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The Tampa "Smart CCTV" Experiment

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Abstract

In June 2001, a neighborhood in Tampa, Florida called Ybor City became the first urban area in the United States to be fitted with a "Smart CCTV" system. Visionics Corporation began a project with the Tampa Police Department to incorporate the company's facial recognition technology (FRT), called FaceIt, into an existing 36-camera CCTV system covering several blocks along two of the main avenues. However, this "smart surveillance" experiment did not go as smoothly as its planners had hoped. After a two-year free trial period, the TPD abandoned the effort to integrate facial recognition with the CCTV system in August 2003, citing its failure to identify a single wanted individual. This essay chronicles the experiment with FRT in Ybor City and argues that the project's failure should not be viewed as solely a technical one. Most significantly, the failure of the Ybor City "Smart CCTV" experiment reveals the extent to which new surveillance technologies represent sites of struggle over the extent and limits of police power in advanced liberal democracies.

Keywords: CCTV; Smart CCTV; smart surveillance; video surveillance; facial recognition technology; police technology; police power

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The Tampa "Smart CCTV" Experiment

In June 2001, Ybor City – an historic-entertainment district in Tampa, Florida known as Tampa's "Latin Quarter" – became the first urban area in the United States to have its public streets fitted with a "Smart CCTV" system. A company called Visionics Corporation began a project with the Tampa Police Department (TPD) to incorporate their automated facial recognition product, called "FaceIt", into an existing 36-camera CCTV system covering several blocks along two of the main avenues in Ybor City. Installed for free by Visionics, FaceIt promised to upgrade the existing CCTV system in order to provide the security needed to transform Ybor City into a more desirable tourist and consumer destination. The technology was designed to automatically search images of faces grabbed from video feeds against a database of wanted individuals, enabling the police to target those individuals for apprehension and arrest. The "smart" surveillance system promised to benefit both Visionics and the TPD, serving as an experimental test case for FaceIt and putting the TPD on the cutting edge of new police technology. And Ybor City, an historic part of Tampa once known as the cigar manufacturing "capital of the world", would be transformed into a sort of "digital enclosure" (Andrejevic 2007) – a virtualized urban space, safe for middle-class consumers.

However, the Ybor City experiment did not go as smoothly as its planners had hoped. The announcement of the system's installation triggered a heated debate, playing out on the streets of Ybor City, in the local and national press, and in the halls of the Tampa city government. Supporters claimed that FRT would help make Ybor City a safer place and thereby bring new life and business to the area, while opponents countered that it was too Orwellian and would ruin the unique and lively character of the neighborhood. Others suggested that the technology did not work and so was at best a waste of time and at worst a dangerous diversion of police resources. These competing claims plagued efforts on the part of proponents to establish it as a necessary, desirable, and functional "security solution" for Ybor City. After a two-year free trial period, the TPD abandoned the effort to integrate FRT with the CCTV system, citing its failure to identify a single wanted individual.

In this essay, I chronicle the Ybor City "Smart CCTV" experiment and the controversy surrounding it in order to better understand the politics of FRT development and deployment, following Lucas Introna's (2005) call for a "disclosive ethics" of facial recognition system development. (See also Introna and Wood 2004.) The effort on the part of the TPD and Visionics Corporation to institute "Smart CCTV" in Ybor City provides an opportunity to consider the reasons for interest in new digital or "algorithmic" forms of surveillance and their implications for the role of policing in modern democratic societies. As Graham and Wood (2003) have argued, there are intimate connections between the digitization of police surveillance techniques and the changing political economy of cities. A close look at

the Ybor City case likewise demonstrates that the move to automate the perceptual labor of surveillance should not be viewed as a natural and inevitable process of computerization. Instead, computerization involves processes of social construction, driven and shaped by institutional priorities and with a tendency to serve the more privileged sectors of society, if not always as successfully as intended. Like all technological systems, "Smart CCTV" does not develop as an autonomous force moving forward of its own volition, but instead requires the concerted investment of a host of social actors, and the controversy and competing claims about the technology play a fundamental role in its institutionalization. In addition, just as the development and adoption of digital techniques of CCTV optimization should not be viewed in narrowly technical terms, the failure to integrate facial recognition technology with CCTV in Ybor City was not solely a problem of technical viability, nor does it spell the end of attempts to create functioning "Smart CCTV" systems. Instead, it demonstrates the extent to which efforts to create automated, digital surveillance techniques represent sites of struggle over the extent and limits of police power in advanced liberal democracies.

The Problem with CCTV

Closed-circuit television is a transmission system for television that differs from the broadcast form associated with the popular medium: "live or prerecorded signals are sent over a closed loop to a finite and predetermined group of receivers, either via coaxial cable or as scrambled radio waves that are unscrambled at the point of reception" (McCarthy n.d.). Although commonly viewed as a more recent phenomenon, police use of CCTV dates back at least to the 1960s in the UK (Chris Williams 2003). But it was the 1980s and '90s that saw an exponential increase in the use of CCTV by police and private security firms in both the U.S. and Europe for monitoring urban spaces, gated communities, workplaces, and capital-intensive spaces such as banks, retail outlets, and casinos. The U.K. has far outpaced other countries in the extent of police CCTV deployments, spurred on by "City Challenge Competitions" that provided significant public funding, but other countries have also experienced significant growth, especially in private security applications (Hempel and Töpfer 2004; Norris, McCahill and Wood 2004). In the U.S., police in at least 25 cities had installed CCTV systems to monitor public areas by 2001, and many more were considering doing so "to give troubled down-town business districts a new lease on life, help public housing communities reduce destructive criminal elements, increase safety in public parks, monitory traffic congestion and catch red light violators" (Norris, McCahill and Wood 2004: 114).

