Simveillance in Hyperreal Las Vegas

by

Nathan Radke

A thesis

submitted in partial fulfillment of the requirements

for the degree of

Masters of Arts

in the

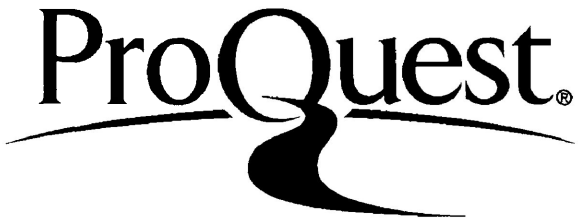
Department of Sociology

Faculty of Social Sciences and Humanities

LAKEHEAD UNIVERSITY

THUNDER BAY, ONTARIO

February 2002



This thesis is dedicated to my family, my wife Mary,
and my advisor Professor Gary Genosko,
who all helped me so much while I was writing.
Also, to Professor Chris Tindale, who bought me lunch once.

Introduction

On a Thursday afternoon, an average Canadian leaves her office, and goes to a nearby bank machine to get a cash advance on one of her credit cards. She uses the money to buy lunch at a mall food court, then wanders into various shops purchasing clothing and compact discs with her Interac-equipped bank card. Returning to her office, she logs on to the internet, and checks her email. She then goes back to her assigned task of data entry. An ordinary day for millions of Canadians, but what is extraordinary is how well-documented this banal trip was. The woman's face has been photographed, videotaped, and time-coded. Records of her purchases have been distributed to her, the stores, and her bank. Her employer knows that she has checked her email. Were she to go missing, investigators would be able to put together a fairly comprehensive itinerary of her day, and there would be plenty of up-to-date images for the evening news. But it should be noted, it is possible that at no time during her day was she actually being watched by a pair of human eyes.

It is not an overstatement to claim that surveillance permeates many aspects of North American life. There is no shortage of sociological theory to help illuminate the situation; sociologists have been keenly aware of the importance of surveillance for decades. However, at the dawn of the 21st century, it is questionable whether the theories that have dominated surveillance discourse for the last twenty-five years can still provide insight. Technology has certainly advanced in that time, both in capability and in frequency. The average person now takes for granted technology that would have been unthinkable a quarter of a century ago. Along with the technological envelopment has come an immersion in simulation, as people find themselves

operating in a virtual world of computers and videoscreens. The question is whether this has simply intensified conventional surveillance in North American society, or produced a new kind of creature entirely. This thesis will argue that the articulation of the two forces has produced a hybrid; for lack of a better word, this hybrid can be called simveillance. Simveillance can not be encompassed by the classic concepts of surveillance that dominate current discourse.

In order to establish this claim, one must first examine the well-entrenched surveillance theories and concepts that are currently used by social and cultural theorists. There is an incredible wealth of sources for this area, so only a cursory examination of the most significant texts will be possible. Next, one must examine theories of simulation, to provide insight into the effects of the transformation of the actual into the virtual. While simulation theory dates back to the early 1970's, it has not enjoyed the same acceptance and acknowledgement in the sociological community that the major surveillance theories have, and there are far fewer key texts in the genre. Finally, one must examine the relatively new and untested field of surveillance simulation, which at the time of this writing is limited to one book.

The second section of this thesis documents attempted first-hand observations from field work done in the easily accessible, high-surveillance, high-simulation environment of the Las Vegas Strip. There are some obvious difficulties present in such an endeavour; the Strip is a virtual hyperreal maelstrom, and it is difficult to say whether it can be experienced on a level beyond its own simulated facade. Despite this handicap, some "hard" data concerning mundane matters such as numbers of cameras covering specific areas may be recorded though objective observation. The Strip is an

extreme locale, but it is this very extremity that renders the relations between surveillance and simulation more obvious. Therefore, this bizarre area may provide understanding into more ordinary, everyday experiences.

This thesis will suggest that the social forces of surveillance and simulation have a number of significant and complex relationships. Simulation can enhance surveillance, confound surveillance, and replace surveillance. To fully understand the scope and impact of one, social scientists must have a firm grounding in the other.

Classical Surveillance Theory

In order to understand current theories of surveillance, one must first examine the works of the nineteenth century political theorist and legislative reformer Jeremy Bentham. His concept of the panopticon cast a long shadow over modern ideas concerning the relationship between social control and observation.

