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The privatization of public space: modeling and measuring publicness

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Abstract. Privately owned public spaces are frequently criticized for diminishing the publicness of public space by restricting social interaction, constraining individual liberties, and excluding undesirable populations. This study empirically determines whether, as is commonly believed, privately owned public spaces are more controlled than publicly owned spaces. To frame our empirical work, we propose a conceptual model that identifies publicness as the interaction between the ownership, management, and uses/users of a space. We then examine the management dimension using an observation-based index to assess spatial management paradigms in publicly and privately owned spaces. We find that the use of the private sector to provide publicly accessible space leads to increased control over use, behavior, and access. Furthermore, while both publicly and privately owned public spaces tend equally to encourage public use and access, managers of privately owned spaces tend to employ more features that control behavior within those spaces. More specifically, spatial control in privately owned spaces is normally achieved through the use of surveillance and policing techniques as well as design measures that 'code' spaces as private. Important findings are presented for planners, policy makers, and others concerned with the future of publicly accessible spaces.

Introduction

Advocates of publicly accessible space often argue that providing such space is necessary for creating a safe, viable, and sustainable urban environment.[1] Despite (or because of) these lofty but somewhat vague goals, publicly accessible spaces tend to enjoy broad-based support from groups and interests that may otherwise be at odds. This should not come as a surprise as publicly accessible space simultaneously serves myriad functions and needs. Historically, urban reformers, city planners, and municipal officials since the 19th century have claimed that public space serves a number of social and political ends (Schmidt, 2008). Early designers like Frederic Law Olmsted argued that parks would serve public health needs by acting as the 'lungs of the city' and providing access to clean air. Olmsted dismissed fixed class-based cultural divisions and was convinced of the value of class intermixing, arguing that parks, among other public institutions, would help integrate various social, ethnic, and economic classes (Schmidt, 2008). Around the same time, park advocates and urban reformers such as John Nolan argued that parks would increase the morality and civility of humans.

In addition to these revised historical justifications, contemporary advocates often defend publicly accessible spaces as essential components of economic growth and development schemes, insofar as common spaces can affect adjacent property values positively and attract local retail development (Carr et al, 1993; Garvin, 2002).

[1] We use the term 'publicly accessible space' to signify all parks, plazas, squares, and atriums (both publicly and privately owned).

Others argue that publicly accessible spaces serve as a means to reconnect with the natural environment insofar as they provide places for recreation and respite from an otherwise demanding urban environment (Project for Public Spaces, 2009). Much of the positive attention paid to publicly accessible spaces also revolves around their purported ability to serve social ends by allowing diverse populations to meet and interact (Miller, 2007). These spaces can represent integral pieces of the urban physical fabric, connecting disparate neighborhoods and encouraging interaction among an otherwise dissimilar constituency. These attributions are often couched in the more abstract language of promoting democracy and civic virtue (Benhabib, 1996; Habermas, 1984).

Yet, in recent years, the provision of publicly accessible space has been increasingly undertaken by the private sector, often at the encouragement of overstretched, fiscally strained muncipal governments who attempt to meet demand for urban open space by providing density bonuses and other incentives to the private sector in exchange for the provision and maintenance of such spaces. Ceding the provision of public space to the private sector as a matter of policy has been successful in greatly enlarging the amount of publicly accessible space in major urban areas. For example, New York City has witnessed the construction of 530 privately owned public spaces totaling 85 acres since the drafting of the 1961 Zoning Resolution (http://www.nyc.gov/html/dcp/html/zone/zonehis.shtml), the document which provided private developers with additional floor area if they provided a publicly accessible space (Kayden, 2005). But, despite such tangible benefits, the provision of publicly accessible space through private means is also problematic, characterized by complex ownership patterns, enormous public and private expense, and more general concerns over exactly how 'public' such spaces really are. This criticism might also apply to traditional publicly owned spaces, which are frequently criticized for advancing private interests at public expense (Mitchell, 2003).

The conventional wisdom is that management practices in privately owned public spaces are more exclusionary and less transparent and accountable than those in publicly owned spaces. But these critiques generally fall short on two counts. First, they tend to interpret the 'publicness' of publicly accessible spaces along ownership lines only. Critics often characterize publicness as existing somewhere along a continuum from completely private ownership at one end to completely public ownership at the other. Second, there has been little in the way of formal, empirical, comparative analysis that would substantiate or refute such claims regarding differing management styles in publicly and privately owned spaces. Most existing work is limited to outlining broad theoretical or institutional differences between management approaches in the two types of spaces (Kohn, 2004; Staeheli and Mitchell, 2008).

The purpose of this study is twofold. First, we produce a more comprehensive and robust conceptual model of publicly accessible space, one that moves beyond categorizing space as either publicly or privately owned. Second, we examine empirically differences in management techniques in publicly versus privately owned spaces. Our aim is to contribute to the literature on the privatization of public space by teasing out and assessing the actual impacts of this phenomenon.