If one takes as given the role of the police as arbiters of law and order and believes that they should have wide latitude in performing that role, there seems little need to question the reasons for police adoption of new surveillance technol-

ogies, beyond concerns about their cost and effectiveness. Similarly, if one accepts assumptions about crime and criminality as being causes of social disorder rather than effects – the prevailing orientation that the police themselves take to defining the problem of crime – then the solutions obviously center on more police power, including more police surveillance. In his study of police power and cultural narrative in twentieth-century America, Christopher Wilson (2000: 5) identifies a "paradox of modern American cultural life": "that much of our popular understanding of criminality and social disorder, particularly street disorder, comes from a knowledge economy that has the police – putatively agents of order – at its center". Prevailing police views about crime and disorder that have emerged in the U.S. and the U.K. since the 1970s are not especially sympathetic to arguments that challenge the authority of the police or offer broader social and political-economic explanations of crime and criminality. In the words of William Bratton, current police chief of the LAPD, "It is a great disservice to the poor to say that they lose jobs and so become criminals…The penicillin for dealing with crime is cops. I thought I had already proved this. Criminologists who say it is economics or the weather or some other thing are crazy" (in McCarthy 2004: 56). Bratton's comments express the predominant view of the police toward the problem of crime, a view (not entirely new) that dismisses social analyses of the "root causes" of crime as detached from the brutal reality of the streets.

The so-called realist view that stepped up policing and surveillance is the solution to the "crime problem" not only shapes police practice but also carries over into both public understandings of crime and policy orientations aimed at dealing with it, and the prevalence of this view makes it difficult to effectively contest police adoption of new "crime prevention" technologies. However, not everyone agrees that increased police power is the answer to the "crime problem". In fact, police power itself has long been a political problem in modern democratic societies, and not only among radical social critics. For example, the civil rights activist James Baldwin's charge that the police were the "occupying armies" of the inner city was taken up as a topic of urgent consideration by liberal reformers in the U.S. in the 1960s (Wilson 2000). The debate about the legitimacy of police power and its appropriate limits is ongoing, if often muted, and it represents one of the main reasons why the spread of CCTV systems – and the effort to improve upon CCTV technology – has generated some, albeit minor, controversy.

Part of the controversy is sparked by the research of sociologists, legal scholars and other critical observers, who have raised questions about the causes of CCTV proliferation and its social and political implications. According to this body of research, the seemingly self-evident reasons given for police adoption of CCTV elide more complicated relationships between the spread of video surveillance, the role of the police in modern societies, and the social construction of crime and disorder. A number of scholars maintain that the spread of CCTV is tied to a marked shift in approaches to crime control and criminal justice since the 1970s,

specifically a movement away from penal welfare and rehabilitation, and movement toward more actuarial and punitive approaches (See for example, Simon and Feeley 1994; Simon 2007; Wacquant 2001). David Garland (2001) has argued that crime prevention strategies now take high crime rates as a normal part of life, leading criminal justice systems to experiment with new ways of *managing* crime rather than assuming crime can be reduced by addressing the social conditions that produce it. High crime rates and the persistence of the crime problem in the face of what appear to be failed law enforcement programs have created new problems of legitimacy and work overload for criminal justice systems. In turn, these problems have led to the adoption of strategies of crime control that seek to offload responsibilities for crime prevention onto individuals and non-state actors, making the avoidance of crime part of the responsibilities of each citizen and organization, part of the built environment, and part of everyday life.

As part of the move to make crime prevention a commonplace part of everyday life, strategic shifts in crime control strategies have also included explicit efforts directed at measuring and managing levels of public fear and insecurity. In the 1980s police officials and policy makers in both the US and the UK began to realize that public fear of crime was to some extent detached from actual crime rates, and so they began to take measures aimed at changing public perceptions, regardless of their impact on crime itself. The reduction of the fear of crime among preferred groups became a "distinct, self-standing policy goal" (Garland 2001: 122). One result of this new orientation to crime control is that CCTV systems now hover over urban centers and shopping malls as a matter of course, extending the gaze of police or private security throughout those spaces, with the visible presence of cameras often standing in for the authorities themselves. CCTV systems are used to target not only criminals and suspects, but also public perceptions about crime. In other words, some of the work that surveillance systems do is symbolic, tied to the symbolic authority of the police. The pursuit of both CCTV systems and new technologies of "Smart CCTV" must be understood in large part as a response to the more symbolic aims of creating the perception of stepped-up policing – attempts to reduce fear of crime among preferred groups by investing police with an image of high-tech surveillance capability.

Still, it would be a mistake to characterize CCTV technology as performing a strictly symbolic function. Surveillance cameras are not just for show – police in fact *use* CCTV systems – but the ways they use them rarely follow in lock step with the intentions of policy or system design (McCahill 2002; Norris and Armstrong 1999). In a major study of thirty CCTV control rooms in an English city, Michael McCahill (2002) examined the way that various actors involved in using the systems interacted with one another, and through those interactions limited the capacity of system integration. Through various forms of non-compliance or partial adherence to prescribed uses, humans often got in the way of realizing the full potential of integrated CCTV systems. Lynsey Dubbeld

(2005) has likewise studied the limitations of CCTV functionality, focusing not on the human operators but on the ways that material design limits the capacity of CCTV systems. In her study of a CCTV system in railway stations in the Netherlands, "targeted surveillance was made problematic as a result of the particular design of the control room…as well as by the capriciousness of technical artifacts central to the operation of the CCTV network" (Dubbeld 2005: 88).

As a result of combined human and technological limitations, CCTV systems have predictably fallen short of expectations in enabling the police to effectively detect and deter crime and discourage disorder and antisocial behavior in designated spaces. The major limitations and failures of CCTV systems to fulfill their original objectives of crime prevention and public safety has been a major theme in recent critical and sociological literature (Groombridge 2008; Hempel and Töpfer 2009; Murakami Wood 2009; Webster 2009). It is not only critical scholars who have identified problems with CCTV effectiveness. William Webster (2009) has identified a decisive shift in CCTV policy in the U.K. since the early 2000s toward growing concern about the financial cost of managing these systems and a reassessment of their technical capabilities. As David Murakami Wood (2009: 2) noted in a recent *Surveillance and Society* editorial, CCTV technology "has become the new version of the nuclear 'baroque arsenal' identified by Mary Kaldor in the Cold War: massive, increasingly inefficient, complex and intricately connected projects that generate new 'needs' whether they succeed or fail".

