

Informal Parking Markets: Turning Problems into Solutions

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Informal Parking Markets: Turning Problems into Solutions

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Cities regulate every aspect of parking, using everything from time limits for on-street parking to zoning requirements for off-street parking. Cities also employ legions of parking enforcement officers to ensure that drivers obey these regulations, and tickets for parking violations are a major revenue source. Los Angeles, for example, earned \$134 million from parking tickets in 2011 (City of Los Angeles 2012: 307). If so much parking is formal, regulated, and policed, what then is informal parking? And what can we learn from the informal parking market that might improve public policies for the formal parking market?

Informal parking markets operate outside the regulated system, and they can fill a market niche hard to serve in any formal way. Residents near sports stadiums, for example, often rent their driveways and yards to spectators on game days. This informal market serves venues featuring infrequent peaks in parking demand that are hard to handle using formal methods.

But informal parking can also create problems, as when drivers illegally park on the sidewalks in older neighborhoods that lack ample off-street parking. Cars parked on sidewalks make a neighborhood less walkable and make life more difficult for people with disabilities, especially those who use wheelchairs.

Where informal parking works well, it makes better use of land. Where informal parking works badly, however, it can make neighborhoods less walkable and livable. I will first discuss informal markets for off-street and on-street parking, and will then present a case study of informal parking that suggests a promising reform of the formal parking market.



Figure 15.1

Informal parking near the Coliseum, Los Angeles Olympics, 1984. Photo credit: Tom Zimmerman, Collection of the Los Angeles Public Library.

Informal Off-Street Parking Markets

Informal parking markets operate in many older neighborhoods near sites that generate short, sharp, infrequent increases in parking demand. They often appear near the Los Angeles Coliseum, for example, where residents charge nonresidents to park in their driveways on game days (figure 15.1). Drivers may have to walk a few blocks to the stadium, but after the game they can leave from a residential driveway much faster than from a congested stadium lot where everyone is trying to exit at the same time. Drivers may think that paying for parking is un-American, but residents who receive the revenue know that paying for what you use is a traditional American value.

The demand for game day parking is so strong that some cities have begun to regularize informal markets. For example, the University of Michigan stadium in Ann Arbor is the largest in the United States. With seats for 110,000 fans, it has drawn crowds of over 100,000 for every home game since 1975 (University of Michigan, n.d.). Like most cities,

Ann Arbor prohibits parking on lawns, but its ordinance also states, "This subsection shall not be applicable on those days when football games are played in The University of Michigan stadium" (Ann Arbor Municipal Code 5:166 (1)).

This ordinance and the large peak crowds at Michigan Stadium have created an informal market in off-street parking. Residents park their own cars for free on the streets before the games to create as many off-street spaces as possible on their lawns, driveways, and back yards. These paid off-street parking spaces can accommodate many more cars than the free curb spaces do, so the informal market significantly increases the total parking supply. The city could charge \$25 for on-street parking on game days, but since the city leaves parking free, entrepreneurs take advantage of it.

Residents post signs that show their price of parking (typically around \$25) and advertise the "EZ Out" aspect of parking on the lawns: drivers can simply drive over the curb to exit, instead of waiting in a long line to exit from a regular parking lot after a game. The many dispersed lots thus reduce the severe congestion caused by peak entry and exit queues.

Like formal markets, the informal markets for parking are now shifting onto the Internet, and several start-ups have tapped the market for parking in driveways. ParkatmyHouse, which began in Britain, is one of the most successful of these peer-to-peer operations, and it is expanding into the United States (www.parkatmyhouse.com/us/). Parking Panda is another peer-to-peer Internet market that operates in Baltimore, Philadelphia, San Francisco, and Washington, D.C. The website shows the location, price, and even a photo of each available parking space. Parking Panda accepts the driver's reservation and payment for the space, and sends the proceeds (less a 20 percent transaction fee) to the parking space owner once a month.

