Urban New Orleans (represented by the center pair of bars in the bottom panel of figure 1) was affected much more severely than suburban New Orleans (right-hand pair of bars) or the Biloxi–Gulfport area (left-hand pair of bars). Within the city of New Orleans, the majority of both Black and non-Black populations were located in the areas damaged according to the foregoing definition. The percentage of Blacks in damaged areas, however, was substantially larger than that of non-Blacks (see the difference between the center bars in the bottom panel of figure 1). In the Biloxi–Gulfport area and in suburban New Orleans, the proportions of both Blacks and non-Blacks in damaged areas were much lower. However, here, too, a racial discrepancy is visible. Interestingly, however, it is reversed, with a higher percentage of non-Blacks than Blacks living in damaged areas. Logan summarizes the patterns of damage:

In brief an analysis of FEMA storm damage data shows that the storm’s impact was disproportionately borne by the region’s African American community, by people who rented their homes, and by the poor and unemployed. . . . These comparisons are heavily influenced by the experience of the City of New Orleans. Outside the city, there were actually smaller shares of African American, poor, and unemployed residents in the damaged areas. (2006, 1)

While blind discrimination may account for some of the racial disparities observed in the bottom panel of figure 1, there are some systematic differences in risk levels that might contribute to the observed patterns. For example, on the Mississippi Gulf Coast, the direct effects of wind and storm surge, which put valuable properties close to the shoreline at greater risk, were the main cause of damage. Consequently, according to Logan,

Equitability in disaster relief is important beyond the specific circumstances of New Orleans in the aftermath of Hurricane Katrina. Natural disasters such as hurricanes, floods, and earthquakes happen with regularity, and residential clustering along racial and socioeconomic lines is still very common in the United States.

In contrast, damage in New Orleans was primarily attributable to flooding following the breaches in the Industrial and 17th Street canals, which rendered low-lying areas much more vulnerable than higher-lying areas. Because of sedimentary deposits from the Mississippi River, valuable riverfront properties in New Orleans tend to be elevated compared to less valuable properties farther inland. This has led to low-income population concentrations in some low-lying areas. According to Ivye L. Allen, for example,

[A]ffordable housing developments and government subsidized public housing developments are not built in high-valued, higher-elevated areas. In actuality, these developments are usually relegated to being constructed in low-lying areas with a reduced capacity for drainage, which makes them vulnerable to flooding. (2006, 12)

The disparities in property valuation have also led to population concentrations of African American homeowners in areas such as the Lower Ninth Ward, contributing to the racial discrepancy between the center bars in the bottom panel of figure 1. Tragically, the fact that the damage in New Orleans was predominantly caused by flooding rather than wind has contributed to a lack of private funds for reconstruction, as many insurance companies have refused to cover this damage, contending that the flood was not a wind-driven occurrence. 3 Allen writes that “[t]his opinion shared by many insurance companies made people who were not required to purchase flood insurance unable to collect insurance money to cover their damages” (2006, 15).

To evaluate potential racial discrepancies in relief and reconstruction progress, preexisting differences in socioeconomic status or risk levels must be distinguished conceptually from government effort. Because both may affect home reconstruction, it would be best to look at government relief efforts directly tied to the hurricane, which are less dependent on preexisting conditions. The provision of temporary housing, for example, is conceptually independent of preexisting factors, as it was made necessary by the hurricane.

Equitability in disaster relief is important beyond the specific circumstances of New Orleans in the aftermath of Hurricane Katrina. Natural disasters such as hurricanes, floods, and earthquakes happen with regularity, and residential clustering along racial and socioeconomic lines is still very common in the United States. Thus, the challenges in New Orleans are not unique to that city; they are of general interest for researchers of public policy, especially, but not exclusively, in the area of race.

