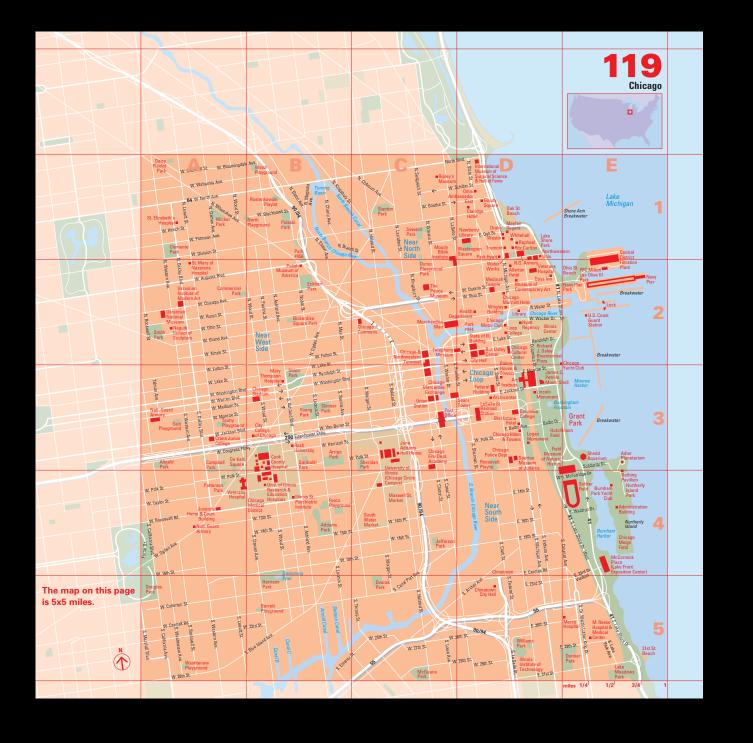
# color

value intensity hue

# value light to dark

# value light to dark

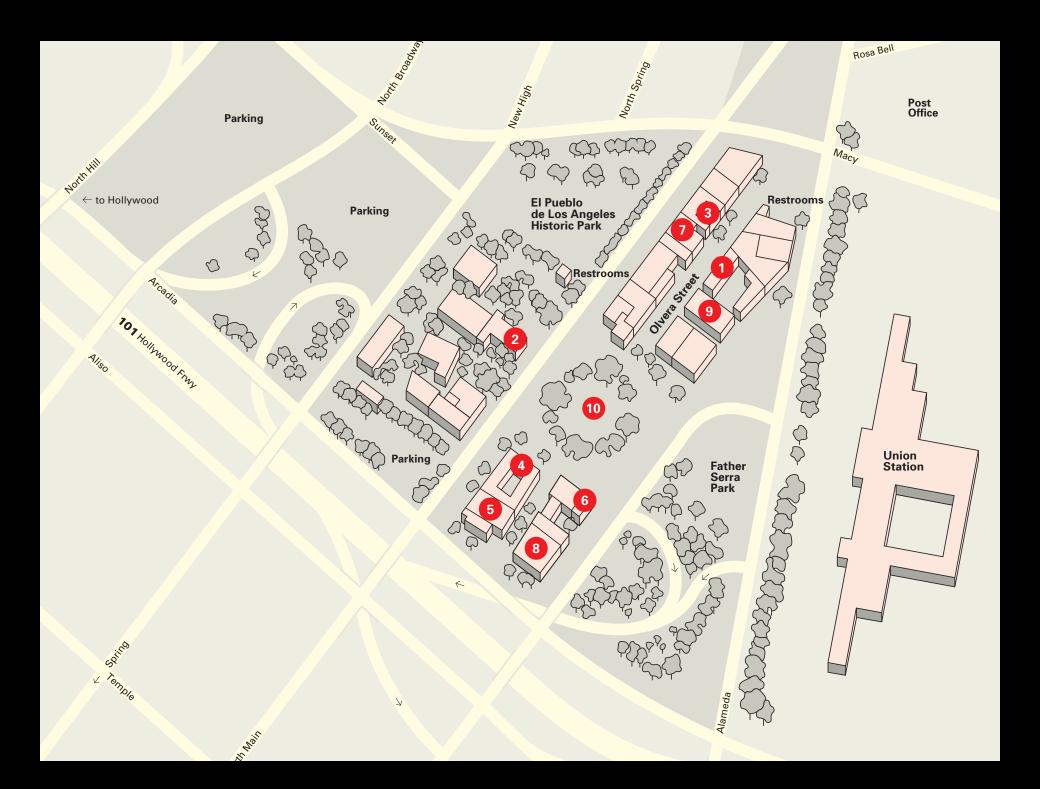








# **intensity** bright to dull



Grand Central 125th Street Fordham Mount Vernon Pelham New Rochelle Larchmont Mamaroneck Hamison Port Chester

#### North varies from 30 to 67 degrees on the map below to accomodate the linear route

#### O miles

Average speed of the train is 60-65 mph with 90 mph the maximum speed

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#### The Railroad

The four components of a railroad:

- I Human organization
- 2 Rolling stock: engine, cars
- 3 Fixed plant: track, right of way, bridges and buildings
- 4 Financial structure



The Pierpont Morgan Library, a beautiful neo-Italian Renaissance building, houses rare books, drawings, prints and manuscripts collected by the financier and railroad tycoon J. P. Morgan

Convention

Penn .

Station

East River

Morgan Library

Center

North

River

World

Trade Center

City

The Harlem River was once a busy ship canal; today the drawbridge is maintained but seldom used. Before the Harlem River was dredged out, Manhattan was not an island.



After emerging from the tunnel at 97th street, one can catch fleeting glimpses of Central Park from the train along street intersections.