When Parking Panda started, it matched drivers who want to park with people who have a parking space to offer—a model of bartering and trading known as collaborative consumption. But Parking Panda also works with commercial garage owners who practice a yield management strategy. When a garage has many empty spaces, it can offer discounts on Parking Panda to fill them without reducing regular prices for the general public. As the garage fills, the online prices rise but prices posted at the entrance to the garage remain fixed. Different drivers can thus pay different prices for parking in the garage at the same time, just as different airline passengers can pay different prices for adjacent seats on a flight.

Websites like Parking Panda are part of the new “sharing economy” that uses the Internet to let households and companies share otherwise idle resources. The major market for these websites may turn out to be garages that vary their prices in real time to optimize occupancy and maximize revenue. What started as informal off-street parking markets around athletic events may eventually become sophisticated formal parking markets with dynamic pricing.

Informal On-Street Parking Markets

Payments for on-street parking are rent for the temporary use of land. If parking is scarce but free, competition for the free spaces can induce “rent-seeking” behavior: using resources to obtain a larger slice of the existing pie rather than to make the pie bigger. In her analysis of competitive rent-seeking behavior, Anne Krueger (1974: 291) explains how scarce resources are squandered in rent-seeking situations:

Rent seeking results in a divergence between the private and social costs of certain activities . . . rent seeking activities are often competitive and resources are devoted to competing for rents.

Informal markets can be quite profitable where on-street parking is greatly underpriced. Doormen for apartment buildings in expensive neighborhoods in New York and San Francisco have become successful parking entrepreneurs. At posh apartment buildings on Russian Hill in San Francisco, some doormen use the buildings’ taxi zones to park cars for visitors, and drivers usually tip them \$20 for the service. When a curb space opens up near the building, the doorman parks the visitor’s car in it. If a resident who parks on the street then comes home and cannot find a curb space, the doorman moves the visitor’s car back to the taxi zone to create a curb vacancy and receives another \$20 tip from the resident.¹

To allow for street cleaning, New York City prohibits parking for a 90-minute period on one side of the street on Mondays, Wednesdays, and Fridays, and on the other side on Tuesdays, Thursdays, and Saturdays. During the 90 minutes each day when parking is prohibited on the side being cleaned, many residents double-park their cars on the other side where parking is permitted.² This alternate-side requirement also creates an informal market controlled by doormen. Residents who park on the street give keys to their cars to their doormen, whom they pay a monthly fee to move their cars from one side of the street to the other.

When drivers want to use their cars, they ask the doormen where their car is. O'Neill (2012) reports that some doormen try to leave gaps of curb space in front and behind each vehicle they park on the street, to prohibit other drivers from using the space. When the doorman needs to park another car, he simply moves the first car forward to create a second parking space out of the two gaps.

Teachers also take advantage of informal parking markets for free curb parking. A study in Alexandria, Virginia, found that school custodians regularly moved teachers' cars to a new curb space every three hours to evade time limits (Olsson and Miller 1979). The school district thus spent the public's money to defeat the city's on-street parking regulations.

Some informal parking markets have a work requirement. Residents of Boston and Chicago traditionally use old lawn furniture to claim curb parking spaces they have shoveled out after a snowstorm. Boston city council member Bill Linehan explained, "It's a cultural thing. When people work hard to clean a spot, you want people to respect that. It's part of living in a dense community" (Viser 2007).³

Using a lawn chair (often called a parking chair) to claim a shoveled-out parking space after a snowstorm is an informal part of the culture, but claim jumpers can dispute the ownership. For example, for how long after a snowstorm is the parking chair valid? Boston residents expect between two and four days, but the period is hard to enforce. What happens if someone moves a parking chair and takes the shoveled-and-claimed space? This claim jumping creates many disputes, with slashed tires and broken windows as the price for trespassing. If someone removes a parking chair and another driver innocently parks in the shoveled space, the aggrieved shoveler may attack the wrong car.