Temporary Housing

As a government service, temporary housing should be available to all citizens regardless of race or other demographic factors. If government reconstruction aid were dispensed equitably, we would
expect residents in affected areas all over New Orleans to have the same amount of temporary housing, regardless of race or economic status. Unfortunately, FEMA data on the number of applications for temporary housing by neighborhood, the number of applications approved, and the number of trailers and alternative accommodations provided are not available to the public. Further, FEMA has not responded to repeated requests for this information. In the absence of this data, the analysis is limited to trailer counts. These counts will be compared to aggregate trailer totals that FEMA provided to Greg Rigamer (2007, section 5).

Using trailers as an indicator of government relief and reconstruction resource allocation has the advantage of representing a unit of measurement with desirable properties. Even if the cost of the trailers is unknown, the assumption can be made that the trailers are of similar value, which translates the trailer count into an interval scale with an absolute and substantively meaningful zero point. To evaluate the distribution of FEMA trailers, however, eligibility criteria must be considered. According to Logan (2006, 14) the criteria are, besides proof of damage, (1) homeownership, (2) sufficient space to place a trailer in the driveway, and (3) restoration of city services (gas, electric, and water).

Further, the possibility that privately purchased non-FEMA trailers may inflate observed counts, especially in economically affluent areas, must be taken into consideration. To complicate matters, no information about alternative accommodations is available. In comparing neighborhoods, therefore, home ownership rates, income levels, and access to alternative accommodations in unaffected areas must be considered. Until actual FEMA data are released, these limitations are unavoidable, but combining the limited data publicly available with hand counts and aerial photography allows preliminary testing of the null hypothesis of equal resource allocation.

**Preliminary Trailer Hand Count**

From May 6 to 16, 2007, a group of 15 volunteers, most of them graduate students in the University of Connecticut’s Department of Public Policy, went to New Orleans to participate in home reconstruction (Campbell 2007). The project was part of Habitat for Humanity’s Baptist Crossroads project in the Upper Ninth Ward. Exploratory excursions in the surrounding areas revealed a striking difference in reconstruction progress between the Lower Ninth Ward, which was still largely uninhabited, and neighboring Arabi in St. Bernard Parish, where rebuilding was well under way. This difference was surprising to the volunteers, as the two areas are directly adjacent to one another, were both similarly affected by the breach of the Industrial Canal, and continue to share similar risk levels. Before Hurricane Katrina, the Lower Ninth Ward was a predominantly African American area (98 percent Black), while Arabi was predominantly White (95 percent White). Using trailers as an easily quantifiable outcome measure, the volunteers conducted an initial trailer hand count, which had to be limited to a manageable geographic area because data could only be collected for part of a single Sunday afternoon. Most of the group’s time was dedicated to reconstruction work.

A one-mile stretch of road was selected, half passing through the Lower Ninth Ward, and the other half through Arabi. Along this stretch of road, all residential or commercial units facing the street (North Claiborne Avenue in the Lower Ninth Ward and W. Judge Perez Drive in Arabi) were counted, along with all trailers on either side of the road. Despite the small sample size (n = 102 units), the difference in trailers was significant at the p < .01 level. Whereas only about 13 percent of the units in the Lower Ninth Ward had trailers, 63 percent of the units in Arabi had them (the white bars in figure 3 give estimated total trailer counts based on this sample). While the small sample size runs counter to expectations of finding any significant difference, the arbitrary but non-random sampling procedure may have biased the results. To investigate this possibility, the results are compared to a complete count from aerial photographs.

**Aerial Trailer Count**

The initial hand count of the Lower Ninth Ward and Arabi was supplemented by a complete trailer count using aerial photographs (Google Earth 2006). Precisely dating the photographs is difficult because the Web site that hosts the images indicates only that the images were “created during 2006.” A somewhat narrower time frame can be deduced, however, from the fact that the images show trailers arriving at the Six Flags parking lot, which FEMA used as a “staging area” (see top-left image in figure 2). The pictures must have been taken some time after FEMA began using the Six Flags parking lot and before the end of July 2006, as the trailer park at Mary Queen of Vietnam Church in Village de l’Est (see top-right image in figure 2) opened in “late July” (Catania and Pham 2006), and the aerial photograph still shows it empty.

