21A.850J / STS.484J The Anthropology of Cybercultures
Spring 2009

Alternative Narratives of Nighttime and Illumination:

An Exploration of Central Square in Cambridge, MA

Central Square Theater illuminated signage.[1]

Introduction

The histories and experiences of nighttime and illumination are entangled in myriad ways. In some cases, illumination has been figured as an antidote to the shadows of nighttime that extends daytime practices after dark. In other cases, illumination and nighttime engender social practices specific to nighttime. Different combinations of urban form and lighting infrastructure support a host of encounters. Too often, however, these dynamic moments are frozen in simplistic terms such as light equals safety and darkness equals danger. In order to explore alternative narratives of nighttime, this paper explores a specific urban location called Central Square in Cambridge, MA. I ask how illumination interacts with urban form at nighttime. What boundaries arise? How are different zones enacted? And again what alternative narratives of nighttime do these observations enable? In the long run, these questions should lead to approaches and questions for design.

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[1] Please note that images are taken by the author. Other images have been removed.

The paper is divided into two sections. In the first part, I explore salient aspects of the history of nighttime and illumination along specific angles. In the second part, I introduce the site and describe my observations from Central Square which are subdivided in several sections and begin to constitute alternative narratives of nighttime and illumination.

A Partial History of Nighttime and Illumination

The histories of nighttime and illumination are intertwined. This section is only intended as a partial review of those elements important for the selected case study.

Lights-on-Bodies versus Fixed Infrastructure
Street lighting today is a networked, fixed infrastructure that relies on the electrical grid. We take this system for granted and expect it to function reliably and automatically. However, street lighting originated as a personal, mobile technology for self-identification during the night in cities. People were required to carry lanterns after curfew in medieval European cities to mark their presence and signal that they were not engaging in nefarious activities: "Anyone who is found at an unusual hour in an unusual place without a light must submit to the strictest investigation." (Schivelbusch 1988, 1995: p.82)

These mobile systems evolved into the fixed infrastructure we use today which has lost much of its early communicative function. For example, city governments required citizens to affix lanterns on their buildings. (Schivelbusch 1988, 1995: p.82) These lanterns slowly became independent lighting poles maintained by the state. And as a result they became a target for revolutionaries from the end of the 18th century throughout the 19th century.

This European history should be augmented by a more detailed look at the use of lanterns in Asia where rice-paper lanterns were used as slow, asynchronous messaging systems or in connection with different festivals. These images (not included) from a study commissioned by Philips about the future of lighting (2007) revitalize some of the roots of lantern use in Asian culture.

These revivals of history are tied to very futuristic forms of lights-on-bodies. In the report, the editors (Philips city.people.light 2007: p.37) write: "Personalization will meet dematerialization. It is a natural evolution cycle for technology to move from public to personal and to shift from fixed to mobile domains." They speculate about how much longer we will have fixed infrastructures for lighting. Soon we will be surrounded by very tiny pixels or share larger light objects for temporary appropriation.

The "natural evolution" from public to personal should not be taken for granted. As the transition from lantern-carrying to fixed-in-place reflector lanterns in 17th century Paris demonstrates specific decisions by Louis the XIV's administration were driving forces behind the implementation. It is worth comparing the futuristic visions from 2007 (bottom) with the allegorical engraving on a Louis XIV medallion from 1667 (images not included here). In the bottom image, a man reaches for a " 'light object' for individual use" with almost the same gesture that the allegory on the medallion holds her lantern ostensibly for the public's benefit. Moving back to lights-on-bodies presents a complex assemblage of "sociomaterial reconfigurations" (Suchman 2007) that is by no means predetermined by any intrinsic characteristics of a technology.

More individualized and personalize lighting systems changes the relationship between light and the body. Chalayan's LED dress provides a powerful vision for more communicative clothing. As a planner

from the City of Cambridge remarked, "People do not dress for safety at night." Perhaps in the future programmable elements in clothing will serve that very purpose. Lozano-Hemmer's installations overlay large-scale projections with silhouette's of people's bodies in the plaza. Here the silhouette is not figured for safety reasons but to draw the people present into a conversation with the video portraits from their city. (images not included here)

Some current practices already hint at how people might use lights-on-bodies in the future. Mobile phone displays are used to find keyholes, to acknowledge musicians at rock concerts and to search through handbags for lost objects. Women are encouraged to carry flashing safety lights or flashlights with them. And in regions with frequent power outages or unreliable public street lighting infrastructure, people carry large flashlights, candles, and other personal illumination devices with them out of necessity.