Police interest in new technologies that promise to help them make more effective use of CCTV systems stems in large part from the technology's failed expectations. Rather than abandoning unsuccessful CCTV systems, social actors involved in their deployment and management have pursued other avenues to address their shortcomings, including the integration and computerization of CCTV systems (Webster 2009). Once surveillance systems become part of the material form of police practice, inefficiencies and other organizational problems that they introduce into the everyday work of policing become problems in themselves. As Ericson and Haggerty (1997: 389-390) have noted, the ever-increasing workload of the police – especially the "paper burden" that accompanies their role as "knowledge workers" – leads police agencies to "search constantly for improved computer-based solutions" that promise to fulfill the practical needs of police work while also serving as a source of organizational legitimacy. It is consistent with this self-perpetuating bureaucratic logic to find police turning to "improved computer-based solutions" to deal with the growing *video* burden.

The Ybor City Experiment

The first urban center to integrate FRT with a police CCTV system was not Ybor City but the London Borough of Newham, and from the beginning, the officials responsible for the Newham "Smart CCTV" project were concerned with creating

the *appearance* of high-tech police surveillance as much as actually providing a means of apprehending criminal suspects. In 1998, Visionics partnered with a British-based company, Software and Systems International, to upgrade Newham's extensive CCTV system of 140 fixed cameras and 11 mobile units. In explaining the need for the system, Robert Lack, Newham's Security Chief, pointed to problems of unemployment and increasing crime levels following the closure of the docks (Lack 1999). "The need was to reduce the public fear of becoming a victim of crime and increase the criminals' perception of the chance they would be detected", said Lack (2001). The effectiveness of the new "Smart CCTV" system would not be gauged strictly in terms of the identification and interception of suspects, but also in terms of its effects on public perceptions. Whether the facial recognition system actually worked in practice would be less important than whether people actually believed that it worked. As planned, the system would initially be used to identify muggers and shoplifters, including "members of a shoplifting ring nicknamed the 'Kenya Boys' by the local police", and eventually expanded to include "known or suspected pedophiles" (Thomas 1998: 5). According to a company spokesperson, the technology had distinct advantages over human operators: its eyes never got tired after staring at screens for hours, and "it never goes to the loo, either". (Oldcorn, quoted in Thomas 1998: 5).

When the Tampa Police decided to try out the technology three years later, it was on a considerably smaller surveillance apparatus, on a system of only 36 cameras, but it was motivated by the same concerns with reducing public fear of crime and the seemingly inherent fallibility of the human element in CCTV system operation. How Ybor City became the first urban space in the U.S. to be fitted with "Smart CCTV" stemmed from a number of converging factors. In many ways, Ybor City represented an ideal test site for such an experiment. David Watkins, the systems integrator responsible for the hands-on work of installation, called it his "living laboratory" (personal communication, August 23, 2003). Perhaps most importantly, the police were already operating a CCTV system in the area, installed as part of stepped-up security initiatives that accompanied redevelopment projects in Ybor City in the 1990s. The neighborhood also had a high crime rate relative to other neighborhoods in Tampa and a bustling weekend party scene that gave it a reputation for being a risky place to visit. According to Detective Bill Todd of the TPD, police use of the new high-tech surveillance technology would "send a message" to the public that they were "committed to enhancing the quality of life in our neighborhoods" and "making Ybor City a desired destination point for our citizens" ("Tampa Police Department Installs" 2001). Like the Newham "Smart CCTV" project, proponents had in mind not only identifying criminal suspects, but conveying an impression about the active role of the police in adopting new crime-fighting tools in order to make the area safer, a "desired destination point" for the mobile consumer.

How Ybor City acquired its party reputation offers some insights into how it became the first public test site for "Smart CCTV", and why the fate of the neighborhood became indelibly tied to expanding police surveillance. The area known as Ybor City was founded in 1886 at the beginning of a major wave of immigration from southern and eastern Europe to the United States. Named after Spanish cigar magnate Vincente Martínez Ybor, Ybor City became home to a thriving cigar industry. Jobs in the cigar factories brought immigrant groups of Cubans, Spaniards, Sicilians and Italians to work and live in Ybor's planned community (Mormino and Pozzetta 1987). The cigar industry declined by the mid-1930s, but Ybor City remained a stronghold of the same groups that had been drawn there around the cigar trade. It was the social, political, and economic changes following WWII, including activist federal government policies supporting urban renewal, which radically altered and disrupted the unique immigrant community (Ibid.). Tampa's first urban renewal agency commenced operations in 1962 with a charter to rehabilitate and redevelop "slum areas". Bulldozers began tearing down Ybor City in 1965, preparing to create "a tourist attraction second to none in the U.S.", according to the urban renewal office (Ibid: 309). Soon after, the construction of Interstate Highway 4 split off Ybor City from its northern section. At least 1200 families were displaced, leading to a downward spiral of neglect. Civil unrest followed the police shooting of a young black man in Tampa in June 1967, and although Ybor City was not the site of the protests, media coverage had a damning impact on area, drying up support for urban renewal programs. Renewal programs in another Tampa neighborhood known as "the Scrub" displaced a large number of low-income African-American families, many of whom moved into vacant housing in Ybor City. As financial institutions red-lined Ybor City, the razed land remained vacant, and the blight of the area deepened (Ibid.).

However, by the late 1980s, a new, hip bohemian culture was emerging in Ybor City, with a critical mass of artists attracted there by the cheap rents and unique, old-urban character of the neighborhood (Snider 2003). As one local reporter observed, after two decades of failed renewal efforts Ybor City seemed "to be getting a new lease on life", drawing tourists and local Tampa residents attracted to the artist studios, street vendors, and live entertainment (Stengle 1988). The distinctive community taking shape in Ybor City began once again to attract the attention of developers. In an editorial titled "Ybor City's past can enhance Tampa's future", a local corporate lawyer advocated for renewed investment in Ybor City in order to help Tampa "become a world-class convention city" that could "compete with Orlando, Miami, and other Southeastern cities for convention business" (Sanchez 1991: 2). The City of Tampa stepped in, renewing its efforts to remake Ybor City, designating it a "Community Redevelopment Area" in 1988, and two years later, Ybor City was named a National Historic Landmark District. The Ybor City Development Corporation (YCDC) was established, devising a plan to encourage "the rehabilitation of the district through the stimulation of the

private sector investment and business activity" (YCDC n.d.). A series of development projects were undertaken in the area, including a $50 million project called "Centro Ybor", a retail/entertainment complex. Writing in 1995, ethnographer Timothy Simpson (1995) commented on the cultural climate that had emerged in Ybor City, after the cycle of failed urban redevelopment programs and renewed efforts at preserving the unique heritage of the neighborhood:

> Ybor City is currently caught in the tension between being a district marked by 'historical preservation' and being self-consciously in a 'state of transition'… Nouveau art boutiques and trendy restaurants compete for attention with the boarded-up buildings and crumbling facades that surround them…The air is charged, though, with the possibility of community, of radical change (702-703).