To illustrate the striking visual difference between the two comparison neighborhoods, two aerial photographs—one from the Lower Ninth Ward (left) and the other from Arabi (right)—are displayed in the center panel of figure 2. Despite the fact that the two areas are located in close proximity, the photograph of the Lower Ninth Ward contains no trailers, while that of Arabi contains at least eight (framed red; the images in the bottom panel will be discussed later). Figure 3 compares the trailer estimates derived from the hand count (white bars) to the results of the complete aerial count (black bars). The results of the complete count closely match those of the hand count estimates and are well within the margins of error. The following section compares aerial trailer counts to limited aggregate trailer data provided by FEMA to evaluate the degree to which non-FEMA trailers may inflate the aerial trailer count.

**FEMA Trailer Data and Aerial Trailer Counts**

Because privately owned trailers cannot be distinguished visually from FEMA trailers, either on the ground or on aerial photographs, trailer counts obtained through these means may yield exaggerated totals. We should observe two things if overcounting represented a substantial problem. First, aerial counts should exceed totals based on FEMA’s own published aggregate data. Second, this overcounting should be more substantial in wealthier areas compared to less wealthy ones. Of course, it is also important that the data reflect roughly the same time frame—and this is difficult to establish. Greg Rigamer (2007, 10–11) published FEMA trailer totals based on FEMA’s own records without indicating the time frame of data collection. Requests for the original data were referred to FEMA, and the agency has not acted on the request. Based on the file name, the likely publication date for Rigamer’s report is March 30, 2007, and the most current time frame referred to in the report is July 2006 (see census estimates in Rigamer 2007, 3). Therefore, it is reasonable to assume that the reported FEMA trailer numbers by district
Evaluating Racial Disparities in Hurricane Katrina Relief

Figure 2 Aerial Photographs from Google Earth Most Likely Taken in July 2006 (Google Earth 2006)

Figure 3 Trailer Count Estimates Based on Hand Count (White Bars) and Complete Count Using Aerial Photographs (Black Bars)

*)102 Housing or Residential Units Visible from Road. Total trailers counted: 37
in Table 2 represent the state of affairs during roughly the same time period in which the aerial photographs were taken.

Despite the fact that both the FEMA data that Rigamer (2007) provided and the aerial trailer counts are likely to represent a similar time frame in 2006, the aerial counts in Table 2 seem lower for most areas than FEMA’s data. Table 2 lists trailer counts for all 13 neighborhood planning districts based on Google Earth’s (2006) aerial photographs and based on FEMA’s own records (Rigamer 2007). The table provides both absolute counts and counts per 100 residents in damaged areas (the latter is the Census 2000 population figure multiplied by the proportion of damage using FEMA-based estimates; see Logan 2006). The last column in Table 2 lists the ratio of the FEMA totals to the aerial count. Only 4 out of 13 districts have aerial trailer counts in excess of FEMA’s own data (FEMA/aerial ratios < 1). Two of them have relatively high poverty rates: District 2 (Central City/Garden District, with 40 percent of the pre-Katrina population living below the poverty line) and District 4 (Mid-City, with 44 percent). In all other planning districts, the FEMA numbers exceed the aerial counts (ratios > 1). While for some districts, the FEMA numbers are almost twice as large as the number of observed trailers, two districts—District 9 (Lower Ninth Ward) and District 11 (Vivant/Venetian Isles)—have FEMA numbers that are about five times higher than the aerial count (whereby the Lower Ninth Ward contains six times more residents in damaged areas). If distortion attributable to privately owned trailers were responsible for the observed discrepancies, the ratios should be consistently less than one, especially in wealthier districts, and should not exceed one in poorer districts. The observed pattern is inconsistent with this explanation. Future research will have to investigate why the discrepancy is so pronounced in Planning District 9 (Lower Ninth Ward) and Planning District 11 (Vivant/Venetian Isles).