We organize the paper as follows. We begin by outlining some of the dominant critiques of privately owned public space and examine the popular assumption that managers of these spaces tend to prioritize private interests over broader social concerns. We then problematize the notion of a 'good' or 'ideal' public space and suggest a conceptual model that identifies 'publicness' along three distinct but interrelated dimensions: ownership, management, and uses and users. Next, we scrutinize more closely the management axis by using an observation-based index to assess spatial management paradigms and determine whether publicly and privately owned spaces

in New York City are managed differently.[2] We find that significant differences exist between publicly and privately owned spaces both in the degree of control and in the types of management approaches employed. Finally, we provide recommendations to improve the existing regulatory framework governing privately owned public spaces and highlight several potentially fruitful research avenues.

The privatization of public space

Now common in major cities, privately owned public spaces take many forms, from corporate courtyards to pocket parks to festival marketplaces. These differ from traditional city streets, sidewalks, or parks that are publicly owned and operated and are accessible to the entire population (Franck and Paxson, 1989). Instead, privately owned public spaces are open to the public during certain hours, but owners have the a priori right to refuse entry to certain users at certain times (Németh, 2009). We examine one of the most common forms of privately owned public space in downtowns in the US and the global West: the corporate-controlled plaza, park, or atrium provided in exchange for a zoning incentive, normally a floor area ratio (FAR) bonus or the right to exceed maximum building height or bulk envelopes.

Regulations governing the resultant spaces authorize both the range of acceptable space types and the associated FAR bonus provided to the developer. For example, in New York City, a *covered pedestrian space* located indoors with significant retail and social amenities provides up to a 12:1 FAR bonus to the developer, while a *sidewalk widening* receives only a 3:1 bonus. In other words, for every square foot of covered pedestrian space provided, a developer is allowed to construct 12 ft^2 of residential or commercial space above and beyond that which is allowed by the applicable zoning code. Zoning resolutions in New York City, Los Angeles, and San Francisco also provide higher FAR bonuses for spaces of 'higher quality' (Németh, 2009).

Although bonus spaces are legally required to host public access, regulations governing their use are introduced and maintained by private interests rather than city planning or governmental agencies. This arrangement introduces an 'axiomatic tension' for developers grappling with both profit motives and imperatives of social inclusion (Kayden et al, 2000). Concerns about social equity in publicly accessible spaces are nothing new, nor are such concerns limited to privately owned public spaces. Indeed, management practices in publicly owned spaces have been criticized for prioritizing development and economic growth over social and ecological concerns (Zukin, 1995). Still, the provision of publicly accessible space through private means raises some unique concerns.

First, private provision of publicly accessible space can relinquish control to private parties that may not have the broader public interest in mind. The lack of accountability raises concerns over exactly how public such spaces truly are. New York City's zoning resolution, for example, does not require owners of privately owned and managed spaces to have their rules and regulations vetted by the city's planning department (Kayden et al, 2000, page 39). This lack of accountability and public input into both the initial design and the subsequent management of privately owned public spaces runs counter to recent developments in the planning profession that emphasize broadly participatory processes. And since these spaces are rarely considered to be traditional public forums, rights of free speech and assembly do not necessarily extend to privately owned public spaces, limiting popular protest or political action (Németh, 2009).

[2] Since its initial construction, the index has been further validated through field tests by experts on publicly accessible spaces in New York City, Denver, and Los Angeles.

Second, spaces that are privately owned and operated often serve as extensions of the sponsor's public image (Schmidt, 2004), and managers avail themselves of a number of legal, design, and policy tools to ensure that a space adequately and accurately reflects this image. These techniques can range from the use of advertisements and logos to limiting access to the space to a desirable audience by extending a 'restricted use' area into the more traditional spaces such as sidewalks and street rights-of-way. Kayden et al (2000) have variously coined this tendency 'trattoria trickle', 'brasserie bulge', or 'café creep'. Managers of such spaces tend to prioritize profit making and cleanliness over concerns about design quality or social mixing (Mitchell, 2003).

Third, safety—considered herein as freedom from personal crime—is an oft-cited and socially acceptable goal, particularly since September 11, 2001. Concern over providing security and creating safe urban environments comports with the general consensus among planners, developers, and consultants that publicly accessible spaces must be perceived as safe in order for them to fulfill their potential. Indeed, real and perceived safety remains a top concern for the majority of the public (Talen, 2008), and a number of business improvement districts (BIDs) have based entire park rehabilitation schemes on developing safer spaces. Usually this method is predicated on the 'eyes on the street' approach espoused by Jacobs (1961). This approach involves not only an active security policy, but also the prioritization of 'natural surveillance' techniques, on the basis of the notion that creating safe spaces involves a critical mass of law-abiding, desirable users who can identify unlawful activities themselves. Thus, to attract this critical mass, these schemes rely on extensive programming and event planning.

Prioritizing security over inclusion or publicness is potentially problematic, as attempts to attract a more 'appropriate' population are often dependent on excluding those deemed less desirable (Whyte, 1988). Indeed, as some argue, the dominant management model in most privately owned public spaces is one that sorts and filters users according to preconceived notions of appropriateness (Németh, 2009; Smithsimon, 2008). Since these spaces are provided by developers and property owners in exchange for bonus floor area, their management priorities are often financial rather than social. As a result, the private provision and management of space pose unique threats to concepts of inclusion and democracy (Kohn, 2004).