Variegated Lighting Conditions
Each new wave of street lighting technology – lantern, reflector lantern, gaslight, electric light – increased levels of illumination. The last wave of electrification truly enabled the explosion of light in display technologies. The World's Fairs and the emergence of the Great White Ways in the United States became essential to city identity. (Jakle 2001) Animated billboards harnessed the power of the new lighting grid for communicating large-scale advertising messages. Composed of arrays of light bulbs,[2] these displays emerged from the same infrastructure availability as ubiquitous street lighting and represent the seed for the evolution of animated display technologies today.

Though general illumination levels have increased over time, cities are still not lit uniformly at night (Otter 2008) as imagined by the designers of light-towers in the early 20th century (Nye 1992). There are still many differences among light and dark spaces and every possible color and shade in between. This variegated reality is in stark contrast to most of the public discourses around lighting which often imply two things: (1) a deterministic impact of lighting (i.e. light=safe while dark=dangerous) on space; and (2) the possibility of an even lighting of spaces over great distances. Interestingly, debates around sustainability and energy consumption have led to sometimes incompatible requirements. People require higher light levels while city governments try to reduce the wattage and frequency of lights.[3]

In part, uneven lighting conditions at nighttime can be attributed to retail and display lighting as mentioned above. Only as shop owners started to draw customers from the street in addition to their wealthy regulars did retail lighting really gain in importance:

> What we think of as night life includes this nocturnal round of business, pleasure and illumination. It derives its own, special atmosphere from the light that falls onto the pavements and streets from shops (especially those selling luxury goods), cafés and restaurants, light that is intended to attract passers-by and potential customers. It is advertising light – commercialized festive illumination – in contrast to street light, the lighting of policed order.

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[2]For example, the EPOK programmable display: http://www.archive.org/details/Behindth1935
[3] The City of Cambridge acquired all the street lights in the city a few years ago from the utility companies. As a result, planners are running a comprehensive study of lighting in the city to establish new guidelines for luminaires and more conceptual urban planning and design guidelines. Energy efficiency and sustainability is the primary concern as well as cost savings. Because the city pays a lump sum to the utilities for electricity it is in their interest to make large changes like changing lights rather than incremental improvements which could be gained from more finely tuned programming. Planner at the City of Cambridge, interviewed on May 15, 2009.

3

(Schivelbusch 1988, 1995: pp.137-143)

Soon retail lighting developed into a central feature described in European city guides in the 19th century cities. Schivelbusch (1988, 1995) sees these commercial, retail lights as sublimations of Baroque lighting festivals and carnivals.

With the introduction of electric lighting the dappled nighttime became increasingly harshly lit. For the first time, glare became a serious issue that persists today in debates around the introduction of more efficient LED luminaires.[4] While gaslight still retained some of the naturalness of the flame electric light signaled the beginning of the artificial nighttime landscape. With the introduction of LED street lighting uniformity of light and glare are once again of central concern. At Lightfair 2009 in New York, LED street lights appear almost like oversized shower heads with bright light specs to cover larger areas more uniformly. There are also trade-offs which need to be resolved. For example, the need for vertical light to illuminate pedestrian's bodies as they cross streets at night at or outside of cross-walks also causes increased glare. Cambridge City Planners have been testing new LED fixtures in Inman Square to understand these trade-offs.[5]

LED street lights on display at Lightfair 2009. http://www.lightfair.com/

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[4] Ibid.
[5] Ibid.

Narratives of Nighttime and "In Praise of Shadows"
The festive and the wary narratives of nighttime in the city emerged simultaneously and are linked to different applications for light. At the same time, darkness and shadows became endangered values in design. In fact, the latter became associated with danger and insecurity as the posters included below illustrate.