This charged moment of possibility might have blossomed if the needs of the neighborhood's local inhabitants were not subordinated to the imperative of making Ybor City a competitive convention, tourist, and consumer "destination point". In addition to the redevelopment projects that were reshaping Ybor City, the City of Tampa introduced a set of incentives to entice businesses to locate there (Snider 2003). Rules requiring bars to be 1,000 feet apart were suspended, and other standards governing stormwater drainage, parking provision, and transportation impact fees were waived. The business sector that was most attracted by these incentives was the nightclub industry, according to Eric Snider (2003), a local reporter. Bar owners appealed in droves to the Tampa City Council for "wet zonings", permits that allow alcohol sales, and "the council complied, handing out wet zonings like Jolly Ranchers on Halloween" (Ibid.). While the alcohol permits spawned renovations to buildings that might have otherwise remained vacant, the result was the overproduction of drinking establishments. At the same time, the Centro Ybor complex had managed to attract chain stores like American Eagle and Pac Sun, and needed to attract additional businesses in order to become a profitable retail center. In an effort to "clean up" the area and make it more hospitable to corporate retail establishments, the city ousted the small vendors and street performers that populated the streets in the 1990s, a move that destroyed the bohemian, artistic vibe and "sucked some of the freaky character out of the strip" (Ibid.).

What occurred in Ybor City during the last decade of the twentieth century resembled similar socioeconomic transformations occurring in cities across the US: the redesign of urban public spaces according to corporate-defined redevelopment priorities, leading to the overinvestment in retail/entertainment districts. As a result of economic crises in the 1970s, cities were forced to adopt a heightened competitive posture, vying for position as centers of consumption, among other dimensions of strategic competitive advantage (Harvey 1994). This competitive stance was particularly intense in Florida, a state whose economy depends heavily on tourism and convention business. Tampa was in constant competition for tourist and visitor dollars with other Florida cities, including Orlando just eighty miles east. In the course of Tampa's effort to gain a competitive edge, efforts were made

to remake Ybor City into a "variation on a theme park", a privatized space of consumption designed to capitalize on a nostalgic, stylized, and commodified version of the past (Sorkin 1992). What consistently accompanied these commercially oriented urban "revitalization" and "renewal" programs, as Mike Davis (1992: 223, 224) observed of Los Angeles, was an "obsession with physical security systems", and "an unprecedented tendency to merge urban design, architecture and the police apparatus into a single, comprehensive security effort".

Given this concerted, if flawed effort to remake Ybor City into a tourist-consumer mecca through a model of competitive, privatized urban redevelopment, it was not surprising to find the Tampa City Council and the Ybor City Development Corporation moving in 1997 to direct public funds for the installation of a CCTV system, to be monitored by the Tampa Police. The area would have to be purged of its undesirable inhabitants and visitors if it was ever going to be a place where people with money would come to spend it. And when the neighborhood failed to generate sufficient consumer dollars to support the demands of corporate-defined redevelopment projects, blame was consistently placed on the problem of crime and public perceptions of the area as too dangerous to visit. Only one Tampa City Council member voted against installing the CCTV system, saying that he did not think there was "a compelling enough reason to 'whittle away' at the public's freedom of movement by recording what bars they frequent or which people they meet" (quoted in Danielson 1996). Tampa deputy police chief John Bushell disagreed: "This isn't a Big Brother kind of thing…We just want to make it a place where people can come and feel comfortable walking around at night" (quoted in 1Hathaway 1997).

If one of the main reasons that police gave for adopting CCTV technology was their interest in reducing fear of crime and making middle-class visitors feel secure, another related reason concerned their charge to monitor the crowds that gather in Ybor City on weekend evenings. One of the greatest "operational challenges" police faced in the area, according to Detective Todd, was dealing with the crowds of revelers that spilled out into the streets on Friday and Saturday nights, creating a chaotic scene that pushed beyond the boundaries of policing capacity (Hunter 2002). Every weekend evening in Ybor City the crowd would explode with partying enthusiasm, but always threatened to become a major problem, or many minor problems that overpowered the police officers assigned to patrol the area. Police discourse described the crowd as riddled with "dangerous individuals" – thieves, drug dealers, and especially "sexual predators" – who eluded the police and preyed upon the innocent. With crowds numbering as many as 30,000 people, according to Detective Todd, "traditional police tools break down…. Patrol officers walking in that crowd have trouble seeing what's going on" (quoted in Hunter 2002: 20).

This eruption of the problem of the crowd in the city has a long genealogy, accompanied by the development of technologies and spatial arrangements designed

to govern the space of the city and make the occupants of the crowd more visible. For nineteenth-century social theorists like LeBon and Sighele, the crowd embodied "a highly emotional, irrational, and intolerant 'psychic current'…the lowest form of 'common consciousness'" (Czitrom 1982: 114). The specter of the crowd that haunted social thought inspired "the invention of technologies of spaces and gazes", explains Nikolas Rose (1999: 72), "the birth of calculated projects to use space to govern the conduct of individuals at liberty". Town planners envisioned the construction and maintenance of the healthy "liberal city" through the orderly arrangement of public spaces, opening them up to visibility and making each individual the target of "a play of normative gazes", under close observation not only of the authorities but also of one another (Rose 1999: 73). Foucault (2007: 18) similarly has addressed the moment when economic development made necessary the suppression of city walls, reducing the supervision and control over daily comings and goings and thereby generating new insecurities from "the influx of the floating population of beggars, vagrants, delinquents, criminals, thieves, [and] murderers" who came from outside the city. The lack of physical barriers around the city necessitated new ways of making the space visible and maintaining control over the bodies mingling in that space.