To investigate whether the discrepancies in trailer counting results lead to different interpretations of the results, disproportionately Black planning districts are compared to other planning districts in terms of the number of trailers they received per 100 residents in damaged areas (see the bar chart in the bottom panel of Table 2). Because the African American population proportion in New Orleans is 68 percent, districts in excess of 70 percent can be classified as “disproportionally Black.” The results suggest that, despite differences in counting, the gap in trailers is of comparable magnitude—about three trailers fewer per 100 residents in disproportionately Black districts compared to districts that are not disproportionally Black.

Table 2  FEMA and Aerial Trailer Counts in Planning Districts 1–13

<table>
<thead>
<tr>
<th>Planning District</th>
<th>Est. n</th>
<th>% Poor</th>
<th>% Black</th>
<th>Trailer Count</th>
<th>Trailers per 100</th>
<th>FEMA/Aerial</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. French Quarter, CBD</td>
<td>726</td>
<td>17</td>
<td>13</td>
<td>64</td>
<td>112</td>
<td>8.82</td>
</tr>
<tr>
<td>2. Central/Garden Dist.</td>
<td>22605</td>
<td>40</td>
<td>67</td>
<td>698</td>
<td>592</td>
<td>3.09</td>
</tr>
<tr>
<td>3. Uptown-Carrollton</td>
<td>40838</td>
<td>24</td>
<td>46</td>
<td>1472</td>
<td>1719</td>
<td>3.60</td>
</tr>
<tr>
<td>4. Mid-City</td>
<td>79441</td>
<td>44</td>
<td>82</td>
<td>2284</td>
<td>2082</td>
<td>2.88</td>
</tr>
<tr>
<td>5. Lakeview</td>
<td>23261</td>
<td>6</td>
<td>2</td>
<td>780</td>
<td>819</td>
<td>3.35</td>
</tr>
<tr>
<td>6. Gentilly</td>
<td>42598</td>
<td>15</td>
<td>69</td>
<td>2015</td>
<td>3803</td>
<td>3.72</td>
</tr>
<tr>
<td>7. Bywater</td>
<td>35137</td>
<td>39</td>
<td>83</td>
<td>1297</td>
<td>1468</td>
<td>3.61</td>
</tr>
<tr>
<td>8. Lower Ninth Ward</td>
<td>18069</td>
<td>34</td>
<td>95</td>
<td>82</td>
<td>395</td>
<td>0.45</td>
</tr>
<tr>
<td>9. New Orleans East</td>
<td>79191</td>
<td>19</td>
<td>86</td>
<td>2945</td>
<td>4309</td>
<td>3.72</td>
</tr>
<tr>
<td>10. Village de l’Est</td>
<td>1291</td>
<td>30</td>
<td>55</td>
<td>1172</td>
<td>573</td>
<td>90.77</td>
</tr>
<tr>
<td>11. Vivant/Venetian Isles</td>
<td>2863</td>
<td>30</td>
<td>41</td>
<td>16</td>
<td>86</td>
<td>0.56</td>
</tr>
<tr>
<td>12. Algiers</td>
<td>618</td>
<td>24</td>
<td>56</td>
<td>1348</td>
<td>1503</td>
<td>218.07</td>
</tr>
<tr>
<td>13. N. Aurora/Engl. Turn</td>
<td>51</td>
<td>25</td>
<td>68</td>
<td>178</td>
<td>29</td>
<td>348.69</td>
</tr>
</tbody>
</table>

1 Est. n of residents: Estimated pre-Katrina number of residents in areas damaged by Hurricane Katrina, that is, total district population according to 2000-Census multiplied by proportion of population in damaged areas reported by Logan (2006).
2 Percentage poor: Pre-Katrina percentage of population below poverty line as defined by the U.S. Census Bureau.
3 FEMA information reported by Rigamer 2007.
Other Comparison Neighborhoods