Despite these detailed critiques, some still argue that a space's publicness—how open and inclusive it is to a diverse public—can be located along a continuum from completely private to completely public. Yet as Staeheli and Mitchell (2008) argue, any attempt to do so is fundamentally flawed since the notion that public space is the site of *only* public (or inclusive) action, while private space is the site of *only* private action is "an assumption that does not really hold" (page 120). Instead, they argue, a space's publicness consists of a more complex set of relationships between property and people (page 116). In addition, this linearity assumes an easily identifiable normative goal of what public space can and should be. Kohn (2004) refutes such a notion, arguing that the hybridization and privatization of space engender a progressive *blurring* of the traditional public and private boundaries, making it nearly impossible to develop a concise linear notion of publicness (or privateness). In fact, Marcuse (2005) identifies no fewer than six degrees of ownership, ranging from totally private to totally public.[3]

[3] Marcuse (2005) describes six legal forms of ownership of public space: (1) public ownership, public function, public use (streets), (2) public ownership, public function, administrative use (city hall), (3) public ownership, public function, private use (space leased to commercial establishments), (4) private ownership, public function, public use (airports, gated communities, zoning-bonus private plazas), (5) private ownership, private function, public use (cafes), (6) private ownership, private use (home).

Thus, in order to ascertain whether, as most critics assert, privately owned spaces are indeed less public and more controlled than publicly owned spaces, we first develop a more holistic model of publicness that conceptualizes the various dimensions acting on this concept, thereby establishing a methodological benchmark and grounding future empirical work on this subject.

Toward a conceptual model of publicly accessible space

Discussions of publicly accessible space tend to involve two related questions: first, what constitutes a good or ideal space, and, second, how can such normative goals be operationalized? While no consensus exists on the first question, attempts to address it generally proceed in two ways. Some provide a list of functions or uses that spaces should allow, ranging from democratic activity to passive recreation (Marcuse, 2005). The argument follows that publicly accessible space should be universally inclusive and encourage interaction among as diverse a set of users as possible (Kohn, 2004; Németh and Schmidt, 2007; Young, 2000). Other scholars claim that ideal spaces possess certain abstract characteristics such as variety, flexibility, permeability, or authenticity (Ellin, 2006; Fernando, 2006; Rapoport, 1977). Still others argue that 'good' spaces allow for a variety of unplanned, unmediated, improvised uses (Franck and Stevens, 2006; Hood, 1997; Schmidt, 2005).

While we agree that a good space might incorporate such qualities and serve such functions, we maintain that no single space should be expected to meet the needs of all users at all times (see also Franck and Paxson, 1989). Indeed, spaces that attempt to do *everything* well often fail to do *anything* well. It is therefore important to consider the role individual spaces play in relation to the larger network of spaces in dense urban settings (Franck and Paxson, 1989; Mitchell, 1995; Whyte, 1988). Importantly, we also feel that advancing any normative claims regarding publicly accessible space is an inherently problematic exercise, as it fails to recognize the subjective, situated viewpoints from which users of these spaces operate. We are not alone in this assertion, as scholars have continually questioned whether space can ever be (or has ever been) universally inclusive or unmediated (Mitchell, 2003; Young, 1990). Not everyone shares these same ideals of openness or inclusiveness; in fact, such ideals may "stand in opposition to an ideal of an orderly, controlled public space that may be structured more as a retreat or a space of comfort" (Staeheli and Mitchell, 2008, page 119). The appropriate or desirable public for any given space is contingent on users, owners, and managers acting as conscious agents. Consequently, the definition of 'the public' is constantly redefined from circumstance to circumstance.

Thus, any assessment of publicness must always ask *to whom* a space or set of spaces might be more or less public. For example, an employee eating lunch in a privately owned corporate plaza might feel perfectly comfortable, while a homeless person in the same space at the same time may feel unwelcome. The same space, with the same ownership and management schemes, can be experienced differently by different users. There is even less agreement on how to measure the quality or success of publicly accessible space. Some scholars identify the number of daily users as a direct indicator of a successful space: the higher the number of users the better the space (Carmona et al, 2003; Kayden et al, 2000). However, this assumption does not account for spaces that provide opportunities for quiet respite or contemplation (Loukaitou-Sideris and Banerjee, 1998).

Any attempt to conceptualize publicness must, we argue, involve multiple, interrelated definitions, in order to avoid the tendency either to create a list of desirable features or to reduce the concept to a single continuum. Such a model must also be empirically quantifiable lest it dissolve into a set of anecdotes or personal observations,

thereby falling into the very subjective trap mentioned above. To that end, we develop a more comprehensive model of publicness that draws on earlier work seeking to move beyond a linear interpretation of the concept.

Madanipour (1999) interpreted a framework by Benn and Gaus (1983) that theorizes publicness as based on three dimensions: *access*, *agency*, and *interest*. Access is defined as access to a place as well as the activities within it. Agency refers to the locus of control and decision-making present, and interest refers to the targeted beneficiaries of actions or decisions impacting a space (Madanipour, 1999). These dimensions are fairly ambiguous and amorphous: Franck and Paxson (1989) argue that legal ownership, for example, crosses all three characteristics, as publicly owned spaces may still restrict access while privately owned spaces may have unrestricted access (page 123). Nonetheless, the Benn and Gaus framework offers some insight into how this concept might be measured.