Opponents of the shoveling-for-parking rule argue that claiming public space as private property is unfair. But McChesney (2001) counters that earning the informal, temporary reward of a guaranteed parking space provides a valuable economic incentive to shovel the snow:

Some find it unfair to exclude others from using a resource. But the ability to exclude provides the incentives to create more resources, reducing scarcity over time. Popular writers focus on perceived unfairness. But economists observing the controversy will see the wealth-increasing invisible hand at work again—this time hoisting a snow shovel.

These examples of rent-seeking behavior in the competition for on-street parking suggest that cities can seek some rent of their own.

Elsewhere I have argued that cities should charge fair market prices for curb spaces and spend the revenue for local public investments (Shoup 2011). An on-street parking space is land; like all other land, its value depends on its location. Underpriced curb parking encourages many forms of wasteful rent-seeking behavior. Cities that set parking meter rates to yield one or two open spaces on every block will eliminate all this waste and will earn the full rental value of scarce public land.

A Case Study of Illegal Informal Parking

Illegal informal parking is common in many countries, and it often does great harm. Where on-street parking is underpriced and overcrowded, many drivers feel they have no alternative to illegal parking. The *Los Angeles Times* describes the chaotic informal parking in Mexico City: "Cars dominate nearly every square inch of Mexico City's public space. Vehicle owners double- and triple-park on the streets, to say nothing of curbs, sidewalks, gardens, alleys, boulevards and bike paths" (Dickerson 2004: 26).

This anything-goes informal parking is more common in developing countries, but drivers also park on sidewalks in some California cities, although it is clearly illegal:

No person shall stop, park, or leave standing any vehicle whether attended or unattended . . . on any portion of a sidewalk, or with the body of the vehicle extending over any portion of a sidewalk (California Vehicle Code §22500).

Despite this legal prohibition, Los Angeles and a few other cities have adopted a policy of "relaxed enforcement" of the law against parking on sidewalks.⁴ The informal custom of parking on the sidewalk has evolved in some neighborhoods in response to a shortage of free parking spaces on the streets and the city's failure to enforce the law.

Informal Parking in North Westwood Village

I began to study informal parking on sidewalks in 2005 when teaching a course on urban transportation economics at UCLA. Many of the students lived in North Westwood Village, a neighborhood next to campus, and they mentioned that drivers often park on the aprons of driveways (the paved area between the sidewalk and the street), with part of the car extending over the sidewalk (figure 15.2). Parking enforcement officers ignored this violation because the North Village is a student area and its city council member had requested relaxed enforcement.



Figure 15.2

Cars parked on the sidewalk in North Westwood Village. Photo credit: Donald Shoup.

Most cars are too long to park entirely on the apron, and many drivers park with the front of the car extending over the sidewalk. Some also park on the driveway with the back of the car extending over the sidewalk (and no part of the car on the apron). No matter how far the cars extend over the sidewalk from either the apron or the driveway, drivers call it apron parking.

Unfettered parking over the sidewalk is a good example of what George Kelling and James Wilson referred to as the “broken windows” theory of urban disorder:

Social psychologists and police officers tend to agree that if a window in a building is broken and is left unrepaired, all the rest of the windows will soon be broken. . . . One unrepaired broken window is a signal that no one cares, and so breaking more windows costs nothing. (Kelling and Wilson 1982)

If we substitute cars parked on sidewalks for broken windows, North Westwood Village illustrates this theory. Where enforcement officers do not ticket the first cars parked on the sidewalk, more drivers will park on the sidewalk. Eventually, drivers will park on sidewalks throughout

the neighborhood. Because the city has relaxed parking enforcement, an informal parking market has taken over the sidewalks.

North Village residents have developed informal protocols for dealing with apron parking. For example, if cars are parked on the apron, how do residents who park in the garage of an apartment building get out? To solve this problem, some apron parkers exchange car keys and can move apron-parked cars blocking the driveway.