There is a price for losing the ambiguity of nighttime shadows that has also been bemoaned as a loss. For example in his book "In Praise of Shadows", Tanizaki (1977) describes how the Japanese culture's sense of beauty is linked to the interplay between shadows and light:

> The quality that we call beauty, however, must always grow from the realities of life, and our ancestors, forced to live in dark rooms, presently came to discover beauty in shadows, ultimately to guide shadows towards beauty's ends.
>
> And so it has come to be that the beauty of a Japanese room depends on a variation of shadows, heavy shadows against light shadows-it has nothing else.
>
> (Tanizaki 1977: p.18)

Tanizaki (1977) is particularly attuned to the affective impact of different lighting conditions and reflective surfaces such as gold dust. For example, he remarks that "(a) room should be brighter in winter, but dimmer in summer; it is then appropriately cool, and does not attract insects." (Tanizaki 1977: p.37) The affective and contemplative nature of shadow was also pointed out to me by a colleague from Karachi, Pakistan where she observed that the suffis turn off the street lighting near their temples to assist people with focusing. In meditation, of course, it is also customary to close the eyes to facilitate an inward focus. In the case of Karachi, Pakistan these purposeful dark moments contrast with the many inconvenient power outages. In these times, brightly lit advertising signage becomes the focus of street life because those signs are outfitted with their own generators. Street life as usual then goes on under local and global brand displays. Urban planners rarely have the luxury (or the budget) to take affective qualities of light into consideration. With increasing programmability and fine-grained lighting systems, however, similar considerations will become more pressing.

Central Square, Cambridge, MA

Introducing the Site
Central Square is one of two important commercial streets in Cambridge, MA the other being Cambridge Street. In this exploration, I studied the area along Massachusetts Avenue from Lafayette Square to Cambridge City Hall. This definition roughly coincides with the City's definition of Central Square and Murthy's 2005 thesis. Central Square has always been an important commercial district in the city. Since the 1960s it has developed a reputation for diversity for better or worse. Murthy quotes a report by the Cambridge Historical Commission: "The Central Square of today almost defies description. It is a confused, unsightly, often directly commercial strip with great variations in scale, material, and style."[6] Another evocative summary of the idiosyncratic nature of Central Square is this poem by longtime resident:

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[6] Diver, C. "The Evolution of Central Square." Unpublished report to the Cambridge Historical Commission, Cambridge, MA, 1966. Murthy 2005: pp. 22-25.

Here are some of the items you can't get anywhere else in Cambridge:
chocoloate-chip-banana-bran muffins;
real army-surplus gear;
Trinidadian phonograph records;
tap-dance-lessons;
a Chinese lunch for $2.98;
the writings of the Defender of the International Proletariat, Comrade Enver Hoxha;
macrobiotic fast food;
back issues of pornographic magazines (covers removed);
pawned saxophones;
meat-loaf specials, choice of peas or wax beans.

(Nugent, C. "Central Square: My Part in Urban Decay." *The CoEvolution Quarterly* (Winter, 1982) Cited in Murthy 2005: 22-25.)

These short excerpts make Central Square a particularly rich location for studying nighttime. Not only are there many retail locations, but also many restaurants, music venues and late-night cafés. As a result, Central Square does not close down after dark. Instead people come and go throughout the day and night.[7] Its reputation for diversity and sometimes insecurity seem to be two sides of the same coin. Waves of urban design interventions have focused on preserving the Square's unique character such as Carr, Lynch and Sandell's improvements in the 1990s which included the bus shelters and alley with colored glass. More recent improvements such as the recently completed Lafayette Square seem to propagate a more traditionalist urban design that is not necessarily in keeping with the existing diversity.

(images not included here)