Kohn (2004) also proposes a definition of publicness that encompasses three core criteria: ownership, accessibility, and intersubjectivity—the last term referring to the kinds of encounters and interactions that a space facilitates. She argues, however, that assigning a label of public or private is not as simple as checking whether a space meets these three criteria. Instead, publicness must be treated as a multifaceted concept that acknowledges its own "multiple and sometimes contradictory definitions" (Kohn, 2004, page 11).

While these studies begin to outline an evaluative definition of publicness, none further interrogates the listed dimensions or criteria on which his construct might be measured. This is unfortunate, as such conceptualizations can be extremely "useful in empirical analyses of public spaces" (Madanipour, 1999, page 881). Consequently, we propose a model of publicness rooted in the above criteria but which also operationalizes these dimensions. In this model, publicness is assessed on three core components: ownership, management, and uses/users. Conceptually, each component represents an axis that intersects and interacts with the other two components (see figure 1). While any assessment of a space's publicness must account for these three dimensions, the model allows for a bracketing of one or more axes. In our own empirical examination, for example, we explore the management axis as it differs between publicly and privately owned spaces, but stop short of a more comprehensive assessment of the model. This implies that the research is inevitably partial. To construct a more robust model, however, we argue that some elements must be kept constant so that others may be explored. The present research is thus part of a larger project.

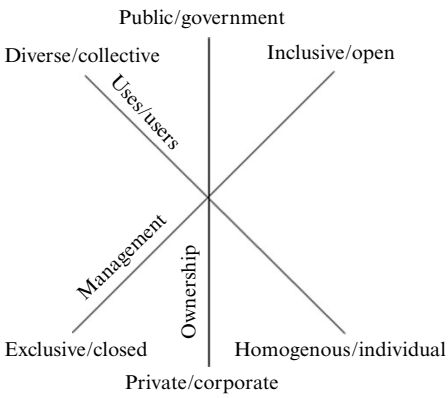

Figure 1. Dimensions of publicness.

Ownership

One component of publicness involves whether a space is owned by a government body (public) or a private individual or corporation (private). Typically, ownership is directly related to operation: publicly owned spaces are usually publicly operated; privately owned spaces are normally privately operated. We can locate these two prototypical spaces on either end of the axis, with spaces of mixed ownership/operation (eg publicly owned but privately operated) falling somewhere between these two poles. Figure 2 demonstrates the four possible ownership and operation combinations. Mixed ownership/operation spaces have become increasingly popular in recent years (Katz, 2006); famous examples in New York City include Bryant Park, which is publicly owned but privately policed by a strong BID, and Central Park, which is run by a private conservancy. In the case of BIDs, local property owners carry the operational expense. Although still publicly owned and under the jurisdiction of public officials, privately operated spaces are often criticized for serving to increase property values and economic spillover rather than attending a broader public interest (Zukin, 1995).

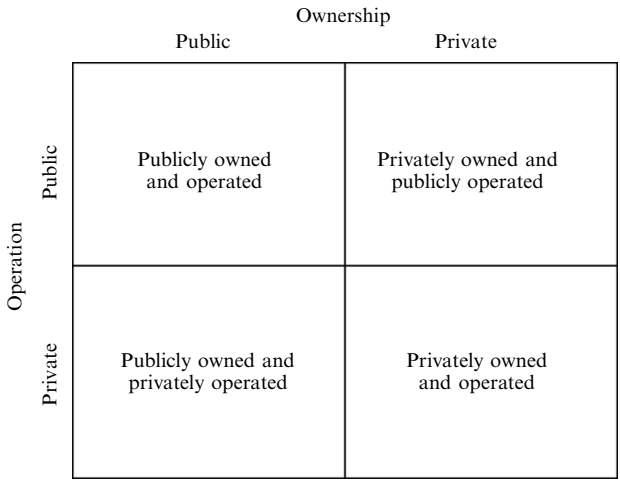

Figure 2. Ownership and operation combinations.

Management

This dimension refers to the manner in which a space is controlled and maintained, and specifically refers to the methods by which owners indicate acceptable uses, users, and behaviors. Management techniques range from including features that encourage freedom of use, access, and behavior (such as making seating available) to providing elements that discourage use and control access and behavior, such as the presence of panning surveillance cameras or armed security guards. Understanding the various approaches to spatial management is important because behavioral control often has broader consequences related to the degree of inclusiveness and social diversity of a space (Sandercock, 1998). According to Franck and Paxson (1989, page 133), "who controls a public space, how they do so, and how they attempt to make the space safe and secure" are important components of this management and control dimension. In addition to these overt techniques, managers often incorporate more subtle cues and codes such as temporary closures for corporate events and small-scale design features like canted ledges that become unsittable (Whyte, 1988). This axis ranges from *inclusive/open* on one end to *exclusive/closed* on the other end.