On days when parking is prohibited on one side of the street for the weekly street cleaning, every car illegally parked on the side of the street being cleaned usually gets a ticket. Cars illegally parked over the sidewalk on the other side of the street, however, rarely receive a ticket. The parking enforcement officers selectively ticket street-cleaning violations and ignore parking on the sidewalks. If an apron-parked car extends into the street on the side being cleaned, however, it *always* receives a street-cleaning ticket. The failure to enforce laws against parking on the sidewalks suggests that parked cars are more important than pedestrians.

My students began to study informal parking in the North Village. They counted parking spaces and parked cars, analyzed census data, interviewed residents and property owners, and documented the situation with many photographs. Table 15.1 summarizes their findings about parking on the streets and aprons in North Westwood Village.⁵

The students counted 205 cars parked on the driveway aprons, and the 2000 census showed that 11,021 residents live in the North Village. This suggests that only 2 percent of the residents park their cars on an apron ($205 \div 11,021$), but their cars extend over the sidewalks on almost every block.

If only 205 residents without cars replace residents who park on the aprons, the reduction in parking demand will be enough to clear the sidewalks of parked cars. A population shift toward residents who do not own a car can happen quickly: the 2000 census found that almost half the residents in the North Village had lived there less than one year (which is understandable because student apartments have a high turnover rate). Living in the North Village without a car is manageable because it is across the street from the UCLA campus.

Since there are not enough apron parking spots for all tenants who want one, landlords either charge tenants for parking on the aprons (usually about \$50 a month) or give them permission to apron-park when they lease an apartment (and presumably charge higher rent for the privilege). If landlords could no longer rent apron parking spaces to

Table 15.1
Curb Parking Occupancy Rates in North Westwood Village

Street	Curb Parking Spaces	Legally Parked Cars	Cars Parked in Aprons	Others Illegally Parked Cars	Total Illegally Parked Cars	Total Occupancy (%)
	(1)	(2)	(3)	(4)	(5) = (3)+(4)	(6) = [(5)+(2)]/ (1)
Landfair	118	112	54	24	78	161
Roebling	25	21	16	0	16	148
Glenrock	46	46	15	1	16	135
Midvale	89	84	26	1	27	125
Levering	97	90	26	3	29	123
Gayley	79	77	15	3	18	120
Kelton	129	125	23	5	28	119
Ophir	61	59	9	1	10	113
Strathmore	136	129	17	2	19	109
Veteran	70	68	4	3	7	107
Le Conte	7	6	0	0	0	86
Total	857	817	205	43	248	124

tenants, students who own cars would find apartments without off-street parking less desirable and might decide that another part of town with more off-street parking would be a better place to live. As a result, more apartments would become available at lower rents to students without cars. Clearing cars off the sidewalks would also make the North Village more walkable.

Political Support for Apron Parking

Michael Dukakis, former governor of Massachusetts and Democratic candidate for president in 1988, lives in the North Village when he teaches in the Luskin School of Public Affairs at UCLA during the winter. He walks to campus, and was appalled to see the chaos on every block as he threaded his way between cars on the sidewalks. He contacted city officials to seek remedies but was ignored, much to his dismay. Nevertheless, due to his celebrity, Dukakis became notorious for protesting apron parking in the North Village.

Political uproar followed, at least in the blogosphere. Apron parkers in the North Village vilified Dukakis (and occasionally me) in blog posts,

many scatological but a few amusing. I learned how difficult it is to reform a practice once it has been established. As Oliver Wendell Holmes said, "A thing which you enjoyed and used as your own for a long time, whether property or an opinion, takes root in your being and cannot be torn away without your resenting the act and trying to defend yourself, however you came by it" (Holmes 1897). When it comes to parking, informal does not mean easily changed.

Many people have a stake in apron parking and do not want it to end. Landlords who now rent apron parking privileges to their tenants would lose revenue to which they have no legitimate claim. Residents have also come to depend on apron parking, even if they realize they are blocking the sidewalks.