In his own time, Bentham was not considered very influential. He was not read by the general populace, and his attempts to put his theories into practice were often met with indifference or antagonism by the ruling class. He once claimed that "But for George the Third, all the paupers in the country would, long ago, have been under my management" (Bentham, 195-198). However, he was held in some esteem as an important thinker by such contemporaries as John Stuart Mill and William Whewell (Mill, 1; Whewell, 41-42).

Bentham was a believer and an advocate of the utilitarian school of ethics, whereby moral decisions must not only be rational, but quantifiable. Any action may be judged by calculating the amount of pleasure or happiness that results, and subtracting the amount of pain that has similarly resulted. He argued that law and the machines of

law should take this into account (Hart, 75-78). In this way, Bentham felt that the extremes of anarchy and totalitarianism could be tempered or avoided entirely (Hart, 79-80).

One of Bentham's passions was his idea of the panopticon. He felt the implementation of this concept would vastly improve the conditions and operations of penal institutions, which were chaotic, disease-infested, and disordered at the time of his writing (Bentham, 192). As a utilitarianist, he was interested in reducing the pain that was inflicted in the prison system; he argued that "No man *deserves* punishment . . . When a surgeon cuts into a limb, is it because the patient has *deserved* the smart? No, but that the limb may be healed" (Bozovic, 6). He wanted to develop techniques that would be effective in reforming prisoners and protecting society, but would not rely on torture or harsh punishment. He felt that his idea could accomplish this (Bozovic, 4-6).

The panopticon as described in the 1791 paper *Panopticon: or the Inspection House* had two critical elements, the physical architecture of the building, and the management of the institution. Without the specific architecture, the management scheme would be impossible; without the management scheme, the building design would be useless. Bentham envisioned a circular building, with cells along the circumference and a monitoring station as the hub. Spokes would lead from the hub to the cells, and the cells themselves would be very well-lit through both natural and artificial light. Through the use of blinds, the keeper would be both invisible and unverifiable to the prisoners "unless where he thinks fit to show himself" (Bentham,

194), but all of the prisoners would be instantly visible to the keeper with little or no change of position. There would be no aspect of the cells that would not be directly under the gaze of the keeper, and no aspect of the keeper under the gaze of the prisoners (Bentham, 194). The cells would be employed for all purposes: eating, working, sleeping, praying, and for punishment. Each cell would have three or four prisoners in it, except where solitary confinement was required (Bentham, 194-195). The prisoners would be able to exercise by running or walking in a fixed wheel, similar to a hamster wheel. The revolutions per minute of the wheel would be pre-determined, to prevent a lazy prisoner from avoiding exercise (Himmelfarb, 215).

The hub itself would be entered through a trap door in the floor, to prevent the prisoners from seeing the comings and goings of the watchers. Since the prisoners would be able to see the silhouette of the watcher against the light of the hub's lantern, an opaque object could be inserted into the lantern to simulate the presence of the watcher. In a properly run panopticon, this opaque object should be just as effective as a highly trained inspector (Bozovic, 18).

There would be only one entrance to the building from the outside, and there would be no public paths near the outside perimeter. There would be a large wall separating the panopticon from the city "to *shelter peaceable* passengers from the fire of the building" (Bentham, 195). It would be impossible to approach the building without being under the gaze of sentinels stationed along the approach walkway (Bentham, 195).

The management of the panopticon was as important as the physical nature of the building. Bentham provided an outline of the operation plan; it was important to

keep the prisoners well fed, and clothed. The cells must be kept warm, and clean. Both spiritual and medical assistance must be immediately available. In addition to removing the prisoners from society, they must be schooled, and taught means of legal livelihood. The time of the prisoners would be strictly controlled, so that every waking hour would be spent productively in work, under instruction, or satisfying personal hygiene requirements (Bentham, 199). An extensive report would be printed and published at the end of every predetermined term; this report would include information on the moral, medical, and economical condition of the prisoners. Whenever the public had an occasion to view the prisoners, the inmates would wear horrible masks that represented the severity of their crimes. In this way, the public could witness the physical representation of the moral consequences of crime, while protecting the identity of the inmates (Bozovic, 5-6).