The police attention to the problem of the crowd in Ybor City, and their interest in technologies designed to make the crowd more visible and controllable, suggests a neoliberal manifestation of these earlier efforts to construct the "liberal city". The Tampa Police expressed familiar concerns about the crowd and the threat it posed to the orderly maintenance of Ybor City. The physical presence of the police was augmented by the presence of cameras and signage throughout the neighborhood. However, the arrangement of video surveillance was soon deemed less than optimally effective, since the "floating population" continued to penetrate the space of the crowd, crime rates continued at unabated levels, and the redeveloped space failed to generate profit. When the CCTV system alone did not do enough to extend the police gaze into the crowd in order to identify and purge undesirables from the space of Ybor City, a new layer of technology was deemed necessary.

The Solution: Interpassive Policing?

Beginning in the late 1990s, the limitations of CCTV as a technology of policing led entrepreneurs working to commercialize the nascent technology of automated facial recognition to pursue what they saw a business opportunity. Facial recognition technology, along with other forms of "algorithmic surveillance" (Norris, Moran and Armstrong 1998; Introna and Wood 2004), promised to provide a means of managing the enormous amount of video generated by CCTV systems without adding hundreds of human observers. Creating "Smart CCTV" would involve integrating a hardware and software system that would automatically grab

faces from video feeds, translate the extracted images into digital templates, and then match those templates against a mugshot database of suspect individuals. However, despite the claims of proponents, it was by no means certain that FRT could be successfully integrated with CCTV to create functioning "Smart CCTV" systems.

Although no one knew the technology's limitations better than the developers themselves, companies like Visionics were eager to move forward with deployments in urban spaces and other settings, recognizing a potentially profitable market. Visionics began marketing their FaceIt system as a solution to the problems of video overload and suspect identification from surveillance video, claiming that the technology was an improvement over both existing, "passive" CCTV technology, and over the human monitors of CCTV systems. With each new press release, Visionics declared FaceIt better able to handle larger databases and greater numbers of images, faster and more accurately than previous versions. In 1997, Visionics announced the release of "FaceIt Multiface™", ostensibly "the world's first face recognition system capable of capturing and identifying multiple faces in the same field of view, and tracking these faces continuously" ("Visionics Demonstrates" 1997). Six months later, Visionics released another new version of FaceIt, called "FaceIt DB", claiming that it had the "ability to check every face that appears in a camera's field of view in real time", taking automated surveillance "to its highest level" ("Find Criminals" 1998). In 2001, Visionics released their "FaceIt ARGUS" system, declaring it "the first commercially available facial recognition product that can handle an unlimited number of camera inputs and provide real-time identification" ("Visionics Corporation Announces" 2001). A brochure for FaceIt ARGUS claimed that it "revolutionizes the functionality of conventional CCTV", provides "active, real-time identification for today's passive CCTV systems", and "combats human operational challenges: not affected by superficial changes in appearance, remembers large numbers of faces, [and] does not get distracted or fatigued".

The claims Visionics made about FaceIt were revealing about what proponents wanted to achieve with "Smart CCTV", if not what could be realistically accomplished. Visionics posited FaceIt as an improvement over both "passive" CCTV systems and the inefficient, fallible human operators of those systems. They pitched their technology as a labor-saving device, promising to save CCTV operators hours of time observing surveillance video and relieving them of the responsibility for identifying criminals and suspects that appear on the screens. At the same time, there seemed to be an implicit acknowledgment that the kind of labor it would save users of CCTV systems was never possible in the first place. Human operators of CCTV simply could not remember the number of faces needed to adequately monitor the exploding volumes of surveillance video, nor did they have the attention span needed to identify even those faces they could remember with sufficient reliability. Facial recognition technology promised to quite literally

do the watching *for* the CCTV operators, relieving them of the need to pay attention to the screen.

The possibility of delegating responsibility to the "Smart CCTV" system for the perceptual labor of watching video and recognizing faces suggested a paradoxical form of passive media activity, one that Slavoj Žižek (1997) has referred to as "interpassivity". According to Žižek, "interpassivity" is the uncanny supplement to the celebrated notion of "interactivity" associated with new media technologies. Whereas interactivity implies a user actively engaged with electronic media and taking part in the production of content, interpassive arrangements allow the medium itself to do the work of reception for the user. Žižek uses the example of the VCR aficionado who records hundreds of hours of movies and television shows, knowing that there will never be time to watch it. Instead, the *VCR* does the watching instead of the viewer. (DVR technology is even more apropos, since significantly more content can be automatically recorded.) Gijs Van Oenen (2006) has considered Žižek's concept of interpassivity as it applies to the domains of labor and politics. Today, "hands on" work means manipulating a computer interface, Van Oenen argues, and the prevailing tendencies of contemporary work arrangements make workers more alienated than ever from the products of their labor. The "interpassivization" of labor – the automation of both manual and mental activity – is deeply embedded in post-Fordist forms of labor organization, including outsourcing, more "flexible" workforces, and loose, "network" forms of business restructuring. These developments have had a profound effect not only on work arrangements but also on worker subjectivity, as workers are forced, paradoxically, to become both more flexible and more passive at the same time – to be prepared for constant technical retraining, relocation, and experimentation, while allowing machines to perform not only the manual but also much of the mental labor.

The promoted capacity of FaceIt to make "passive" CCTV systems more "active" and relieve human operators from their perceptual labor embodied this logic of "interpassivity", suggesting that the solution to the problems of CCTV monitoring could be found in the "interpassivization" of police surveillance labor. The "hands on" work of monitoring surveillance video – itself already a mediated form of police supervision – would involve merely responding to computer programs that would do the actual work of identifying dangerous threats to the community. If "Smart CCTV" worked, the human labor of monitoring would require less in the way of specialized police knowledge of criminal identities. This removal of human perceptual capacity from the process of identification was posited as a special benefit not only in its capacity to make "passive" CCTV more "active", but also as a technically neutral form of identification that would ostensibly counter the prejudicial tendencies of police officers. Not only was the technology tireless, efficient, and memory-intensive, it also promised to function in a culturally neutral way, blind to racial or ethnic differences of faces. In the words

of Visionics CEO Joseph Atick, his company's product "delivers security in a non-discriminatory fashion. FaceIt technology performs matches on the face based on analytical measurements that are independent of race, ethnic origin or religion. It is free of the human prejudices of profiling" ("Terrorism Prevention" 2001). "Interpassive surveillance" – allowing facial recognition technology to perform the mental labor of watching – would ostensibly bring a measure of objectivity to police surveillance practices.