Uses and users

This is perhaps the most difficult axis to measure, as it can be interpreted both *quantitatively*, by the diversity of uses and users of the space, and *qualitatively*, by the behaviors and perceptions of the users themselves. Arguing for vibrant spaces, Franck and Paxson (1989, page 131) claim that "the greater diversity of people and activities allowed and manifested in a space, the greater its publicness." But as noted earlier, publicly accessible spaces that might appear *more* public to some might feel *less* public to others. Studies have examined how space is not always used in a similar fashion by different groups; most of these explore how traditionally marginalized racial and ethnic groups interpret, use, and recreate in space (Craig, 1972; Hutchinson, 1987; Loukaitou-Sideris, 1995; Rose, 1987). Choudhury (1996, page 283) has also concluded that the "social acceptability of ... space to different cultural groups is affected by the cultural composition of a neighborhood." Observers also describe how space is used and appropriated in ways not originally intended. Such open-ended spaces have additional value as different users can tailor and adapt them to best meet their particular needs and affinities (Fernando, 2006). Consequently, this axis measures not only what uses and users are actually present in space, but also serves as an indicator of *perceptions* of publicness. While the ownership and management axes assess the *potential* for publicness, measuring how a space is used and perceived can more accurately determine *actual* publicness.

This model is not yet complete; operationalizing the uses and users axis, for example, requires a multistage methodology likely requiring both unobtrusive observation techniques and user-intercept surveys. Once all axes have operationalized, one could potentially plot several spaces to compare their relative publicness. Upon determining where a space belongs on each axis, points can be connected to form an overall plot of the space's publicness. In the hypothetical example in figure 3, space A's plot lies above the dashed horizontal line, and is thus 'more public' than space B's plot, which falls below the line.

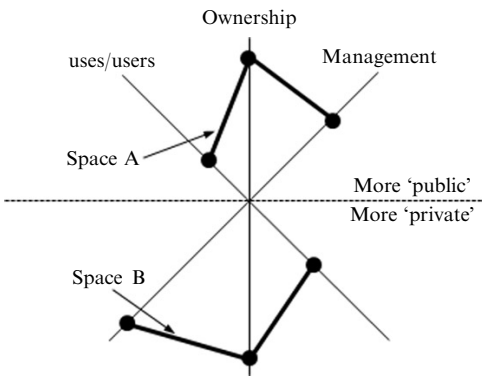

Figure 3. Hypothetical plotting of spaces.

In the present examination we investigate whether different management approaches are employed in publicly owned and operated versus privately owned and operated spaces (those located in the upper left and lower right quadrants of figure 2). This analysis helps determine whether relying on the private sector to provide and operate publicly accessible space reduces the publicness traditionally associated with it. Our study addresses three questions. First, are privately owned public spaces really more controlled than publicly owned spaces, as is commonly asserted? Second, if privately owned spaces are more restrictive, is it because such spaces actively exclude users, as is

commonly believed (see Whyte, 1988), or do they simply fail to encourage use by a wide variety of users (see Kayden et al, 2000)? Third, what specific management regimes and techniques do managers of public space employ? Answering these questions has implications for crafting a more socially optimal public policy directed towards privately owned public spaces. In the process, we tease out a number of differences—both explicit and implicit—in the management practices operating in these spaces.[4]

Methods

To answer the questions outlined above, we must first determine how to measure ownership and management. For the ownership dimension we selected spaces existing on the two poles of the axis: around 40% of the spaces we chose are publicly owned and operated while the remaining 60% are owned and operated by private developers (see figure 3). To assess each of the selected spaces on the management dimension, we use an existing methodological tool developed by Németh and Schmidt (2007). On the basis of extensive site visits, relevant literature, and interviews with users and managers of spaces, an index is designed to measure the presence and intensity of various management techniques.

The index groups techniques into hard (active) control, and soft (passive) controls (see Loukaitou-Sideris and Banerjee, 1998). Hard controls involve the use of overt physical impositions (surveillance cameras, private security guards), while soft controls focus on symbolic measures (access restriction, small-scale design measures). The index is divided into four major dimensions:

(1) laws and rules governing the space;

(2) surveillance and policing present in the space;

(3) design and image-building techniques to both literally and symbolically dictate appropriate behavior (eg outfitting benches with metal crossbars to prohibit homeless people from sleeping on them);

(4) access restrictions and territorial separation to control space (eg programming certain areas for restricted or conditional use).

The index consists of twenty separate indicators, ten encouraging use and ten discouraging or controlling use (see table 1). To be objective, the index quantifies directly observable indicators and does not weigh the factors. To this end, researchers use a scoring rubric based on the presence and intensity of each separate variable. Spaces receive a score on each variable ranging from 0 to 2 for the variable encouraging use and from 0 to -2 for variables discouraging use. The highest overall score is a 20 (least controlled), the lowest is a -20 (most controlled) (Németh and Schmidt, 2007). The total score of the features discouraging use is then added to the total score of the features encouraging use.

Site selection

While many cities have extensive public space networks, no city contains more privately owned public spaces than New York City. As such, our empirical analysis takes place in the city's myriad parks, plazas, and atria. In 1961 the city developed its famous zoning resolution that instituted an incentive zoning system whereby a developer received additional floor area in exchange for constructing and maintaining a publicly accessible space on his or her lot. Since then 530 such spaces have been constructed in Manhattan, Brooklyn, and Queens (Kayden et al, 2000).