Carr, Lynch and Sandell partnered with artists to enliven Central Square. This alley had been the site of many muggings and other criminal activity. Together with artists, the architects worked to reactivate the space using color and light. The light fixture behind the colored panes replaces sunlight after hours to sustain the color dappling on the ground day and night. The Austrian light artist Victoria Coeln uses similar, more sophisticated techniques for remixing the colors of light in different urban settings.
For more information on Central Square see: http://www.carrlynchsandell.com/MP_Central%20Square.htm
For background on Victoria Coeln see: http://www.victoriacoeln.at/home/vc/index_works_d.htm
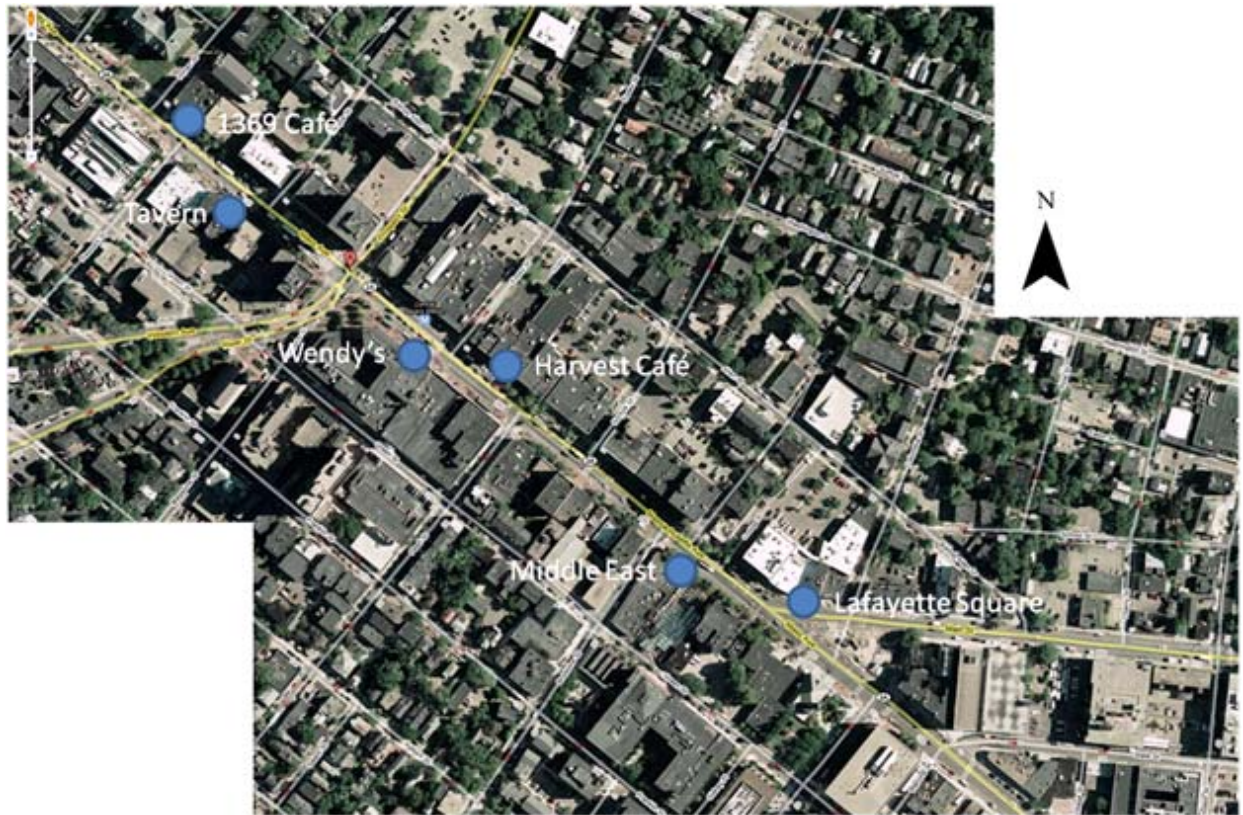

Lafayette Square by day.

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[7] For the purposes of this study I considered night until about midnight because I was interested in typical, everyday activity. Studying later hours as well would have exceeded the current scope.

Observing and Documenting Central Square at Nighttime
To gather data about Central Square at nighttime I spent two evenings there from just before sunset until approximately 11pm. During one site visit I based myself outside of the Middle East café. During the second site visit, I observe from 1369 café. On each occasion I walked the whole length of Massachusetts Avenue from Lafayette Square to Cambridge City Hall taking photographs[8] for documentation with my mobile phone. I compared my observations at night to a 1-hour walk-through the Square during the day. In addition, I communicated via email and in person with City of Cambridge officials and one resident of Central Square.

Map of Central Square and sites observed. Source: Google Maps.
(Note that a more elaborate nighttime mapping of the square is still in progress!)