Because planning districts are composed of many neighborhoods with different demographic profiles, a more fine-grained analysis can be obtained by selecting specific comparison neighborhoods that mimic the Black–White contrast of the trailer hand count. A possible explanation for the observed discrepancy between the Lower Ninth Ward and Arabi (see figure 3) could be the fact that the two areas are located in different parishes (the former in Orleans Parish, and the latter in St. Bernard Parish), and that the two parishes were differentially affected by Hurricane Katrina. Flood damage in St. Bernard Parish, even outside Arabi, was so extensive that FEMA could offer no alternative housing other than trailers. In contrast, flood victims in the Lower Ninth Ward and other neighborhoods in Orleans Parish (i.e., the city of New Orleans) could be resettled to less damaged areas within the city.

To test whether this may account for the observed difference, two comparison neighborhoods within New Orleans were selected, Pontchartrain Park and Lakeview. Like the Lower Ninth Ward and Arabi, both neighborhoods are located in low-lying areas (see top panel of figure 4, where Katrina flood levels are shaded). The racial composition of Pontchartrain Park is comparable in pre-Katrina racial composition to the Lower Ninth Ward (97 percent Black), yet economically, it is more similar to Arabi. Lakeview resembles Arabi in both its pre-Katrina racial composition (94 percent White) and its socioeconomic status. According to the 2000 Census, 5 percent of households in Lakeview were below the poverty level; in both Arabi and Pontchartrain Park, about 10 percent of households were below that threshold. In contrast, 35 percent of households in the Lower Ninth Ward were below the poverty level, which makes this neighborhood unique for both the high level of homeownership and the high level of poverty.

All comparison neighborhoods share characteristics that are important for FEMA trailer eligibility. Damage levels were comparable, and the majority of households in all four areas were owner occupied: Pontchartrain Park in New Orleans at 92.1 percent (GNOCDC 2007), Lakeview in New Orleans at about 66 percent (Logan 2006, 11), the Lower Ninth Ward at 62 percent (Allen 2006, 12), and Arabi in neighboring St. Bernard Parish at approximately 75 percent (Riouxf 2006).

All four comparison areas consist largely of single-family homes with sufficient space to put trailers. Public utilities were restored in most areas, although in January 2007, the “Lower Ninth Ward [was] the only planning district without full electric and gas service” (Wiley 2007, 4). According to Maya Wiley, only 87 percent of the coverage in the Lower Ninth Ward had been restored by that time.

The bottom panel of figure 2 shows aerial trailer counts for Pontchartrain Park (left) and Lakeview (right). The visual contrast in these two snapshots is not as striking as that between the Lower Ninth Ward and Arabi (see center panel in figure 2). A per capita count of trailers in figure 4, however, reveals a striking contrast. The left-hand pair of bars gives the number of trailers per 1,000 pre-Katrina residents in the two predominantly African American comparison neighborhoods, and the right-hand pair of bars gives those of the two White neighborhoods. In all comparison neighborhoods, only residents in owner-occupied dwellings in areas classified as damaged according to FEMA definitions were considered (for damage definitions, see Logan 2006).

The 70 trailer per 1,000 difference between Lakeview and Arabi (right-hand pair of bars in figure 4) is consistent with the hypothesis that differences between parishes account for some of the observed discrepancies. Yet a 30 trailer per 1,000 difference remains between Lakeview and Pontchartrain Park, even though the two neighborhoods are socioeconomically comparable and the homeownership rate in Pontchartrain Park is substantially higher. In contrast, the difference between the two economically distinct African American neighborhoods amounts to only 13 trailers per 1,000 inhabitants.