[4] This empirical research builds on work by Németh (2009) that outlines the broader mandates and priorities of managers of privately owned public spaces.

Table 1. Index of control and management measures (Németh and Schmidt, 2007).

	Approach
Features encouraging use	
Sign announcing 'public space'	laws/rules
At a commercial building	surveillance/policing
Restroom available	design/image
Diversity of seating types	design/image
Various microclimates	design/image
Lighting to encourage nighttime use	design/image
Small-scale food consumption	design/image
Art, cultural, or visual enhancement	design/image
Entrance accessibility	access/territoriality
Orientation accessibility	access/territoriality
Features discouraging or controlling use	
Visible sets of rules posted	laws/rules
Subjective or judgment rules posted	laws/rules
In business improvement district	surveillance/policing
Security cameras	surveillance/policing
Security personnel	surveillance/policing
Secondary security personnel	surveillance/policing
Design to control behavior or imply appropriate use	design/image
Presence of sponsor or advertisement	design/image
Areas of restricted or conditional use	access/territoriality
Constrained hours of operation	access/territoriality

We employed the aforementioned index in 151 publicly and privately owned spaces in Midtown Manhattan and the Upper West Side neighborhoods (Manhattan Community Districts 4 – 7). We limited our study to these neighborhoods—roughly bounded on the south by 14th Street and on the north by the southern border of Central Park—since they are high-density pedestrian areas with some of the most heavily trafficked publicly and privately owned spaces in the city. See figure 4 for location map.

Limiting fieldwork to a particular city or even neighborhood may result in less generalizable results. Yet we feel this study area presents a unique opportunity as it includes many high-profile corporate headquarters whose owners and occupants view security as an important priority. Furthermore, New York City's incentive zoning program is used as a mode for similar programs in Denver, San Francisco, and even Hong Kong. The sites we examined include 89 spaces that are privately owned and managed (eg Trump Tower) and 62 spaces that are publicly owned and managed (eg Union Square Park). For locations of privately owned public spaces we relied on Kayden et al (2000), while listings of publicly owned spaces came from the New York City Department of Parks and Recreation's website (http://www.nycgovparks.org).

The authors and two student assistants carried out the site visits during 2007 and 2008. At least two persons viewed each site. The scores for both publicly and privately owned spaces were totaled and averages were taken where dissimilar results occurred. To determine whether statistically significant differences existed among the results, we used the Mann – Whitney *U*-test (also called the Wilcoxon – Mann – Whitney test), a nonparametric test for assessing whether two independent samples of ordinal observations come from the same distribution.

Figure 4. Map of study area (Manhattan Community Districts 4 – 7) (source: New York City Department of Planning http://www.nyc.gov/html/dcp/).

Results and analysis

We conducted statistical tests on three different analytical levels. We first compared the total index scores for publicly and privately owned spaces to determine whether the latter tend to discourage use and control behavior more than the former. We then examined spaces belonging to each ownership type to determine whether these differences are primarily due to the extent to which they either encourage or discourage use. Finally, we examined both publicly and privately owned spaces along the various dimensions outlined above (laws/rules, surveillance/policing, design/image, and access/territoriality) to examine whether significant differences exist in the measures employed in both types of spaces.

For the first analysis, we compared the total index scores of all privately and publicly owned spaces. We found a statistically significant difference between the scores, with privately owned spaces scoring lower than publicly owned spaces (see table 2). According to the index scale, a lower score indicates a greater degree of control (ie the space contains more features that control rather than encourage use), although it is important to note that this is an ordinal scale and, consequently, the interval differences between scores are meaningless. Thus we conclude that, on balance, the privately owned public spaces we examined are more controlled or behaviorally restrictive than publicly owned spaces. As an example of the scoring process, we display the results in

Table 2. Descriptive statistics and Mann – Whitney *U*-test for total index score for open spaces in the study area.

	Publicly owned: median (MAD [a])	Privately owned: median (MAD [a])	Mann – Whitney U [b]	p-value
Total index	5 (2)	3 (2)	2088.0	0.005*

[a] MAD is median average deviation = median$_i$ [$|X_j - \text{median}_j(X_j)|$]. This estimator is the most robust measure of dispersion for ordinal data and, by using median instead of mean, is more resilient to outliers than standard deviation.

[b] No direct interpretation of the Mann – Whitney *U*-statistic itself; it is a test statistic to be compared to critical value.

* Significant at 0.01 level.

Table 3. Sample index scoring for Stuyvesant Square and 135 West 52nd Street, New York City.