The Americans with Disabilities Act

Informal parking on the sidewalks may seem solely a local issue, but in 2003 the U.S. Supreme Court ruled that the Americans with Disabilities Act (ADA) applies to sidewalks. The decision in *Barden v. Sacramento* requires cities to make public sidewalks accessible to people with disabilities. Because of this ruling, cities must remove barriers that block access to sidewalks.⁶ This decision has created a serious liability for Los Angeles because the city has informally allowed drivers to park their cars on the sidewalks in North Westwood Village, although it violates both California and Los Angeles law.

Two ADA lawsuits against the city have spurred reform. Both lawsuits deal with broken sidewalks and cars parked on the sidewalks. The lead plaintiff in one was a UCLA student who uses a wheelchair and had to make a long detour on the way to campus because cars parked on the sidewalks prevented him from taking the shortest route through the North Village (Pesce 2007). The lawsuit alleges:

Due to his mobility disability, Named Plaintiff Victor Pineda uses a motorized wheelchair. Plaintiff Pineda is a graduate student at UCLA and lives in residential North Westwood Village. . . . Plaintiff Pineda has consistently experienced apron parking on a number of sidewalks. . . . The narrow spaces between the vehicles on the sidewalk prevent Plaintiff Pineda from traveling along the sidewalk. As a result, Plaintiff Pineda often must travel on the street to reach his destination, literally risking his life.⁷

After years of neglect, lawsuits have forced the city to reconsider the informal policy of relaxed enforcement for apron parking violations, and to decide exactly what should be legal and what should not.⁸

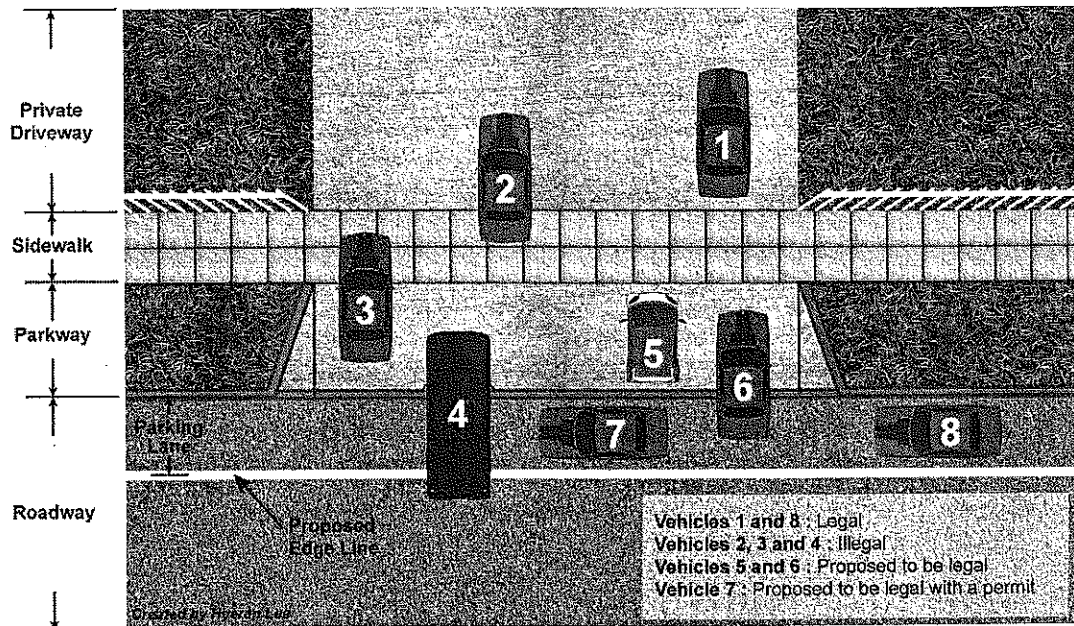


Figure 15.3
Proposal for legal apron parking in Los Angeles. Graphic: Hyeran Lee.