The relatively low trailer count in Pontchartrain Park is surprising given the neighborhood’s socioeconomic profile and its history as an upscale African American neighborhood with political connections. In this regard, it stands in sharp contrast to the Lower Ninth Ward. Pontchartrain Park was founded after World War II during the Jim Crow era. Gwendolyn Thompkins (2005), a resident of the neighborhood, states, “While New Orleans has always been an integrated city, Pontchartrain Park was simultaneously a step forward and a step back. It was a product of segregationist thinking. But ‘The Park, as we call it, also gave Black New Orleanians all the benefits of suburbia within city limits.” It was the residence of mayors Dutch Morial and Marc Morial, as well as district attorney Eddie Jordan. The community developed around a golf course that African American golf expert Joseph M. Bartholomew, one of New Orleans’ wealthiest African Americans at the time, built in the 1920s. His story is a bitter example of Jim Crow in New Orleans. According to Farth Dawson (1996), Bartholomew, born in 1881, was a self-taught golfer who started his career as a caddie. Dawson writes:

[S]killed players took their best shot at beating him. . . . After several games with Freddie McLeod, who won the 1908 U.S. Open, McLeod hired Bartholomew as his assistant. . . . After being sent to New York by a wealthy Metairie Golf Club member to study golf course architecture in the 1920s, he built [golf courses] throughout southeast Louisiana and one in the state of Mississippi . . . Sadly, Bartholomew was not allowed to play, not a single round, on any of the courses that he built because of the color of his skin.

In the aftermath of Hurricane Katrina, water spilling over the floodwall of the Industrial Canal, a surge of water entering through the Mississippi River Gulf Outlet Canal, and water from breaches in the London Avenue Canal flooded Pontchartrain Park. If socioeconomic status, or political connections, would explain all discrepancies in observed federal relief and reconstruction measures, one would expect the trailer count in Pontchartrain Park to fall somewhere between those of Arabi and Lakeview, not closer to the Lower Ninth Ward than to any of the other comparison areas.
The degree to which political factors may have influenced trailer distribution can be further analyzed using voter turnout information provided by the Louisiana Secretary of State (2004) for the presidential election in the year before Hurricane Katrina. According to Schneider and Ingram, “groups who stand to gain the most from political action, such as the poor and minorities, often fail to mobilize and, in fact, have the lowest rates of participation” in elections (1993, 344).

Unfortunately, New Orleans’ planning districts do not coincide with electoral wards and precincts. To combine the two data sets, electoral wards and precincts were matched with planning districts based on address changes for polling places listed on a notification issued by the NAACP Legal Defense and Education Fund (2006). This notification lists election ward and precinct numbers, along with the old polling place addresses and the address changes prompted by Hurricane Katrina. The location of the old polling place addresses in planning districts was determined based on planning district boundaries outlined on the Pre-Katrina Data Center Web Site of the Greater New Orleans Community Data Center (2007) and Mapquest.com. Voting information was available for 53 neighborhoods that sustained up to 100 percent damage from Hurricane Katrina. The relationship between voter turnout (the percentage of registered voters who voted in the November 2, 2004, election) in the 53 neighborhoods and the number of trailers per 100 residents observed in the aerial post-Katrina photographs fails to reach

Figure 4 Top Panel. Four Comparison Areas in Katrina Flood Plain (Chubb 2006, Slide 15). Bottom Panel. Aerial Trailer Counts.
significance at conventional levels (Spearman’s rho: $r = -0.052, p = .706$). A significant relationship emerges between the number of trailers per 100 residents and the proportion of a neighborhood’s population living in damaged areas. Disconcertingly, however, this correlation is negative, suggesting that greater damage was associated with proportionally fewer trailers ($r = -0.580, p = .01$).

**Conclusion**

A number of factors render these trailer counts inconclusive with regard to the possibility of racial differences in government-provided reconstruction services. Distinguishing FEMA trailers from privately owned ones is impossible, and the number of home owners who applied for trailers compared to the number who were provided with alternative accommodations is unknown. Without complete data from FEMA at the neighborhood level, these questions cannot be answered, although FEMA’s unwillingness or inability to provide those numbers might be interpreted as evidence in its own right. Once the data become available, their accuracy should be examined, as aerial counts seemed to yield lower rather than higher counts based on the limited FEMA data published to date (Rigamer 2007).