It is difficult to disentangle which observable behaviors can be attributed to lighting conditions versus other factors. This preliminary study convinced me that lighting should be understood in conjunction with other factors which people respond to in urban spaces.
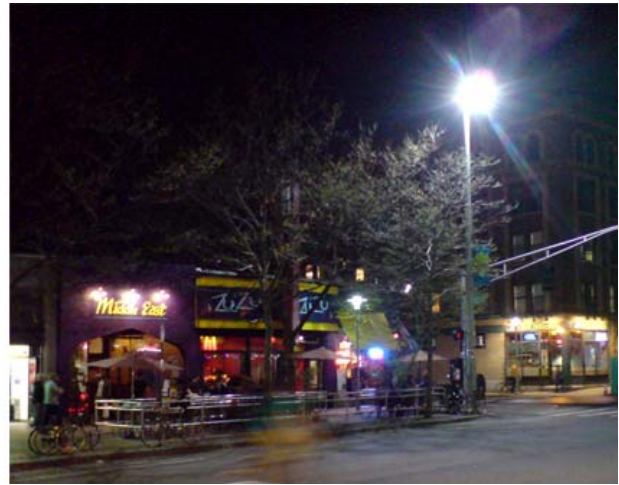
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[8] See also *Chapter 3: Researching With Photography* in Murthy 2005 for a discussion about the role of photography in documenting street media. See also *Appendix A: Time-Lapse Filming* in Whyte 1980.

Enacting Boundaries: Zones of Use and Patterns of Movement

Central Square is very active at nighttime. The numerous cafés, restaurants, shops and transit connections (buses and Red Line T-Station) make it an important area for congregation and movement. Despite the apparent fluidity with which people move through the space –I observed many joggers- there are distinct zones. For example, the stretch from the Middle East to Mary Chung's is a very active outdoor area with a distinctive group of music fans, party-goers and general socializers. The area outside of 7-11 at the other end of Central Square is populated with apparently homeless people hanging around asking passers-by for money.

Middle East – Zuzu by day and night. The nighttime image distinctly shows the two tiers of lighting. The tall lamps for traffic and the pedestrian-scale luminaires for the sidewalks.

Restaurants, bars and stores near City Hall.
From left to right: Tavern, Fried Chicken, Cantab Lounge, Pizzeria, 7-11.

More Light! Can't you give us more light!?
The most frequent request received by the City of Cambridge Electrical Department is for more light. People call and say: "I'm not feeling safe walking home. Could you please increase the light levels?" In commercial areas such as Central Square and Cambridge Street two levels of illumination address this concern. On the one hand, tall cobra lights illuminate the roadway. On the other hand, lower fixtures are intended to make the pedestrian area more hospitable. In addition, these retail districts are characterized by a slew of uneven lighting conditions emanating from store fronts. In Central Square, some storefronts have very bright nighttime displays while others shut down completely. Until recently, the Central Square Theater was a dark boarded-up stretch of the street which contrasted starkly with the neighboring properties. Now it is more integrated into the landscape and contributes to the nighttime landscape with some programmable, floor displays. Where shops have closed such as The Gap the street has also returned to its base lighting condition.

The contrast between active and closed storefronts near the T-Station and Bus Station.
Left: View of Pearl Art & Craft, Right: Closed The Gap store.

Brightly lit storefront of liquor store.

Lafayette Square by night.

Lafayette Square[9] is an exception in Central Square. The light is much brighter and yellower than the rest of the stretch along Massachusetts Avenue. In part new light fixtures are much brighter and degradation as well as dust will dim the overall light levels within the first six months to one year. However, city electricians are also reluctant to notch down the light because they typically are asked to increase light levels again.[10]
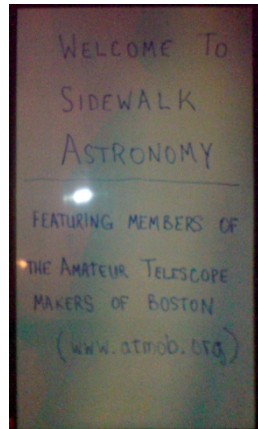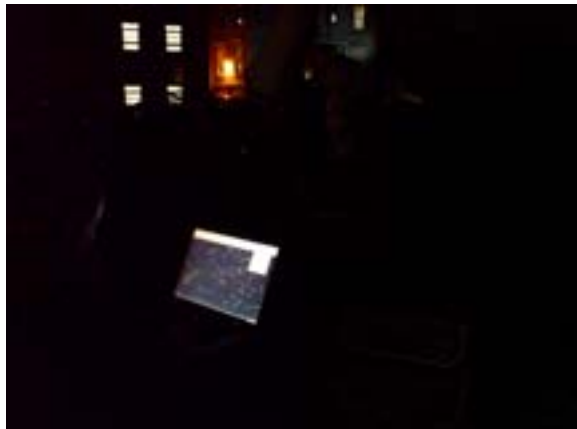
Dark Sky in the City
The popular requests cited by the electrical department are in stark contrast with an exhibit held by the Amateur Telescope Makers during the Cambridge Science Festival on the lawn of City Hall. To accommodate the star gazers the city turned off all the street lights on that part of Massachusetts Avenue. In the dim photographs, people can be seen staring intently on the activities taking place on the lawn. Enthusiasts showed me Saturn's rings as well as a red dwarf star. Across from the event the Post Office's handicapped vent glowed even more brightly than it typically does under normal lighting conditions.