> Lincoln ■ Center

Grand

Central

**♦** Central

Park

Park Avenue

♦ Carl Schurz

Columbia

University

North

General .

CCNY

NY Dept. of Welfare Triborough

125th

Street

Lincoln Hospital

Mary Park

"Neither other Ar steel hig handsor every de of its tra

New York, N

a guided tour



Greenwich Cos Cob Riverside Old Greenwich Stamford Noroton Heights Darien Rowayton South Norwalk East Norwalk Westport Green's Farms Southport Fairfield Bridgeport Stratford Milford New Haven

New Amsterdam, founded in 1615, was renamed New York fifty years later after the Duke of York. Now our most populated city, New York has a density of 52,378 people per square mile (or about 1.88 persons per square foot).

The old Grand Central Station was one of the great buildings of New York City last century. Today we use Grand Central Terminal completed in 1913. Though originally handling many long-distance trains, it is now strictly a commuter station with New Haven and Poughkeepsie as the farthest destinations.

♠ Madison

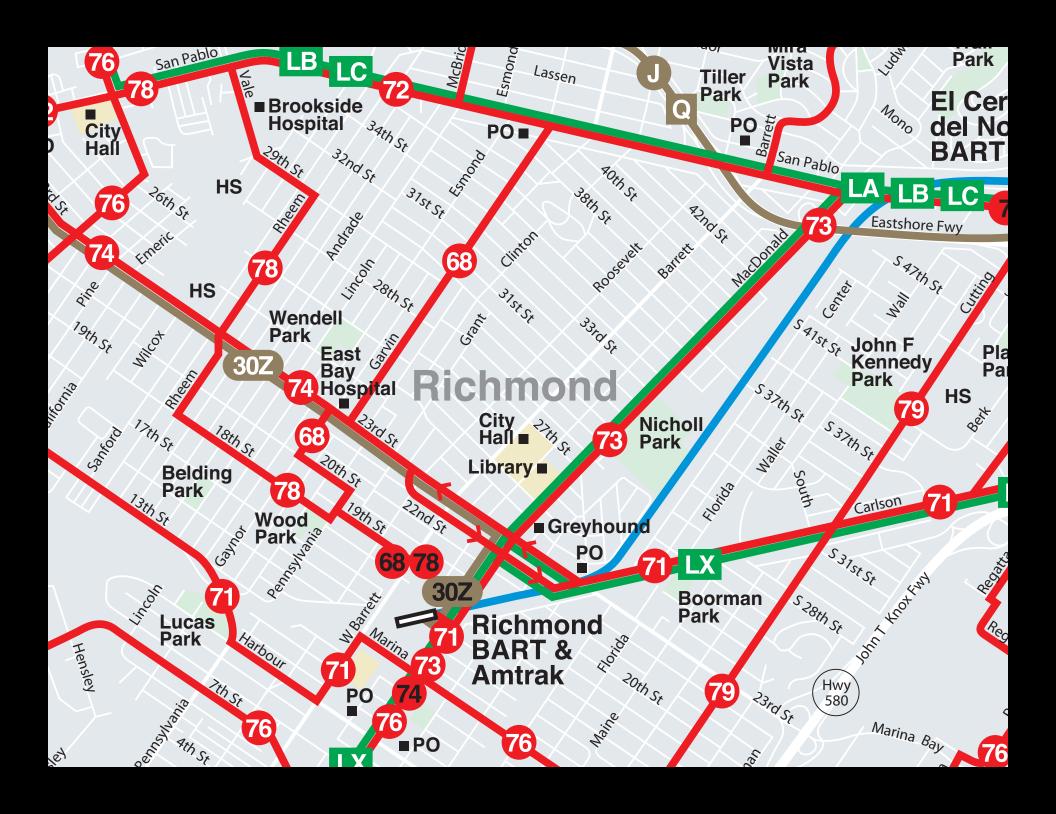
Square Park



Before a roof was built over the recessed railroad lines, the land along Park Avenue was inhabited by shanties of squatters who herded goats, slaughtered pigs, and scavenged coal dumped by locomotives. After the coal smoke and soot were eliminated through the railroad's electrification project, Park Avenue blossomed into an important commercial center. Under its pavements today, the railroad carries 185,000 commuters.







### **Lights of Madness**

For the first time, researchers isolate the venues of hallucination deep inside the brain. Mainly, they suggest, it's a wiring problem

Road Map of the

A new way of analyzing the brain

allows neuroscientists to capture

events as the hallucinations of a

rolling, disembodied heads and

heard them barking orders to him.

The bright areas pinpoint regions

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Scale: shows degree of significance

when it stopped ,the patient pressed a button with his right thumb to alert the re-

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BY SHARON BEGLEY

OW HORRIBLE!" screamed one voice. "Don't act stupid," warned another. Such voiced are the familiar, and unshakable, companions of the group of schizophrenics who volunteered for a pathbreaking study. Like unwanted kibitzers at a bridge game, the voices inside the men's heads comment on their every thought and deed. But this time the voices were mouthing off in the presence of neuroscience's version of a hidden camera: the brainimaging machine called Positron Emission Tomography (PET) Last week an international team including David Silbersweig and Emily Stern of Cornell Medical Center in New York and colleagues in London announced results of the first clinical study using PET in an unprecedented way. PET had caught six schizophrenics in the act of hallucinating, something never before captured on a

brain scan. Their results, reported in the journal Nature, "pinpoint [brain] structures implicated in schizophrenia," says neuroscientist Monte Buchsbaum of the Mount Sinai School of Medicine in New Yorkand may one day suggest new treatments for the devastating disease that strikes more than 2 million Americans.