Regularizing Apron Parking

Because of the ADA lawsuits, city staff proposed allowing apron parking that does not extend over the sidewalk or too far into the street. Figure 15.3 illustrates the proposal.⁹ Cars parked on the aprons could extend onto the street as far as the width of the parking lane, and cars could also parallel park on the street in front of the apron if they have a permit. Parking with part of the car extending over the sidewalk or into the street beyond the parking lane would remain illegal.

Vehicle 7 in this proposal illustrates the easiest reform: parallel parking in front of one's own driveway, which some cities already allow. Although parallel parking on the street in front of a driveway does not accommodate as many cars as perpendicular apron parking does, the parked cars do not extend over the sidewalk or into the street beyond the parking lane. Residents can use these block-your-own-driveway permits to provide guaranteed parking for guests, home help, and service vehicles.¹⁰

Parallel parking in front of a driveway is illegal in Los Angeles, but enforcement officers do not issue citations in front of single-family houses unless someone complains. Parallel parking in front of an apartment building's driveway poses difficulties, however, because it can block access for all the residents who park off-street. Nevertheless, it may work

if residents cooperate by sharing keys to the parallel-parked cars that block the driveway.

Formal rules for apron parking can cure the problem of informal parking on the sidewalks only if the city enforces these rules consistently, but Los Angeles's proposed apron-parking rules would be hard to enforce. The city must first establish criteria for citing cars that extend too far over the sidewalk (from the apron or the driveway) or too far into the street. How far is too far? If vehicles 5 and 6 in figure 15.3 are legally parked in the apron, parking enforcement officers cannot see from their patrol cars whether any other vehicles illegally extend over the sidewalk. In this scenario, they have to get out of their cars to examine each vehicle.

Easing the Path to Formality

Given the threat of ADA lawsuits over inaccessible sidewalks, all cities that informally allow illegal parking on sidewalks will need to find ways to mitigate the withdrawal pains caused by enforcing the law. Fortunately, Los Angeles has already established one program that promises to ease the path to formality: dedicated curb parking spaces for shared cars.¹¹

Car sharing's greatest benefit is to divide the fixed costs of automobile ownership (including parking) among a group of potential users. Because all residents have access to the shared cars, the neighborhood becomes more attractive to everyone who does not own a car.

Shared cars in the North Village can serve the approximately half of all residents who do not own a car, attract even more residents who do not own a car, and thereby reduce the demand for curb parking. In public meetings, however, some residents who park on the street vehemently opposed car sharing because of the loss of curb parking. Despite this opposition, the city contracted with Zipcar, a car sharing company, to place its cars on the streets.

The city has dedicated seven on-street spaces in the North Village to Zipcar, and the company has obtained four more off-street spaces. My students' survey of on-street parking found 857 legal curb spaces in the North Village (see table 15.1). While the shared cars remove seven curb spaces from the parking supply (0.8 percent of the total curb spaces), they probably reduce parking demand by many more spaces by reducing the demand for private cars. Several studies have estimated that each shared car replaces between 9 and 13 private cars (Osgood 2010; Martin and Shaheen 2011). The 11 shared cars in the North Village may there-

fore have reduced the demand for parking by between 99 and 143 spaces. The shared cars can reduce, rather than increase, the competition for curb parking.

Similar opposition to car sharing arose in 2010 when Hoboken, New Jersey, reserved curb spaces at corners throughout the city for 42 shared cars, so that 90 percent of the population lives within a five-minute walk of a shared car. The city estimated that each "Corner Car" would replace 17 private cars, but car owners strongly opposed the loss of curb parking:

At the beginning of the program, 42 of the city's roughly 9,000 on-street spaces were sacrificed to a city car-sharing program, known as Corner Cars, leading many residents to decry the arrival of new vehicles on their blocks, where claims to curbside space have long been regarded as sacrosanct. . . . As of July 2012, nearly a quarter of the program's roughly 3,000 members said they had given up their cars or decided against buying one because of the car share. Since 2009, the number of people with residential parking permits has decreased by about 1,000, to 16,000 total parking permits (Flegenheimer 2012).