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[9] The official sign reads "Jill Brown Rhone Park: Where Technology and Community Come Together."

[10] This illumination is the result of a drawn out public approval process overseen by Mass Highway. Though some officials would have preferred fewer luminaires and lower wattage they did not want to jeopardize the entire plan by modifying any elements after receiving final approval.

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Sidewalk Astronomy by the Amateur Telescope Makers of Boston (www.atmob.org) held during the Cambridge Science Festival on the lawn in front of Cambridge City Hall.

Safety and Perception

As discussed in the previous section, more light is typically associated with increased safety. However, perceived safety and actual light levels are not always correlated as this Central Square resident notes:

> When I imagine walking through Central Square at night, I think of it as well-lit but still full of strange characters. The light seems adequate, but that's not always enough for me to feel comfortable walking around there alone.

For this resident, Central Square feels illuminated, but not always safe. In fact, overly lit areas such as Lafayette Square may even indicate a lack of safety to some. For this resident, the bright lights almost indicated trepidation among responsible entities about possible risks. "Please do not let anything bad occur in our new urban design show case."

The *Outdoor Lighting Guide* differentiates between "lighting to deter" and "lighting to reveal" fulfilling three basic principles:

- To provide illumination to assist the detection of intruders
- To avoid shadows which might offer concealment
- To deter an intruder by creating an environment of potential exposure.

(List from The Outdoor Lighting Guide 2005: pp.258-265)

In public spaces, regular street lighting must accomplish some of these goals. Perception of safety plays a central role in making people feel comfortable:

> An important feature of security lighting is to make things **appear to be bright**. This does not necessarily mean that large quantities of light have to be provided. It is often possible to simply direct light towards the wall of a building so that the intruder will be seen either as a lit figure or as a silhouette against the bright building depending on which side of the lighting fittings he is standing.

(emphasis mine, The Outdoor Lighting Guide 2005: p.261)

In Central Square, a significant police presence on bikes, on foot and in vehicles bolsters the safety lighting in place. I observed a wildly flashing display of blue and white police lights in front of 1369 as a car was stopped for a traffic violation which I could not identify from a distance. Some locations like the sides of McDonalds or 7-11 have clearly been fitted with additional safety lighting. The McDonalds façade in particular is a striking example of lighting to deter as it is directed outwards rather than a dual-purpose functional and safety light. These lights seem to indicate that no one belongs in that space. The lights make it uncomfortable to stay there long and I only observed two young adults chatting there on bikes once throughout the night.

In addition to police, bouncers at restaurants and music venues regulate their portion of the pedestrian area. One person harassing smokers outside of the Middle East was asked repeatedly by bouncers to move on and then gently accompanied to public benches outside the venue's immediate territory. At 1369 people float in and out of the outdoor seating area some of whom are customers while others are asking for money or other help. They cross the street from the nearby 7-11 or move up Massachusetts Avenue from some of the less busy areas at nighttime between Prospect Street and Inman Street. These

visitors are not removed by police. Instead, there seems to be a neighborhood-based self-regulation as most customers and passers-by seem to know each other.