Of course, this is what was *promised* of "Smart CCTV", not what it delivered. The automated recognition of faces from surveillance video presented considerable challenges. Government evaluations of facial recognition algorithms conducted in 1996 showed that dynamic image matching and one-to-many searching of variable quality images resulted in much lower accuracy rates for facial identification.[1] Follow-up testing in 2000 confirmed that the new commercially available systems still had considerable limitations with respect to matching dynamic (video or filmed) images (Blackburn, Bone and Phillips 2000). The performance of facial recognition systems was affected by things like facial pose variations, the amount of time that elapsed between the original facial image and the probe image, distance between the person and the camera, variations in facial expressions, and changes in lighting (Ibid.). Studies consistently found that the quality of images taken from surveillance video was too variable to support reliable automated facial identification. Computers were well on their way to accurately matching faces in standardized photos taken in controlled settings, but still not doing very well at identifying faces from video taken in real-world conditions. In addition, some studies found that for certain algorithms, Asians and African-Americans were recognized at a higher rate than whites (Introna and Nissenbaum 2009).

The claims that Visionics made about FaceIt – which were more than a little overstated – created expectations that would inevitably go unfulfilled, much like the original aims of the CCTV system. Although digitization promised to facilitate "a step change in the power, intensity and scope of surveillance" (Graham & Wood 2003), in fact additional layers of technical integration would not resolve, once and for all, the "urban problem" in Ybor City. Nor was it clear whether and how the technology would fit into police practice. As LAPD Police Chief Bratton stated emphatically, the "penicillin" needed to deal with crime was more *cops*, not more technology. If the Ybor City "Smart CCTV" experiment is any indication, the cops themselves – at least the ones responsible for trying to make the facial recognition system work in despite its limitations – were not necessarily rushing forward into the brave new world of interpassive policing. At the same time, it was precisely the power that digitization promised to afford the police that generated opposition to the use of facial recognition technology with video surveillance. As we will see, a vocal contingent of local and national observers agreed with Phil Agre's (2001) contention that people's faces are not their bar codes.

The Controversy over the Ybor City "Smart CCTV" Project

No sooner did Visionics announce the installation of FaceIt in Tampa than a heated "war of interpretations" (Latour 1996) broke out over police use of the new surveillance technology in the public streets of Tampa. The announcement of the Tampa Police Department's plans to use FRT in Ybor City attracted attention from the local and national press, from the American Civil Liberties Union (ACLU), from policy makers, and from other individuals and groups representing a range of interests. The debate that played out in the press should not be understood as separate from the project itself. Competing interpretations of the technology would have a role in shaping the form that automated facial recognition would take in Ybor City, or whether it would take any form at all.

Press coverage registered some local support for the project, but also a significant amount of opposition from within and outside of Tampa. For several weeks following the system's installation, opponents organized street protests in Ybor City, where demonstrators wore gas masks, Groucho Marx glasses, and bar code stickers on their foreheads. *The New York Times* reported that one protestor "walked by a camera, gestured obscenely and shouted, 'Digitize this!'" and *USA Today* reported that another protestor wore a computer monitor with Mayor Dick Greco's face on the screen (Associated Press 2001; Kasindorf 2001: 3A). References to "spy cameras", "digital line-ups", and "facial frisking" circulated in the press coverage, registering specific anxieties about facial recognition technology. A reporter from *U.S. News and World Report* called the Ybor City experiment a "real-life version of *The Truman Show*" (Meek 2001: 20). Randall Marshall, the legal director for the ACLU of Florida, argued that it amounted to placing everyone on the street in a "virtual lineup", and that more public deliberation was needed before police adopted the technology (in Canedy 2001: A1). The decision of U.S. House Majority Leader Dick Armey (R-Texas) to join the ACLU in opposition that put the Ybor City FRT experiment firmly on the national stage. "I'm not sure there's been a case so perfectly Orwellian," declared Armey; "placing police officers in a remote control booth to watch the every move of honest citizens isn't going to make us safer" (quoted in McGuire 2001). Armey called for a congressional inquiry into the extent of federal funding invested in the development and deployment of facial recognition and other surveillance technologies, as well as more congressional oversight aimed at keeping the diffusion of surveillance technologies in check. Such vocal public opposition prompted a defensive response from local Tampa officials. Some members of the Tampa City Council began to question publicly whether the project should have gone forward, and there was some indication that several council members had not fully understood what they had approved.

Supporters of police use of facial recognition technology in Ybor City defended it on a number of grounds. The Tampa Police spokespeople dismissed the issue of privacy, making the legal claim that people have no "reasonable expectation" of

privacy in public. Police and other supporters also made the argument that the technology was essentially the same as standard police practice, only the new technology would be more effective, faster, and more accurate than human police officers alone. According to Detective Todd, "this is no different than a police officer standing on a street corner with a handful of pictures, except for that it's more accurate and stops trouble faster" (quoted in Meek 2001: 20). Todd also suggested that FRT was a labor-saving device and a police force-multiplier, allowing the TPD to "maximize the process of pointing out people we're looking for without putting 20 more officers on the street" (quoted in Canedy 2001: A1). City Councilman Bob Buckhorn, who had shepherded the original proposal to install FRT through the approval process, likewise became an outspoken proponent of the technology, defining it primarily in terms of its similarity to standard police procedures and its labor-saving benefits:

> I think what we are doing with facial recognition technology is merely applying modern technology to age-old policing techniques. When a police officer goes to roll call in the morning, he's given what's called a hot sheet, a list of wanted individuals.…What we are doing is just merely dumping a database of known offenders, of wanted individuals, sexual predators, lost children, into what is a modern means of identifying people. So to me it's no different than what the beat cop used to do, which would be walk around with that hot sheet. We're just using technology to do it in a more sophisticated, less expensive, less time consuming fashion (personal communication, August 22, 2002).