Schizophrenia, from the Greek words for "split"and "mind," is marked by disordered thought, social withdrawal and hallucinations (though not the "split personality" its etymology implies). One 23-yearold man in the PET study regularly saw vivid scenes-in living color and full motion-of rolling, disembodied heads that ordered him around. To spy on what the brain was doing during such hallucinations, the researchers had six patients take turns lying in the PET scanner, where they were told to relax and close their eyes. Whenever a voice piped up, and again

Primary motor and sensory cortex: Multimodal-association Paralimbic cortices: involved associated with right-thumb movement, it cortex: involved in complex in integrating thoughts Schizophrenic Brain showed activity when patients pressed a processing and integration of and emotion button to report hallucinations Auditory-association cortex: Visual-association cortices: responsible for processing responsible for processing SOURCES: DAVID SILBERSWEIG, M.D.; EMILY STERN, M.D. RESEARCH BY: BEAD STONE—NEWSWEEK complex sound and language complex visual information

tivity in areas deep in the brain, running from behind the forehead down toward the spinal cord. Normally these regions, with names like thalamus, hippocampus and striatum, are involved in generating the life of the mind, sometimes out of sights, sounds and memories but often out of other mental activity. They may create the often bizarre images in dreams, too, in response to little electrical tickles from deeper in the brain. The regions also integrate current and past experiences, draw-

ing together a perception (the sight of a shadowy figure) with a memory (the last time I walked this way ...) and a feeling (uh-oh). Based on the structures that switched on during hallucinations, it seems that at least some of the roots of schizophrenia may lie in a wiring problem deep inside the brain.

Equally striking was what did not light up in the 20-plus PET scans of each patient: the part of the brain that monitors thoughts an actions. This prefrontal lobe

may act as a "reality check," says Buchsbaum, a PET-scan pioneer. "In schizophrenics the prefrontal lobe is not checking images against sensory information and memory" to determine whether they are real, imagined or hallucinated, he says. Perhaps it is this failure of the prefrontal cortex that makes schizophrenics confuse internally generated voices with, for instance, the voice of God or a CIA transmitter. "The brain," explains Silbersweig, "is creating its own reality."

The finding does not have any immediate implications for treatment, but by deepening researcher' basic understanding of the disease it may have some eventually. Buchsbaum, for instance, suggests that "this finding could indicate that the defect in schizophrenia is not just chemical"-the assumption behind the standard drug regimen. That may be why none of the five schizophrenics in the study taking medication was helped by it (the sixth patient had never been on medication). The PET results suggest that whole new treatments may be needed. If the aberrant circuit identified by the scans are a root cause of schizophrenia, it may even be possible to treat patients surgically.

This week in San Diego, at the annual meeting of the Society for Neuroscience, half a dozen researchers are offering various takes on the roots of schizophrenia. The jury is still out on whether schizophrenia is the result of a genetic defect, an injury or disease during fetal development, an obstetric complication or some combination of these. But as the cartographers close in on what has gone wrong in the disease, they may also figure out what has made things go wrong in the first place. To the schizophrenics, of course, the only thing that really matters is silencing the voices once and for all.

#### 'Don't Act Stupid,' Scolded the Voice

In these composite images of the brains of five schizophrenics, a PET scan identifying regions that became active when imaginary voices were heard is superimposed on an MRI showing brain structures. When the patients heard voices, networks deep within the brain lit up. These networks usually generate mental activity and integrate perceptions, emotions and memories.

Ventral striatum: modulates the circuits of the brain involved





Thalamus: modulates the patterns of brain activity associated perception



Anterior cingulate gyrus: involved in attention, motivation and initiation of actions

#### The Normal Brain

brain scan of five healthy volunteers



they heard actual voices. The auditory cortex, which processes sound, lit up. Deep networks of the brain that seem to generate the voices schizophrenics hear remain quiescent.

NEWSWEEK NOVEMBER 20, 1995 NEWSWEEK NOVEMBER 20, 1995

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Schizophrenic Brain

A new way of analyzing the brain images generated by PET scans allows neuroscientists to capture such involuntary, ephemeral events as the hallucinations of a schizophrenic. This scan shows a patient at the very moments he saw rolling, disembodied heads and heard them barking orders to him. The bright areas pinpoint regions of heightened neural activity—and provide a cartography of this mental illness.