Several factors may contribute to the observed racial discrepancies. A natural disaster may blindly discriminate. The analysis at the beginning of this paper suggests that residential clustering is the only precondition for this to occur, and it would occur even if socioeconomic differences were absent. In reality, however, such preexisting differences play a powerful role by predisposing some people to greater risk than others. During Hurricane Katrina, for example, residents of more affluent waterfront communities in the Biloxi–Gulfport area were at greater risk of incurring wind damage, while less affluent communities in lower-lying areas of New Orleans were at greater risk of incurring flood damage. Systematic settlement patterns exposing lower-income New Orleanians to higher flood risk have a long tradition in the city, fueling rumors that the levees may have been sabotaged intentionally to protect higher-lying, wealthier areas from flooding in the aftermath of Hurricanes Betsy (1965) and Katrina (2005). These rumors were historically not without precedent. Henkel, Dovidio, and Gaertner write that during the great flood of 1927, “the government dynamited a levee south of New Orleans to relieve pressure on the city proper, flooding land owned by rural and poor farmers” (2006, 113).

From the perspective of democratic theory, evidence of differential government relief and reconstruction efforts after a natural disaster would be even more troubling than preexisting inequalities. Although the evidence provided here is not conclusive, it highlights the need for further research. If racial bias in government relief and reconstruction efforts could be demonstrated, several factors would have to be distinguished in order to explain the problem.

First, it is possible that government policies themselves are inequitable. For example, it is conceivable that FEMA as a federal agency under a Republican administration could have viewed aid to Republican-ruled Mississippi as politically more desirable than aiding Democratic-ruled Louisiana. As long as partisanship is polarized along racial lines, this could produce racial inequalities. This possibility has not been investigated here, as the analysis focused on New Orleans alone, keeping federal and local political constellations constant.

Of course, preexisting inequalities can interact with government decisions to produce structural inequality. For example, even if trailers are available to everyone who sustained damage, knowledge about how to apply or how to obtain information on the process may differ based on preexisting socioeconomic differences. Second, it is possible that otherwise equitable policies are implemented in inequitable ways. This could be attributable to racial discrimination on the part of individual government agents, or to individual differences on the part of eligible recipients in demanding government support. Conscious and unconscious racial attitudes (see, e.g., Craemer 2007, 2008; Fazio et al. 1995; Greenwald, McGhee, and Schwarz 1998; for a discussion, see Henkel, Dovidio, and Gaertner 2006) may influence either of these individual-level factors.

Further research at the intersection of individual-level racial attitudes, structural factors, and political decision making is desirable to understand the distinct underservicing patterns of major African American neighborhoods observed in this study. In a city that has been ruled by a majority African American city council for decades (the racial composition of the city council changed as recently as November 17, 2007; see Nossiter 2007), it is difficult to understand why African American neighborhoods such as the Lower Ninth Ward or Pontchartrain Park should be disadvantaged compared to predominantly White neighborhoods. One would have to engage in conspiracy theorizing to entertain the possibility that FEMA as a federal agency may intentionally underserve African American neighborhoods to purposefully undermine the majority African American Democratic leadership of New Orleans.

Further, this conspiracy theory would not fully explain local political decision making regarding the Lower Ninth Ward. For example, it was well within the jurisdiction of local government to return services to the Lower Ninth Ward earlier. The failure to do so could have rendered otherwise eligible trailer recipients ineligible, because one of FEMA’s application requirements is that services are restored. This example demonstrates that federal decision making is not necessarily independent of local government decisions.