We can use the Hoboken data to estimate how dedicating 42 curb spaces to shared cars reduced the demand for parking. If a quarter of the 3,000 car share members shed one car, each shared car replaces about 18 private cars ($750 \div 42$). From another angle, if car sharing explains the 1,000 fewer residential parking permits, each shared car reduces the demand for curb parking by about 24 spaces ($1,000 \div 42$). Allocating a few curb spaces exclusively to shared cars can thus improve parking availability even for residents who park their own cars on the street.

Like peer-to-peer parking reservations, car sharing is an example of collaborative consumption based on sharing rather than owning resources. Because sharing a car also means sharing a parking space, it can greatly reduce the demand for parking. As the Internet is key to easily finding and reserving the shared cars, the growing ubiquity of smartphones helps to explain the growing popularity of car sharing. The web-based formal market for car sharing may thus eventually help to resolve the problems caused by informal parking on sidewalks.

A Formal Market for Curb Parking

The loss of apron parking in the North Village will increase the already high demand for curb parking. To address these problems, Los Angeles can allow the residents of any block in North Westwood Village to adopt an overnight parking permit district that prohibits overnight parking on the street except by permit holders. Enforcement officers need to make

only one visit during a night to cite all cars parked without permits. Los Angeles charges residents \$15 per year (less than half a cent per day) for each permit in an overnight parking permit district. Residents can also buy guest permits for \$1 per night.

Given the high residential demand for on-street parking in North Westwood Village, the demand for overnight permits will greatly exceed the supply of on-street parking spaces. The city can keep the permit price low and limit the number of permits in some way, such as by a lottery. Alternatively, the city can charge a fair market price for the permits, so that the number of permits demanded will equal the supply of on-street parking spaces.

Suppose Los Angeles charges North Village residents the same price for a parking permit that UCLA charges students for a parking permit in the nearby campus residence halls—\$89 a month. If the city charges \$89 a month (about \$3 a day) for 857 overnight permits (equal to the number of on-street parking spaces in the North Village), the new revenue will amount to about \$76,000 a month ($857 \times \89). If the demand for permits priced at \$89 a month is more or less than the 857 curbside parking spaces, the city can nudge the price up or down. The right price for the overnight permits is the lowest price that will prevent a shortage of curbside parking.

Paying for curbside parking will never be politically popular, but it will make it possible for residents to find a curbside space more easily. To increase the acceptability of this market-based solution, the city can spend all the new parking revenue to improve public services in the North Village: to repair broken sidewalks, plant street trees, and fill potholes—all of which the North Village needs. These public improvements will greatly increase the livability of the North Village and can satisfy the city's impending obligation to make the sidewalks accessible for the disabled.

Overnight parking permits may not solve all the curbside parking problems in the North Village. Commuters to UCLA, for example, may try to park free in the North Village during the day. In this case, the city can add a daytime permit district on blocks that request it. If the residents agree, the city can also allow nonresidents to pay for parking on blocks that have daytime vacancies, and the revenue will pay for even better public services.

Dedicating parking revenue to the neighborhood that generates it has built political support for paid parking in other cities (Kolozsvari and Shoup 2003; Shoup 2011). The 857 motorists who park on the streets overnight will pay a fair market price for their permits, and in return

they will find it much easier to find a curb space. Everyone else will pay nothing and will benefit from the new public services financed by the permits.