**Scale:** shows degree of significance of activity during hallucination

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The Normal Brain

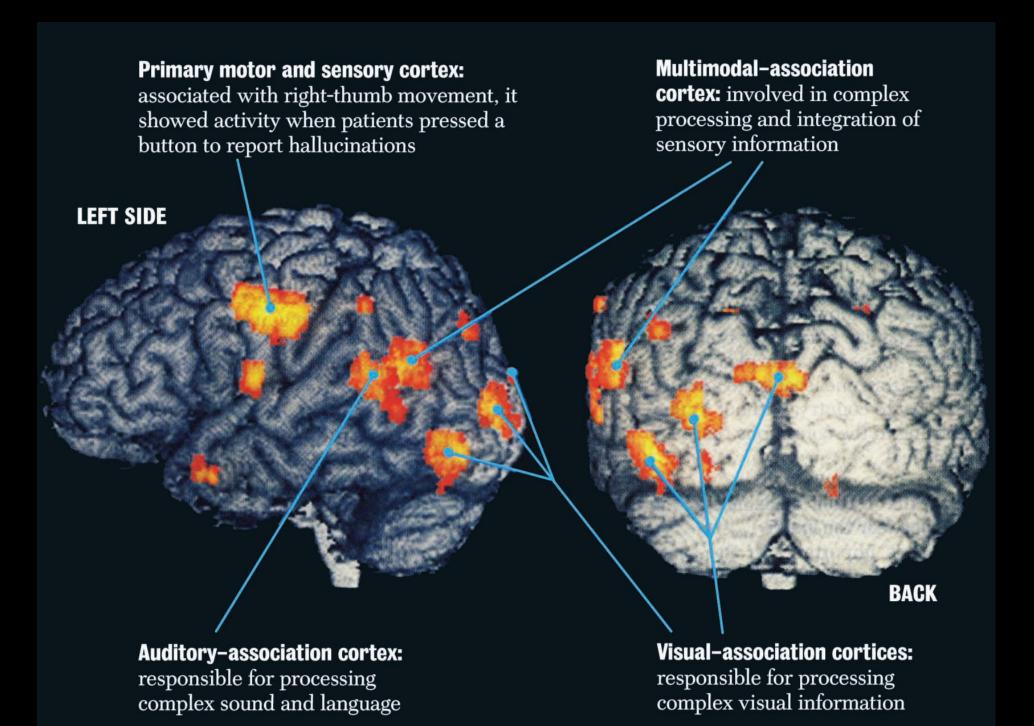
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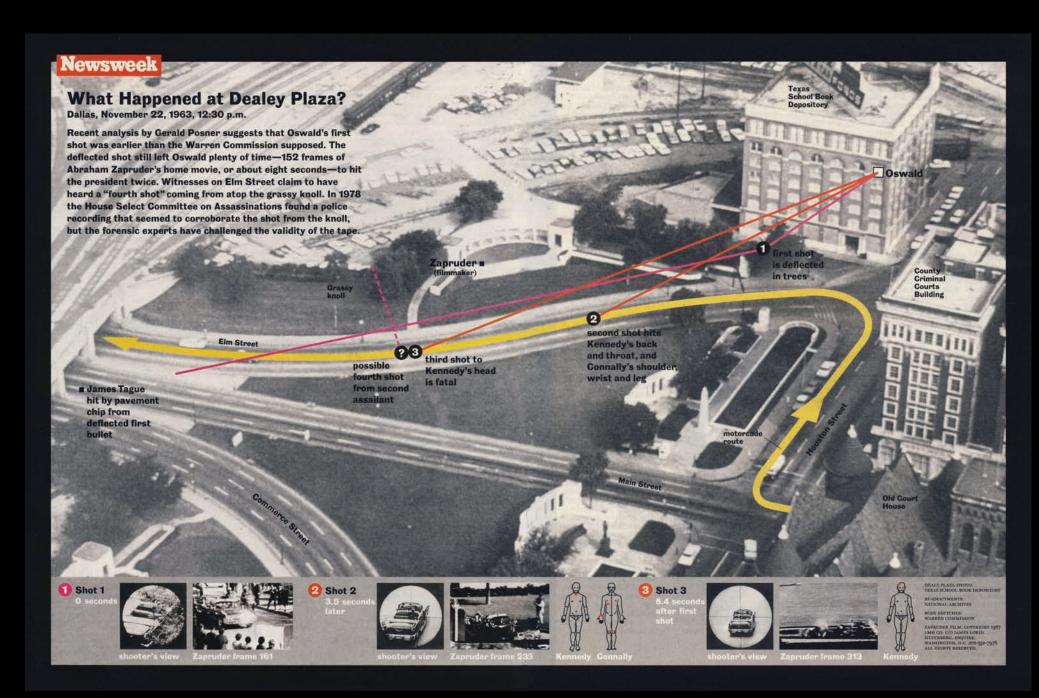