These last observations correlate well with what Whyte (1980) observed in popular plazas in Manhattan, New York. He writes: "The way people use a place mirrors expectations." (Whyte 1980: p.63) In response to the question of "undesirables" he writes that popular use regulates their presence naturally. Rather than building defensive street furniture (such as the middle bars on benches throughout Central Square or in the elaborate anti-skateboarding features placed on the new borderstones in Lafayette Square) or removing it altogether (which was done in front of Central Kitchen restaurant in Central Square) he argues for more inviting features that will attract all types of people. The causal relationships between physical design features and social outcomes are never deterministic. As a result, every place will have an ideal balance between inviting and deterring street furniture that should reference lighting conditions as well.

Signage and A/Effect Lighting
The City of Cambridge runs a Façade/Signage & Lighting Improvement Program for retailers in the City. So far two stores have taken advantage of this program according to the program director at the City of Cambridge: *Pandemonium Books and Games* on Pleasant Street and *Clear Conscience Café* on Massachusetts Ave. Again according to the program director, these improvements focus on "unobtrusive, energy efficient, and appropriate lumination for the signs designed". Reiterating his point, he writes: "The lighting was proposed to highlight the store signage and only the store signage."
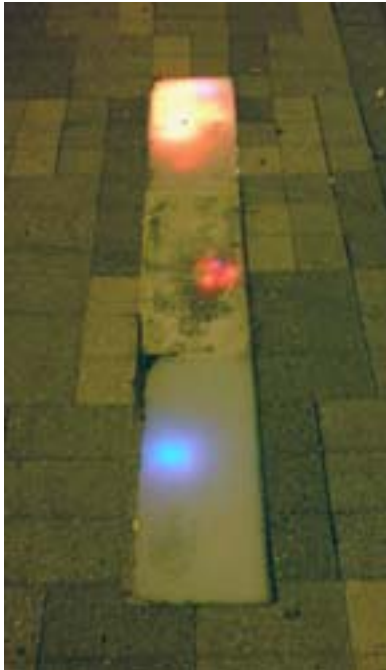

Clear Conscience Café signage.

Pandemonium Books and Games signage.

These signage improvements are driven primarily by sustainability concerns while preceding images of bars and retail establishments, for example Tavern, are aiming to achieve an effect. Similarly, the installation designed by Philips ColorKinetics on the corner of University Park adjacent to the Fire Station tries to function as an icon for the neighborhood's entrance. Sadly, the installation has fallen into disrepair in a testament to the need for ongoing maintenance.

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Philips ColorKinetics installation at the entrance to the University Park public-private development.

According to a Cambridge planner cost and sustainability concerns limit city government's ability to provide effect lighting in the future. Therefore, these interventions will increasingly be left to private entrepreneurs attempting to differentiate their locations. Past successes such as the colored glass panes on the bus shelters and in the alley way discussed earlier (see p.9 above), however, indicate that it may be important to revisit the need for affective light installations. An example is the work of light-artist Victoria Coeln. She names her installations "chromotophes" to evoke the importance of light and color for shaping space and place. Through her work it is possible to glean how well-crafted light installations can transform undesirable urban spaces into desirable ones through color without over-lighting them.

Conclusion

> "…a light bulb creates an environment by its mere presence."
>
> M. McLuhan, *Understanding the Media*, 1964: p.8 quoted in
> http://en.wikipedia.org/wiki/The_medium_is_the_message

Perhaps the light bulb creates an environment as McLuhan notes, but it is the performative interventions of people in those lit environments that create urban life (Chase et al. 2008, Lynch1972).[11] Since its first widespread installation in the late 17th century, illumination has become central to the experience of nighttime in the city. This preliminary exploration of Central Square demonstrates how entangled lighting has become with other aspects of public space. Though the preceding analysis does not capture all the dynamism or complexity of social interactions in public space (Goffman 1963) it describes what tangible and ephemeral features contribute to the nighttime setting in Central Square. Simple binaries such as light=safe and dark=dangerous do not hold true on close inspection. How can these findings begin to establish alternative narratives about illumination and nighttime in the city?

Acknowledgements

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[11] B. Kirshenblatt-Gimblett writes: "Performance is also central to the production of the urban vernacular, for performance produces spatial form. By performance I mean everything from hanging the laundry out to dry to hopscotch or lion dancing during the Chinese New Year holiday." In Chase et al. 2008: p.19.

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