The Sound of Change

A solution to the problems created by apron parking in North Village will have long-term economic and environmental benefits but also short-term political costs. As Niccolò Machiavelli wrote in *The Prince* in 1532, "There is nothing more difficult to plan or more uncertain of success or more dangerous to carry out than an attempt to introduce new institutions, because the introducer has as his enemies all those who profit from the old institutions, and has as lukewarm defenders all those who will profit from the new institutions" (Machiavelli 1965: 26). Or as Woodrow Wilson (1918: 286) said almost 400 years later, "If you want to make enemies, try to change something."

Most people want sustainable cities, great public transportation, less traffic, and more walkable neighborhoods. But they also want free parking, which conflicts with all these other goals. Fortunately, few people will have to give up a car if the city enforces the law against parking on the sidewalks in the North Village. Instead, a few car owners will decide that the North Village is not the best place to rent an apartment, and people who cannot afford a car will take their place. During the transition, the whining will be the sound of change.

Turning Problems into Opportunities

Informal parking markets often respond to the failure of cities to create formal markets for on-street parking. Even on some of the most valuable land on Earth, cities offer free curb parking on a first-come-first-served basis. In dense neighborhoods, how could informal markets for this free parking not emerge?

If curb parking is free, entrepreneurs will find ways to create informal markets that serve drivers who are willing to pay for convenience. These informal markets respond to the problems caused almost entirely by free curb parking. The shortage of free curb parking is not merely a problem, however. It is also an opportunity to create a formal market with fair prices that allocate land for parking efficiently: *parking reform is land reform*. A fair, formal market for on-street parking will reduce traffic congestion, air pollution, and greenhouse gas emissions, and will generate ample public revenue.

Fair market prices can end the Hundred Years' War over free curb parking, and the new parking revenue will provide a peace dividend to rebuild our neglected public infrastructure. Livable, walkable cities are worth far more than free parking on the streets and sidewalks.

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Notes

1. I am grateful to Howard Strassner of San Francisco for explaining this arrangement to me.
2. Gonzalez (2008) explores the ethics of double parking during street-cleaning hours; a local police official explained to him that the police "tolerate double parking as a 'courtesy' when alternate side regulations are in effect."
3. Rheault (2001) presents a photographic exploration of shoveling for parking in Boston. Sibley (forthcoming) provides a cultural and legal analysis of shoveling for parking.
4. For example, San Francisco has an informal policy of not citing cars parked on the sidewalk if the cars leave some room for pedestrian access: <http://shoup.bol.ucla.edu/ParkingOnSidewalksInSanFrancisco.pdf>.
5. The students' research is available online at www.its.ucla.edu/shoup/NorthWestwoodVillageDatav3.pdf.
6. Shoup (2010) explains ADA requirements for sidewalk accessibility.
7. Pages 8–11 in the lawsuit *Pineda v. City of Los Angeles*: www.its.ucla.edu/shoup/PinedaVsCityOfLosAngeles.pdf. The second lawsuit that involves apron parking on sidewalks is *Willits v. City of Los Angeles*: <http://shoup.bol.ucla.edu/WillitsVsLosAngeles.pdf>.
8. When I first learned that the ADA requires accessible sidewalks, I wrote to the Los Angeles city attorney to explain the informal parking problems in North Westwood Village, and asked him if the city would begin to enforce the law against parking on sidewalks. Perhaps naively, I expected an answer. When I received no answer, I wrote to city council members, the mayor, and the deputy mayor for transportation (who was a former student), but never received a single reply to any of my 30 letters and email messages. This correspondence is avail-

able online at www.its.ucla.edu/shoup/ParkingOnSidewalksInNorthWestwoodVillage.pdf.

9. Memo from the Los Angeles Department of Transportation to the City Council, "Apron Parking/Parking in Front of Driveways," November 7, 2011: <http://shoup.bol.ucla.edu/ApronParkingReform.pdf>.

10. Hermosa Beach, for example, issues permits for drivers to block their own driveways: <http://shoup.bol.ucla.edu/HermosaBeachDrivewayParkingPermit.pdf>.

11. See Osgood (2010) for an explanation of how cities allocate on-street parking to shared cars.

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