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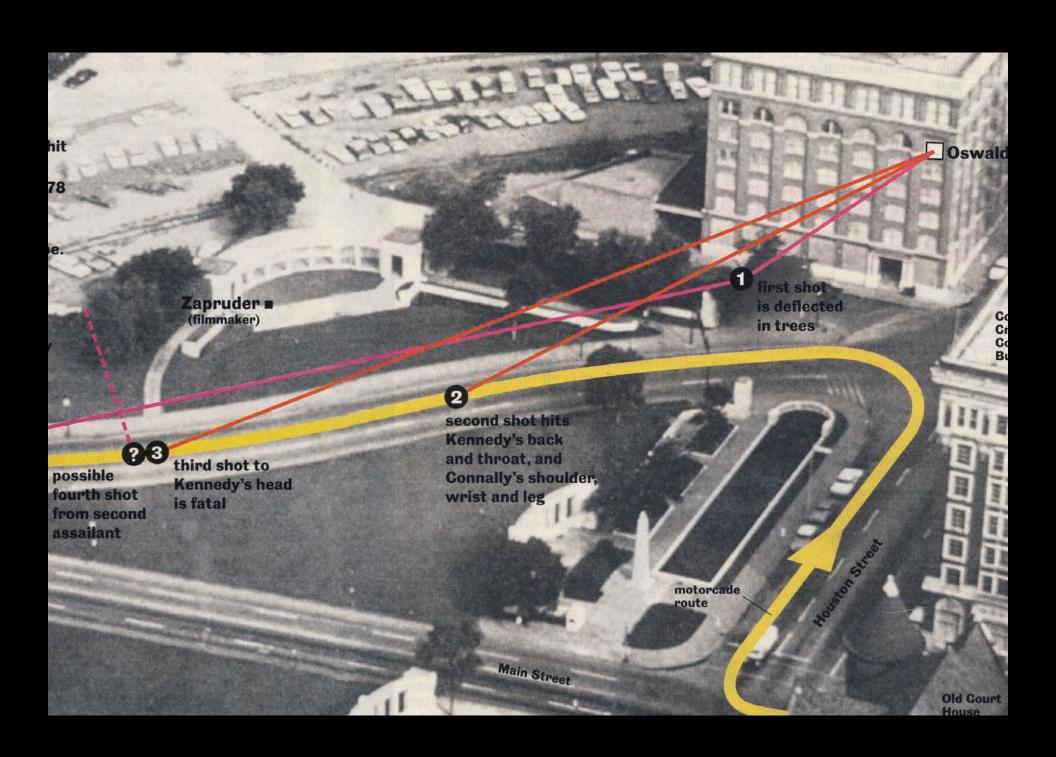
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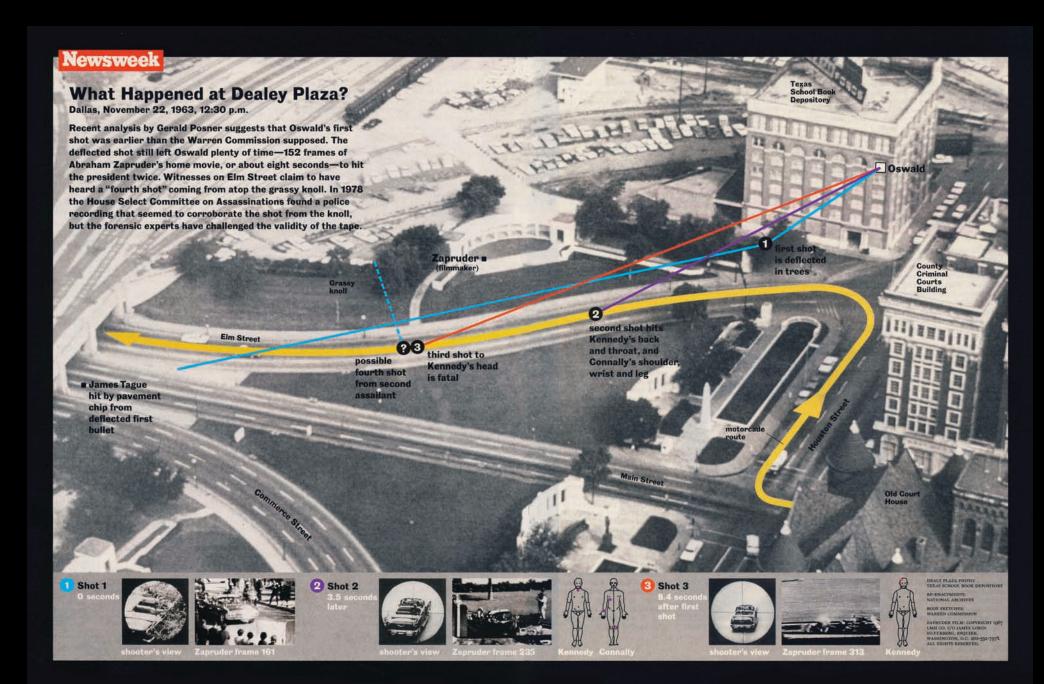
NEWSWEEK NOVEMBER 20, 1995 NEWSWEEK NOVEMBER 20, 1995