	Approach	Stuyvesant Square	135 West 52nd Street
Features encouraging use			
Sign announcing public space	laws/rules	2	1
At a commercial building	surveillance/policing	0	2
Restroom available	design/image	0	0
Diversity of seating types	design/image	2	2
Various microclimates	design/image	2	2
Lighting to encourage nighttime use	design/image	2	1
Small-scale food consumption	design/image	0	0
Art, cultural, or visual enhancement	design/image	2	0
Entrance accessibility	access/territoriality	2	1
Orientation accessibility	access/territoriality	0	2
Overall score		12	11
Features controlling or discouraging use			
Visible sets of rules posted	laws/rules	−2	−1
Subjectivity or judgment rules posted	laws/rules	−2	0
In business improvement district	surveillance/policing	0	0
Security cameras	surveillance/policing	0	−2
Security personnel	surveillance/policing	0	0
Secondary security personnel	surveillance/policing	0	−2
Design to imply appropriate use	design/image	−1	0
Presence of sponsor or advertisement	design/image	0	0
Areas of restricted or conditional use	access/territoriality	0	−2
Constrained hours of operation	access/territoriality	−1	−1
Overall score		−6	−8
Total score		6	3

(a) (b)

Figure 5. (a) Publicly owned Stuyvesant Square and (b) privately owned space at 135 West 52nd Street, New York City (photographs by Shannon Stone and Harshit Lakra, June 2008; the authors, June 2007).

table 3 for two typical spaces—Stuyvesant Square (publicly owned) and 135 West 52nd Street (privately owned). Figure 5 presents images of each place.

Because the index is divided into features that encourage use and features that discourage or control use, it is also instructive to determine whether privately owned public spaces are more controlled because they contain more features that constrain use, or, more simply, because they lack features that encourage use. Similarly, it is important to determine whether publicly owned spaces are, overall, more encouraging of use because they actually employ measures to promote use, or because they lack features that control use. To this end, we compared the summed subtotals of the ten variables that encourage use versus the ten variables that discourage use. On the features encouraging use, we found that no statistically significant difference exists between the two types of spaces. However, we determine that privately owned spaces scored significantly higher than publicly owned spaces on the features discouraging or controlling use [(5)] (see table 4). In summary, both publicly and privately owned spaces tend to encourage use and access equally, but privately owned spaces also feature

Table 4. Descriptive statistics and Mann–Whitney U test for features that encourage versus features that discourage use for open spaces in the study area.

	Publicly owned: median (MAD [a])	Privately owned: median (MAD [a])	Mann–Whitney U [b]	p-value
Features encouraging use	9 (2)	10 (3)	1770.5	0.599
Features discouraging use	5 (2)	6 (2)	2694.0	0.000*

[a] MAD is median average deviation = median$_i$ [$|X_j - \text{median}_j(X_j)|$]. This estimator is the most robust measure of dispersion for ordinal data and, by using median instead of mean, is more resilient to outliers than standard deviation.

[b] No direct interpretation of the Mann–Whitney U-statistic itself; it is a test statistic to be compared to critical value.

* Significant at 0.01 level.

[(5)] It is important to note that we are aggregating the separate halves of the index independently in this case (ie not subtracting control features from encouraging features), which is how the index was calculated in the first analysis. In this case, higher numbers imply more features being used on average.

elements that control use and behavior. The four sampling distributions are uniformly dispersed, indicated by relatively equal values of the median absolute deviations.

For the third and final analysis we took full advantage of the index by examining both types of spaces along four management dimensions. Here the results varied, indicating a more nuanced approach to spatial control across the two management paradigms. Publicly owned spaces score lower on average than privately owned public spaces on both the laws/rules and access/territoriality approaches, indicating that publicly owned spaces employ more rules and access limitations to control who uses a space, and how it is used. This is not that surprising, as publicly owned parks are often required to have uniform signage and opening hours (see figure 6), while many house playgrounds, dog parks, or other specific functions that limit access to

Figure 6. Publicly owned parks tend to include more posted rules. St Vartan Park, New York City (photography by Shannon Stone and Harshit Lakra, June 2008).

Figure 7. Publicly owned parks tend to include more access/territoriality restrictions. The images indicate large portions of Bellevue Park South, New York City are turned over to specific uses (photographs by Shannon Stone and Harshit Lakra, 2008).

certain groups (see figure 7). The analysis also showed that privately owned public spaces score significantly lower than publicly owned spaces on both the surveillance/policing and the design/image approaches. This suggests that managers of privately owned spaces rely on surveillance cameras and security guards to control users, while also using small-scale design features and corporate images (signs and logos) that serve to 'code' a space as restricted to private use only. Table 5 displays the results for this third level of analysis; all of these results are statistically significant.(6) The median absolute deviations on the privately owned spaces—particularly on the surveillance/policing and design/image approaches—were larger than those in the publicly owned samples, indicating a wider range of scores and a larger variation in control levels in privately owned spaces. Figure 7–9 illustrate some examples.

Table 5. Descriptive statistics and Mann–Whitney U test for all approaches in the study area.

	Publicly owned: median (MAD [a])	Privately owned: median (MAD [a])	Mann–Whitney U [b]	p-value
Laws/rules	−1 (1)	0 (0)	1211.5	0.000*
Surveillance/policing	0 (0)	−2 (1.5)	1328.5	0.000*
Design/image	5 (1)	2 (2)	1573.0	0.000*
Access/territoriality	−1 (1)	2 (1)	2092.0	0.000*

[a] MAD is median average deviation = median$_i$ [$|X_j - \text{median}_j(X_j)|$]. This estimator is the most robust measure of dispersion for ordinal data and, by using median instead of mean, is more resilient to outliers than standard deviation.

[b] No direct interpretation of the Mann–Whitney U-statistic itself; it is a test statistic to be compared to critical value.

* Significant at 0.01 level.