Such local decisions might be color-blind, focusing on the city’s tax base and its business interests rather than on the economically disadvantaged. A racial gap may then be the result of preexisting economic inequalities. However, this does not explain the slow recovery of Pontchartrain Park, with its middle-class profile, history of political connections, and high voter turnout.7

Another possibility is that ingrained pro-White and anti-Black attitudes may be at work, not only among racially conservative White politicians, but, on an unconscious level, among Whites and non-Whites, politicians and non-politicians alike. The theoretical
interpretation of racial attitudes as a culturally shared phenomenon once formed the guiding paradigm in racial psychology. At the paradigm’s height, the U.S. Supreme Court cited the findings of the African American sociologists Mamie and Kenneth Clark (1947) in its Brown v. Board of Education ruling. The Clarks’ famous “dolls test”—administered, among others, to the plaintiffs in Brown—suggested that legal segregation, along with other forms of racial discrimination, led African American children to internalize the dominant anti-Black biases of American racial culture.8

This cultural interpretation went out of style when research methods shifted from behavioral observation to explicit survey measures, as African American survey respondents tend to express strongly pro-Black attitudes (see, e.g., Tate 1993). In recent years, however, the cultural interpretation has received renewed support from implicit racial priming studies. These studies tend to find unconscious pro-White and anti-Black associations not only among White respondents (e.g., Greenwald, McGhee, and Schwarz 1998), but also among non-White respondents (e.g., Dasgupta et al. 2000), and even among African Americans (e.g., Ashburn-Nardo, Knowles, and Monteith 2003; Craemer 2007, 2008; Jost, Banaji, and Nosek 2004; Nosek, Banaji, and Greenwald 2002). Although no consensus has yet been reached about the interpretation of these unconscious racial association measures, the possibility that culturally shared racial biases may interact with other structural and political factors to create the observed discrepancies in the distribution of Hurricane Katrina relief and reconstruction resources deserves further investigation.

As long as the reconstruction of New Orleans is not complete, further research could investigate the interaction between cultural, structural, and individual-level factors that affect decisions about the disposition of properties that remain vacant as a consequence of Hurricane Katrina. Similarly, decisions about providing incentives for evacuees from different neighborhoods to return could be investigated—such as the availability of jobs, housing, schooling, and services.

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Although not directly analogous, a comparison of these reconstruction rates to the reconstruction progress in Banda Aceh, Indonesia, after the tsunami of December 26, 2004, yields interesting results. According to the World Bank (2007), less than two years after the tsunami, 45 percent of the 130,000 destroyed houses in Banda Aceh had been (or were in the process of being) reconstructed. The U.S. government was “one of the largest contributors” (Rose 2007) to this effort.

2. The terms “Black” and “African American” are used interchangeably in this paper. To emphasize the socially constructed character of the race concept, group names are capitalized even if they refer to colors (e.g., Black, White, Black Americans, White Americans).

3. It is hard to imagine how the flood damage could have occurred without the storm surge that, in turn, caused the levees to fail.

4. Participants were Jennifer Anastasio, Karen Biedermann, John Colosene, Thomas Craemer, Kelly DiBascle, Paul Dzurec, Chris Farmer, Tina Harrington, Ching-Mei Lin, Jacqueline Platt, Barbara Rua, Jessica Schaffer-Helmecki, Tara Spain, Ryan Tully, and Shane Van Hoesen.

5. Trailer parks in the vicinity of Arabi were excluded from the count. Only trailers that appeared to be located on individual properties were counted. No trailer parks were detected in the Lower Ninth Ward. Again, comparison to FEMA documentation would be desirable because the location of trailers was judged only visually.


7. In 2004, voter turnout Pontchartrain Park was 72 percent, not much lower than in Lakeview (75 percent) but substantially higher than in the Lower Ninth Ward (59 percent).

8. The effect of cultural biases on public policy is also addressed in the literature on the social construction of target groups (e.g., Berger and Luckmann 1966; Schneider and Ingram 1993).

References