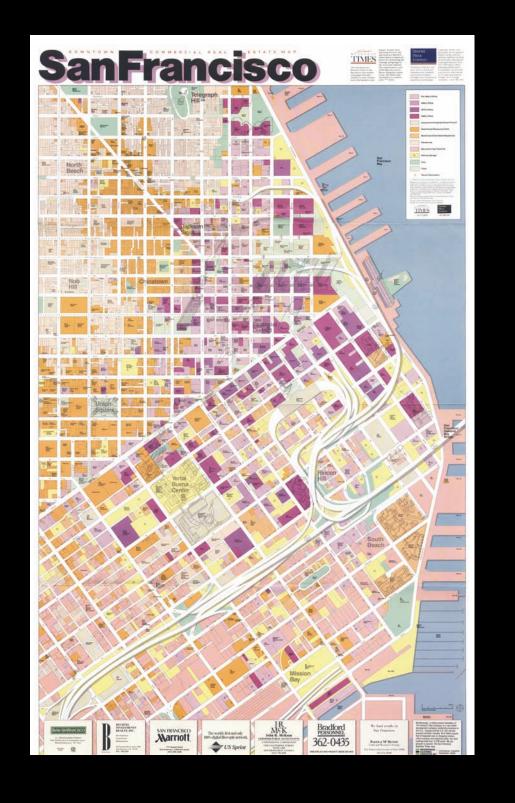


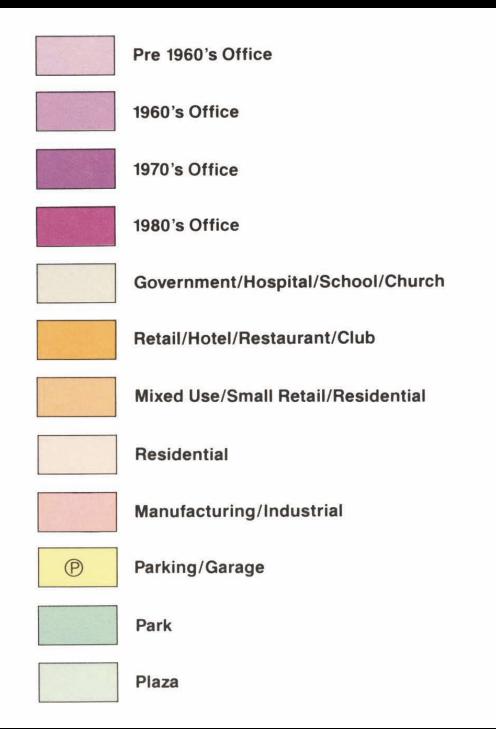
# **hue** warm to cool



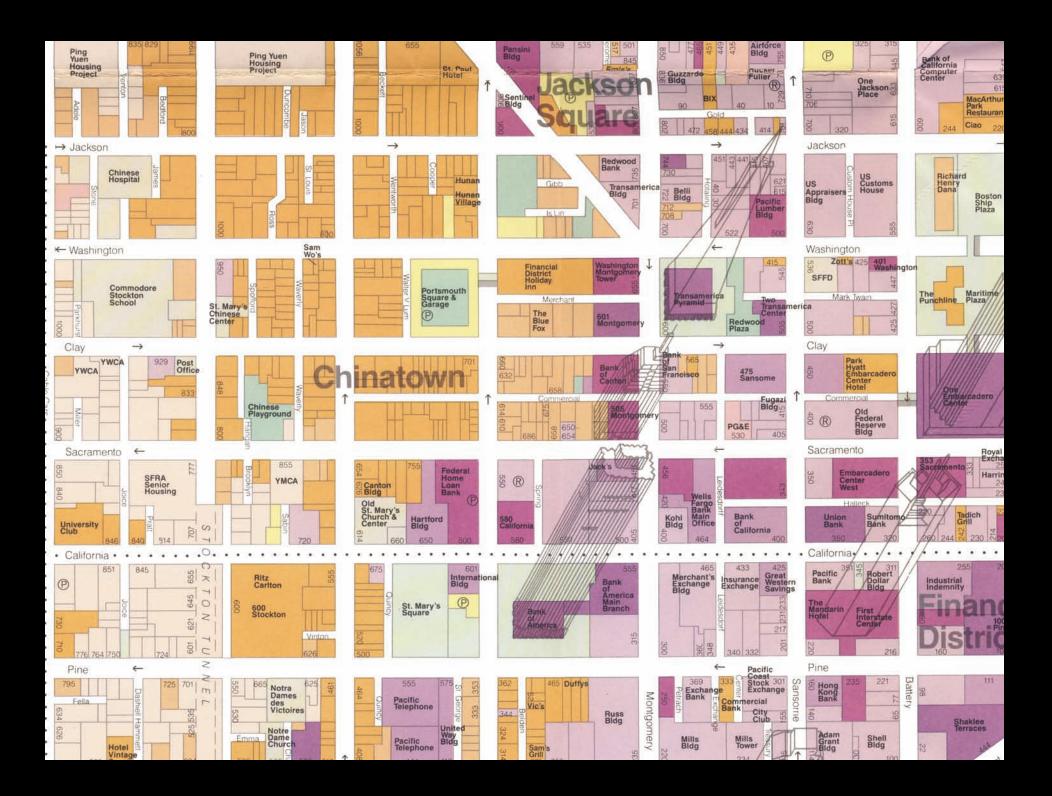








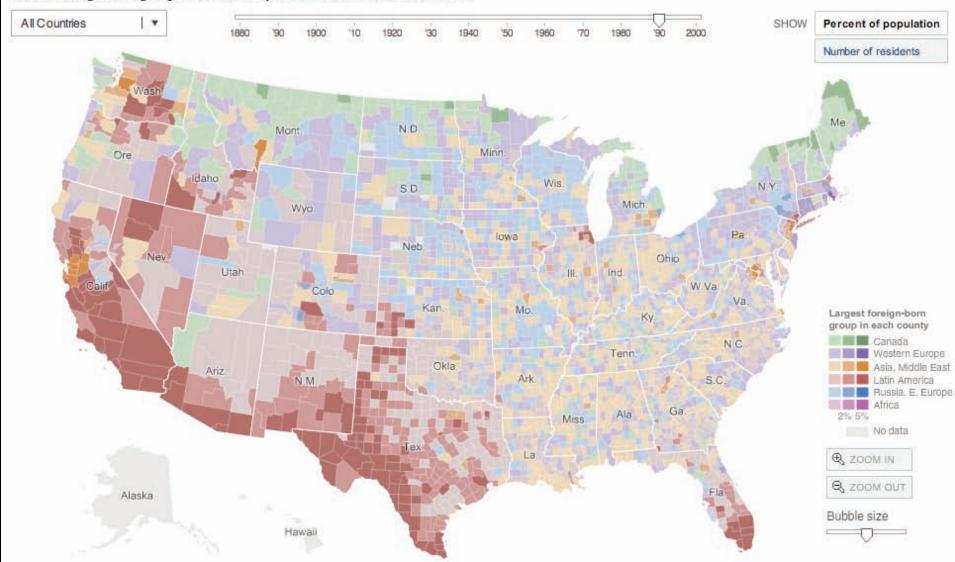






### **Immigration Explorer**

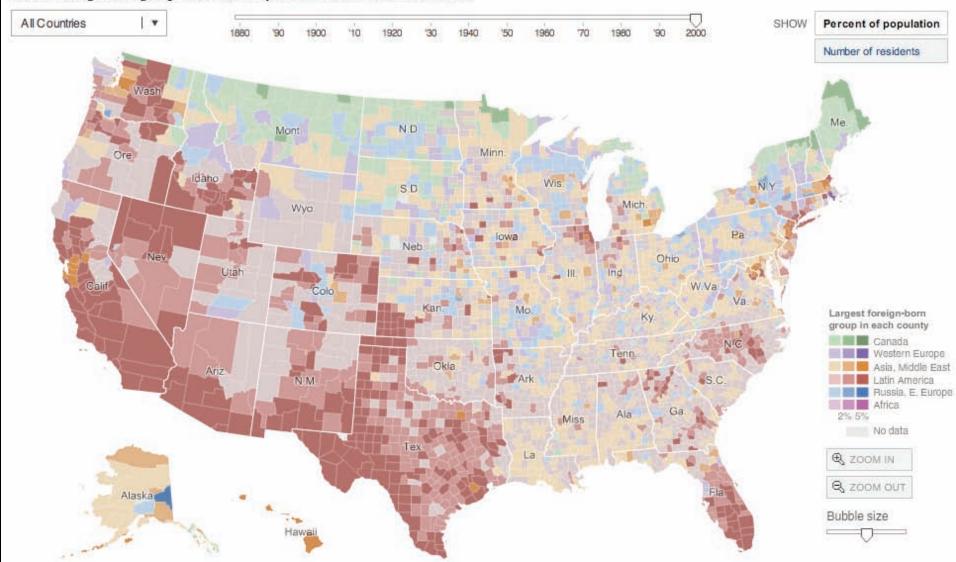
Select a foreign-born group to see how they settled across the United States.