(a) (b)

Figure 8. Privately owned spaces tend to include more surveillance measures such as security and cameras. (a) Worldwide Plaza, New York City; (b) Sony Plaza, New York City (photographs by the authors, June 2007).

(6) In this case, we aggregate the index according to the four separate dimensions; a lower score implies the presence of features that control use.

Figure 9. Privately owned spaces tend to include more corporate images and design features, Sony Plaza, New York City (photographs by the authors, June 2007).

Discussion and policy recommendations

In this study we first developed a conceptual model for assessing the publicness of public space. We then used it to ground an empirical study identifying differences in management practices in a sample of privately and publicly owned spaces. We find that the privately owned public spaces we examined control use, behavior, and access and are less public on this dimension than their publicly owned counterparts. Furthermore, while both publicly and privately owned spaces tend to encourage public use and access equally, managers of privately owned spaces tend to employ additional features that control behavior within those spaces. More specifically, this spatial control is achieved through the use of surveillance, policing, and design features that control how a space is used. These results not only contribute to the wider debate about the creation, use, and management of publicly accessible spaces, but also have specific implications for planners and policy makers concerned with this issue.

The findings suggest that privately owned spaces include many features that both encourage use *and* control behavior. Consequently, the reliance on the private sector to supply publicly accessible spaces often results in the creation of vibrant but frenetic and highly programmed 'festival' spaces in which designers employ an array of techniques, tools, and activities to manipulate and program the use of, and behavior within, such spaces (Sorkin, 1992). For example, Bryant Park in Central Midtown Manhattan contains many seasonal and year-round activities that may only be of interest to certain specialized population segments (such as a petanque court, a dog park, or a 'neighborhood' of chess boards). Although visually appealing and evidently quite popular, such spaces not only signal appropriate use and users of a space, but they often fail to serve some of the other important goals we ask public spaces to fulfill, such as respite from the hustle and bustle of life in a dense, urban environment. This increased emphasis on programming and personal safety threatens the ability to create and maintain simple spaces that serve as welcoming, inclusive retreats.

In hopes of protecting the openness or publicness of publicly accessible space, an appropriate point of entry for planning and policy researchers and professionals would be to examine how and why managers of privately owned spaces overemphasize the use of surveillance cameras, security guards, and design measures. In this spirit, we offer

our own policy recommendations for tempering the management of privately owned public spaces.

Planning departments should limit the use of corporate signage and advertisements in privately owned spaces. This would require strict and frequent oversight on the part of these agencies. While such oversight would require an investment of time and money, the resultant spaces would be held to more uniform management standards. Similarly, newly proposed spaces or those undergoing redesign should receive an inspection by a team of public space advocates (see Kayden, 2005, page 134). This design review team would ensure that each space is not only compliant with its required provisions but also engages with a more broadly defined set of public users. Such design review procedures are common in many major cities in the US and abroad. Similarly, managers of privately owned public spaces should undergo an educative process that informs them of the legal requirements regarding the accessibility of their space. Because these spaces are privately owned, one could argue that they deserve even more resolute supervision than publicly owned spaces.

While these recommendations appear quite simple, municipalities might be reluctant to enforce them. These guidelines distribute responsibility to a number of often competing parties, and would make the process of permitting a privately owned space more time consuming. The development community would likely fight the inefficiency and perceived subjectivity involved in enforcing such measures. As privately owned public spaces increase in number, and their ownership and management regimes become more complex, "the willingness and ability of local government to restrict or modify the development of these [spaces] greatly diminishes" (Byers, 1998, page 203). By ceding control to the private sector, local governments have found it more difficult to control spaces they do not own.

One solution for rectifying this fundamental power imbalance is to reform the sections of zoning resolutions dealing with the bonus system. We advocate reexamining the FAR bonuses provided in exchange for privately owned spaces. For example, on the basis of the number of low-quality marginal spaces produced in New York City as a result of the original 1961 resolution, amendments in the 1970s automatically granted larger FAR bonuses to spaces providing substantial amenities. However, our results show that spaces encouraging use by providing significant amenities tend to also include measures aimed at controlling behavior. We propose that zoning resolutions be amended to provide uniform rates for all privately owned spaces. This would limit the tendency of developers to provide only high-profile spaces with haphazardly organized sets of amenities and programming, and would thus encourage a more sensitive and diverse range of spaces, from the more contemplative to the more animated. In fact, New York City's Department of City Planning recently passed a measure whereby all new bonus plazas constructed receive a single standard FAR bonus rate.

This study suggests further avenues of research. As stated earlier, a full assessment of the publicness of a space or set of spaces must include assessment on all three axes. Here the uses/users axis becomes particularly relevant to such an analysis. A user-intercept survey would provide valuable information not only about the users of the spaces themselves, but also about how these users interpret and value publicly accessible spaces. Such analyses can address whether more controlled spaces tend to be more successful in attracting users and whether certain users prefer more secure physical environments. Similarly, we can determine whether security measures make spaces more attractive, and whether there exists a socially optimal level of control. Such research would help built environment professionals and academics to develop a better understanding of the slippery concept of publicness while providing valuable insight into how publicly accessible spaces are experienced by diverse populations.

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