In advocating police use of the technology, Buckhorn insisted that it was nothing radically new, just a more efficient form of identification, less costly, more high-tech and faster than human police officers. His justification invoked a nostalgic notion of "age-old" policing, appealing to a perceived desire for a simpler, lost moment of cops-on-the-beat, at the same time claiming the superiority of the technology over such conventional forms of police practice. Buckhorn's defense of the project also suggested that the composition of the criminal watch-list database was a settled matter, and that it contained records only of those in clear need of police apprehension. Although there was no explicit policy about "sexual predators" or "lost children", these figures became the preferred targets of the system among its defenders, consistently used as a means of legitimating police adoption of the technology. Visionics CEO Joseph Atick reiterated the frightful image of the sexual predator: "Wouldn't you want to know if a murderer or a rapist is sitting next to you while you're eating a sandwich? I would" (quoted in Meek 2001: 20).

The technology also had supporters among local Tampa residents, who maintained that police use of FRT was warranted in order to protect their right to security in Ybor City. In a letter to the editor in the *Tampa Tribune*, Patricia Benton, resident of the suburb of Seffner, expressed her support:

> I will not go to Ybor City at any time, day or night, nor will I take out-of-town guests to visit there, because of the crime.…a person cannot visit the shops and restaurants anymore without fear of being carjacked, raped, or killed. And now we have

> a modern invention that will curtail that activity. But wait! It may infringe on our precious 'rights.' I have rights, too. I have the right to go where I please in public without worrying about being harmed. And the police have the right to utilize modern inventions that will secure that end. The framers of the Constitution would hide their heads in shame to know what we have come to, when the rights of criminals are more protected than the rights of honest citizens (Benton 2001: 16).

It is not difficult to read Ms. Benton's expressed fear of crime as a salient problem in itself, regardless of whether she ever had been or would be a victim of crime. In fact, Patricia Benton saw herself as *already victimized* by the criminal class that threatened her freedom to shop, visit restaurants, and "go where she pleases". Of course, the local media's preoccupation with crime may have given her reason to fear being carjacked, raped, or killed in Ybor City, and overblown descriptions of a fully functioning facial recognition system encouraged the view that the technology could help "curtail that activity". For Ms. Benton and others like her, the new surveillance technology offered a legitimate means of police protection, violating the rights only of those who do not deserve them. This line of argument reiterated the comments of a politician responsible for the Newham facial recognition project in London, in response to objections from privacy advocates: "Yes, it is a civil liberties issue," he noted, "Our priority is the liberty of the people of this borough to go about their business without fear of crime. The rights of the majority are the most important consideration, not the rights of criminals" (Corbett, quoted in Thomas 1998: 5).

Pitting the rights of "the majority" against an essentialized class of criminals is a stark dichotomy at the center of punitive forms of actuarial justice that have taken shape in the U.K. and the U.S. since the 1970s. The expressions of Patricia Benton, concerned citizen, fueled a new discourse of crime policy that "consistently invokes an angry public, tired of living in fear, demanding strong measures of punishment and protection" (Garland 2001: 10). The Tampa Police were not simply imposing a vision of high-tech crime control on an unwelcoming public, but were responding to the demands of preferred groups for protection and secure access to public spaces. One can hardly fault Ms. Benton for wanting to move about in public spaces without being attacked. But her claim to the city expressed a sense of entitlement to public space that, far from holding out a vision of open access for all, was infused with contentious politics of exclusion. As Doreen Massey (1994: 168) has argued, "notions of place as source of belonging, identity, and security" are deeply tied to "notions of the self in opposition to the other that threatens one's very being". The claim that facial recognition technology targeted only specific dangerous identities belied the more general effort to define and identify the "floating population" that threatened the "security" of Ybor City, the *sense* of security of people like Patricia Benton from the other that ostensibly threatens their very being. That sense of security was vital to Ybor City's commercial "revitalization", and technological projects designed to create that sensibility are not aimed exclusively at maintaining order, but also at re-establishing

the legitimacy of police to decide "which communities are in a community and which are not" (Wilson 2000: 217).

As the conflicting perspectives of the project suggest, the controversy over the Ybor City FRT experiment stemmed from the longstanding tension inherent in liberal governance between "the twin dangers of governing too much…and governing too little" (Rose 1999: 70). Liberalism denotes a certain ethos of governing which must constantly strike a balance between these two poles, writes Nikolas Rose. Governing too much means threatening to distort or destroy "the natural laws" of families, markets, society, personal autonomy and responsibility, on which good government depends; governing too little means "failing to establish the conditions of civility, order, productivity and national well-being which make limited government possible" (Ibid.). The effort to integrate automated facial recognition with CCTV for the mediated supervision of Ybor City was a project caught up in this tension, and whether and how it would be made to work as a functioning technology would depend on whether the acceptable balance could be negotiated, and especially whether people were convinced that more sophisticated police surveillance technologies were a necessary prerequisite to their "freedom".

"Drawing a Blank"

On September 11, 2001, events intervened to generate support for police use of FRT in Ybor City, at least temporarily. The 9/11 terrorist attacks, coming just three months after the experiment began, instigated a barrage of press and policy attention to biometric technologies. If most federal policy makers had barely paid attention to the TPD's experiment with "smart" surveillance, it now seemed to require their urgent attention. The Congressional committee hearings that Rep. Dick Armey requested about the use of FRT for public surveillance did in fact take place three months after his request, in October 2001; however, the deliberations were not about the appropriate scope and limitations of police use of new "smart" surveillance technologies, but how rapidly they could be deployed at airports, border control stations, and other sites. Still, the momentum given to the project in the aftermath of 9/11 did not force opponents of "Smart CCTV" to acquiesce to the use of FRT in Ybor City. In January 2002, the ACLU renewed their challenge to the project, releasing a report titled "Drawing a Blank: The Failure of Facial Recognition Technology in Tampa, Florida". In the report, the ACLU made the case that facial recognition technology simply did not work and so represented a misdirection of security priorities. It referred to federal government tests (the FRVT 2000) where even the best products performed only moderately well in controlled laboratory settings. It also provided evidence, from documents received under freedom of information requests, revealing that the Tampa Police stopped using the system less than two months after they began using it, precisely because of its poor performance. The report had an undeniably negative impact on percep-

tions about "Smart CCTV", but it did not put an immediate end the experiment. Shortly after the report was released, Visionics announced that the system was being upgraded to run on more than one video, grabbing faces from six video feeds simultaneously and thereby reducing the operator's need to switch cameras at his or her discretion. Still, no facial identifications materialized, and it is unclear whether the Tampa Police began using the facial recognition system again in earnest. Press coverage of the project waned, and it received little or no public attention for over a year.