Note: Due to limitations in the Census data, foreign-born populations are not available in all areas for all years.

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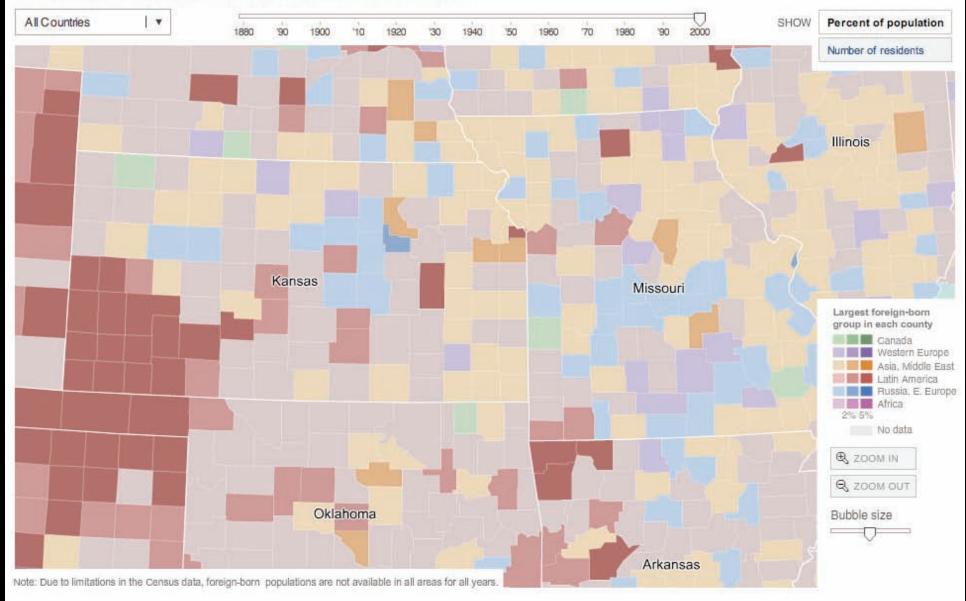
### Largest foreign-born group in each county





### **Immigration Explorer**

Select a foreign-born group to see how they settled across the United States.



### Mapping Foreclosures in the New York Region

A New York Times analysis found that foreclosure rates in the region were highest in areas with high minority populations. Zoom in to see foreclosures at the street level.



Sources: PropertyShark; the Warren Group; American Foreclosures; Long Island Real Estate Report; Western Technologies Group; Furman Center for Real Estate and Urban Policy; Westchester County clerk

Matthew Bloch and Janet Roberts/The New York Times

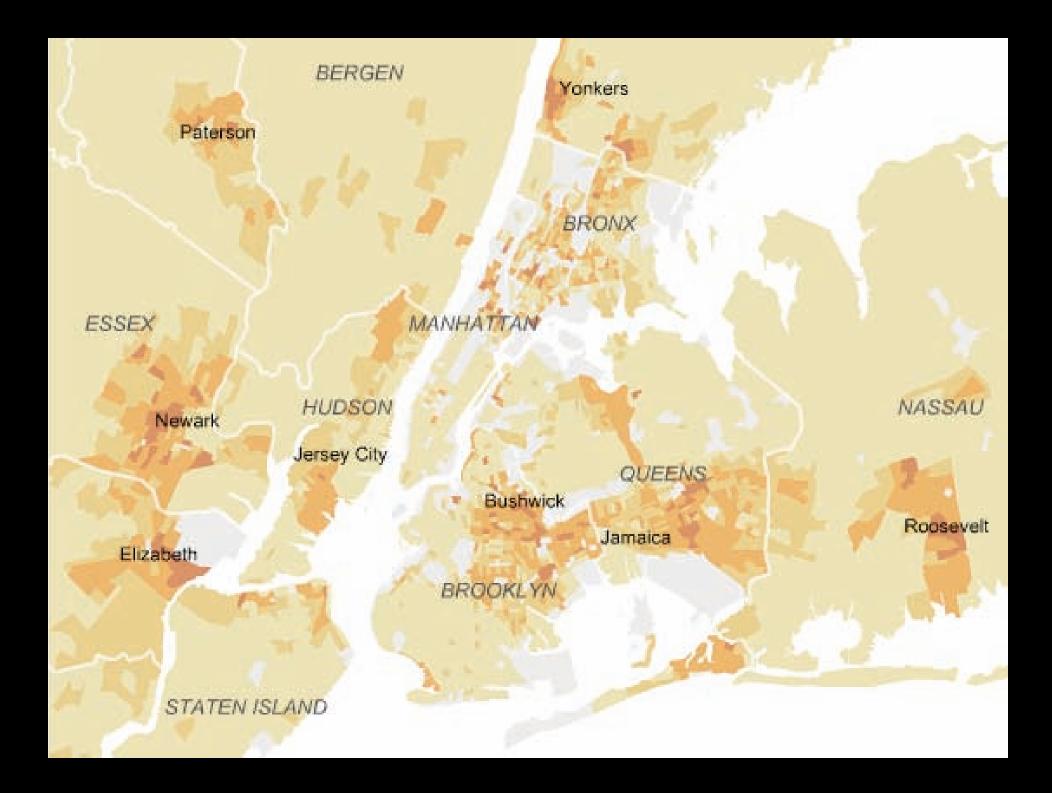
Home World U.S. N.Y. / Region Business Technology Science Health Sports Opinion Arts Style Travel Jobs Real Estate Automobiles Back to Top