Then, in August 2003, the police experiment with facial recognition technology again made headlines: "Ybor cameras won't seek what they never found", declared the *St. Petersburg Times* (Dennis 2003: 1A). In one last move, the Tampa Police issued a statement announcing their termination of their contract with the company, then called Identix. The *Tampa Tribune* reported that the system was shut down, "having failed in its objective" to recognize "the facial characteristics of felons and runaway children" (quoted in Krause 2003). According to Police Captain Bob Guidara, the facial recognition system "was of no benefit to us, and it served no real purpose" (quoted in Stacy 2003). Others spun the termination of the project differently. Tampa Police spokesman Joe Durkin said he "wouldn't consider it a failure…You are always looking for new and efficient ways to provide the best service to the community. There's going to be ups and downs" (quoted in Dennis 2003: 1A). Identix offered a one-sentence statement that defended the company as a responsible corporate citizen and suggested that the public mood was not right for the system's implementation: "Identix has always stated that this technology requires safeguards, and that as a society we need to be comfortable with its use" (quoted in Stacy 2003). However, TPD spokesman Durkin insisted that police discontinued using the system "because of the lack of arrests, not the privacy issues" (quoted in Krause 2003).

Smart CCTV or no Smart CCTV?

The controversy over the Ybor City Smart CCTV experiment was, fundamentally, a struggle over the appropriate extent and limitations of police power, a balancing act that has consistently posed a challenge to liberal democracies and one that seems to lean, in the present climate, toward expanding police power. It would be wrong to assume the initial installation of the CCTV system in 1997 was itself universally accepted, but by the time the "Smart CCTV" project began in 2001, many people had more or less accepted the idea of video surveillance in public spaces. It was the idea of automated facial recognition in particular that generated controversy, invoking competing visions of a brave new technological future. While some nostalgically hoped for the return of a recovered, crime-free community from the mythic past, others saw an urban dystopia in the frighteningly mold of *1984*, a prison-like environment devoid of all freedoms where everyone is un-

der the constant gaze of sophisticated police technologies. For opponents, the police experiment with FRT in Ybor City demonstrated a power grab over and above the use of "basic" CCTV, essentially turning every person on the street into a criminal suspect. But while the move to upgrade the CCTV system gave opponents an opportunity to reignite the debate over police surveillance of urban space, it is important to recognize that shutting down the CCTV system itself was never considered as a viable option (which is not to say that no one raised the issue). Although the experiment with facial recognition technology was unsuccessful, the CCTV system continues to generate images designed to keep the area under constant, mediated police supervision.

The effort to integrate facial recognition technology with video surveillance in Ybor City failed for a combination of contradictory reasons. The project suffered to some extent from successful moves by vocal opponents to posit the technology as one that gives the police too much power. Of course, there were others, especially the police themselves, who viewed it as an ineffective technology of crime control, because it never managed to identify anyone. As some pointed out, the lack of positive identifications may have meant that the system was serving as an effective deterrent, keeping wanted individuals away from Ybor City.[2] However, since addressing the *fear* of crime was as important as actually preventing it, deterrence was an insufficient measure of the technology's effectiveness. Instead, the police needed a success *story* in order to sell the "Smart CCTV" system: a narrative of a vile criminal identity – preferably a rapist, murderer, or child molester – being apprehended thanks to the facial recognition system. For reasons that extend beyond the specific technical limitations of the facial recognition system, the police never acquired the material they needed to create such a story. Without such a story, or multiple stories, "Smart CCTV" became more of a liability than a benefit for the Tampa police, denying them the glory of catching the bad guys and leaving them only with the perception of a power grab based on a faulty technology. In short, it offered them neither an immediate practical solution to the "video burden" nor a compelling symbolic display of their technological sophistication.

The experiment with facial recognition technology in Ybor City ended without the permanent adoption of Smart CCTV by the Tampa Police, but spokesman Joe Durkin was probably correct to qualify the term "failure". The negative attention the project received throughout the process made it impossible for the developers to define either the initiative or the technology on their own terms, and the termination of the project could not help but set back efforts to define automated facial recognition as a viable technology. But from the beginning, people directly involved in the project understood the highly experimental nature of what they were doing, and despite public statements about a smoothly functioning system, they were likely well aware that there was no guarantee the experiment would be successful. To make facial recognition technology work with video surveillance systems in urban spaces, it must be tested and developed in those spaces, and only

through a series of "ups and downs", advances and setbacks, will the necessary improvements be made that transform "Smart CCTV" from a set of experiments to a functioning technology. As long as the diffusion and use of CCTV systems proceeds apace, fueled by both essentialized notions of the "criminal element" and the persistent pressure on the police to appear in control of "the crime problem", then experiments with new technologies for optimizing CCTV functionality will likewise carry on. Rethinking this largely ineffective approach will require a full-scale effort at redefining the problem – another kind of legitimation campaign aimed at defining crime not as a cause but as an effect of social disorder, not as a normal part of everyday life and a forgone conclusion for certain "kinds" of people, but a product of deepening social inequalities tied to structural conditions. Without this redefinition, we will witness not only the persistent police pursuit of more sophisticated surveillance technologies, but also the construction of many more prisons and walls behind which to consign the expanding disenfranchised and individuated "criminal" class.

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Notes

1 For an excellent overview of the U.S. government and other FRT technology evaluations, along with policy guidelines and a discussion of moral and political implications, see Introna and Nissenbaum (2009).

2 There were no significant drops in the crime rate in Ybor City during the experiment. Crime statistics by area are available at the Tampa Police website.

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