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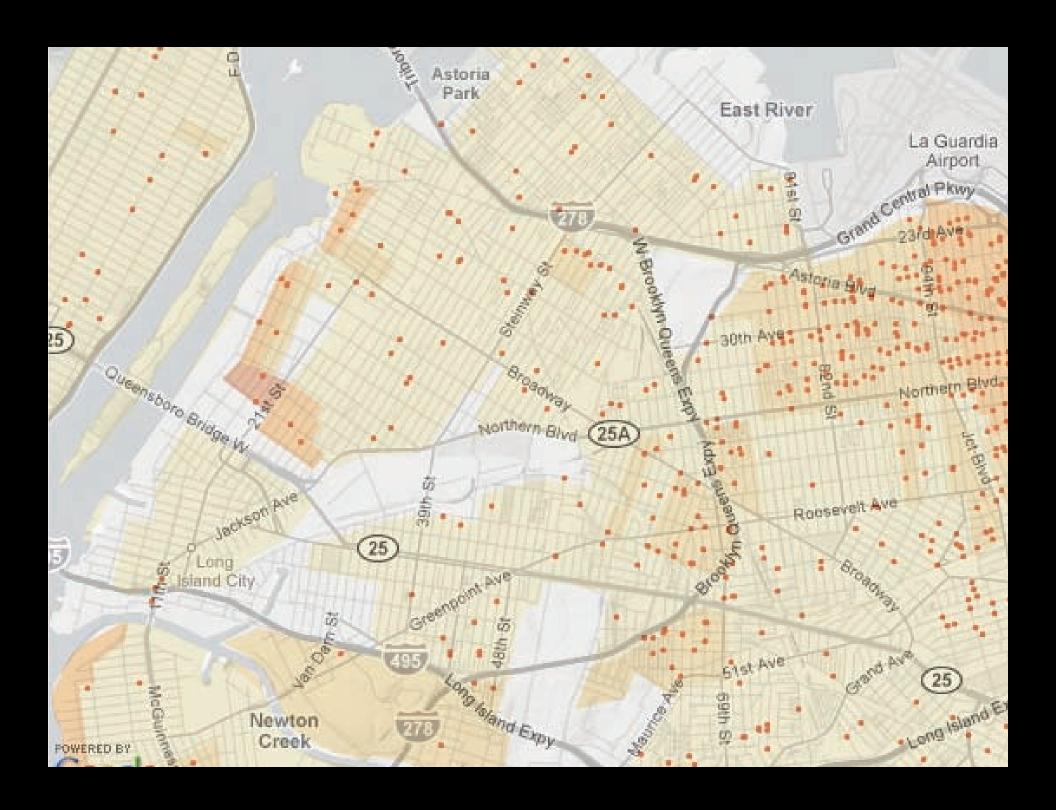


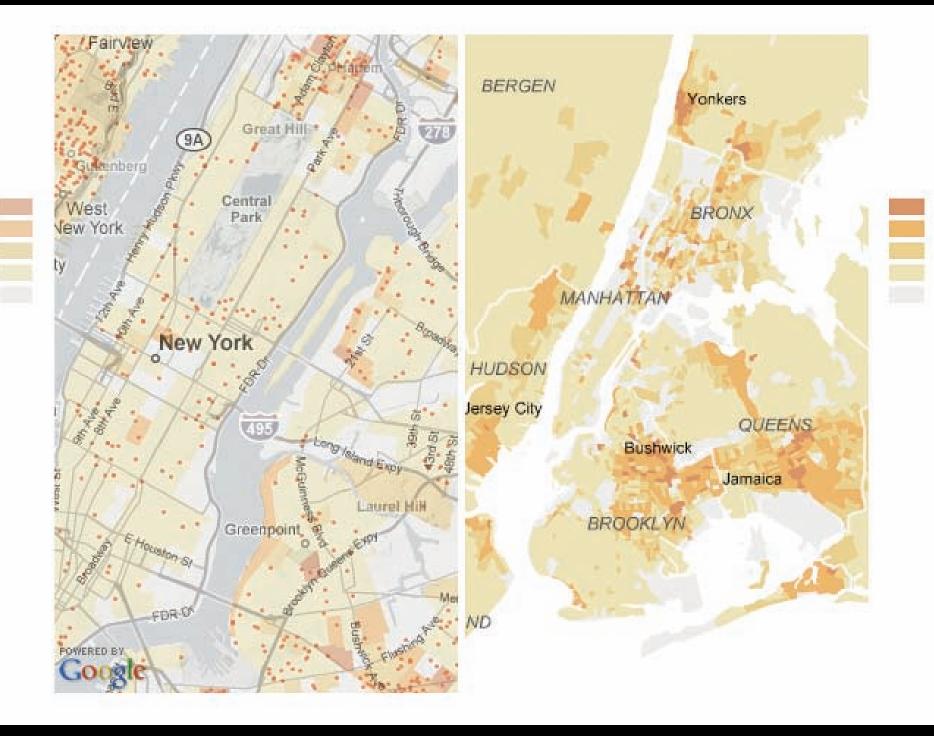












# color

value intensity hue