In the panopticon, the spectacle of punishment would remain. However, the physical reality of punishment- the wooden stocks, the leather whip, the steel bars- would be replaced by the fiction of punishment and surveillance. This fiction would ensure both proper behaviour by the inmates, and the deterrence of innocents from committing crimes (Bozovic, 6-8). On one hand, there is the fiction of the masks played out to visitors of the prison. To Bentham, the punishments should be staged as well as a play in a theatre, in order to increase the deterrent benefit while minimizing the actual physical pain inflicted on the inmates (Bozovic, 6). On the other hand, there is the fiction of the watcher in the tower. In the proper panopticon, the highly trained observer may be replaced by any person off the street, or even by a small cut-out outline of the human form situated in the lantern.

Bentham classified the watcher in the tower as an "inferential" entity; a being whose existence can only be inferred by observing its effects (Bentham: 1935, 7-8). The only way a prisoner can infer the existence of the observer in the hub is by witnessing his or her own punishment when he or she misbehaves, by hearing about the punishment of another prisoner who misbehaves, or hearing the disembodied voice through the specially designed "conversation tubes" (Bozovic, 12). By removing the watcher from the sphere of "perceptible" entities, he or she is freed from his or her body; in the panopticon, the unseen observer takes on the role of God himself (Bentham: 1935, 8-9). God is never seen or felt, but his power is absolute over his subjects.

Bentham's obsession with inferential and fictitious beings originated in his childhood. His great-grandmother often spoke of seeing a ghost, and young Bentham found the idea of ghosts both terrifying and fascinating: "It was a permanent source of amusement to ply me with horrible phantoms in all imaginable shapes... I suffered dreadfully in consequence of my fears (Bentham: 1935, xi)". Even as a university scholar, Bentham continued to be afraid of unseen supernatural entities, while denying their existence:

> In no man's judgement can a stronger persuasion of the non-existence of these sources of terror have place than in mine; yet no sooner do I lay myself down to sleep in a dark room than, if no other person is in the room, and my eyes keep open, these instruments of terror obtrude themselves... The tale of the apparition of ghosts and vampires is not more fabulous than in general the tale of worth, moral, or intellectual, as applied to these creatures who form the class of state dignitaries (Bentham: 1935, xvi).

Bentham's fear of the unknown fictitious entity played a large role in his works on the panopticon. That a fictitious being could have real effects in a subject (fear, respect,

awe, or obedience) figures significantly in Bentham's penal plan. To Bentham, the warden's absence would be a far more effective tool than his presence, because of the limited nature of the perceptible entity versus the unlimited scope of the inferential entity (Bozovic, 9-12). Illusions and spectral notions could control prisoners better, and with less physical pain caused, than stocks, bars, chains, or whips could ever do, and the deterrence effect on the non-offending public would be similarly effective. The prisoners would be haunted, just as Bentham was terrorized in his youth.

In 1965, Gertrude Himmelfarb argued that Bentham's panopticon was not based on utilitarian principles of minimizing pain, but on the less heroic principle of maximizing Bentham's profits. Himmelfarb noted how the plans changed according to purely economic factors; for example, the original plan called for absolute segregation, but when Bentham was informed that cell walls would be extremely expensive, he modified the cells to take two, three, or four prisoners (Himmelfarb, 210). The profits from the work that the prisoners would perform – six days a week, fourteen hours a day – would be appropriated by the contractor of the prison (Himmelfarb, 214). A prisoner would only be released from the panopticon if he enlisted in the army or navy, or if a benefactor contributed a £50 bond: "In the latter case, the bond was to be renewed annually, the failure of renewal to mean the return of the prisoner to the penitentiary" (Himmelfarb, 217). The panopticon contractor would become very wealthy by exploiting his inmates, and Himmelfarb argues that this is the driving concern behind the panoptic plan: "But the travesty is not yet complete. The final turn of the screw, the final pitch of perfection, is the discovery that Bentham himself actually intended to be the contractor and the governor of the prison" (Himmelfarb, 220).

Despite Bentham's efforts, the panopticon did not become an influential model for prison builders, and he did not become wealthy by it. Other than a Russian panoptic workhouse built in 1903, and a small number of semi-panoptic nineteenth-century American prisons, the designs were ignored by architects and social theorists until twentieth century philosopher Michel Foucault disinterred them (Boyne, 290). Foucault devoted an entire chapter in his book *Discipline & Punish: The Birth of the Prison* to Bentham's ideas, and used them to illustrate his own concepts of discipline and power.

Foucault's work concerned the transformation of the technologies of social domination from the public torture and private exclusion of the offending subject during the seventeenth and eighteenth centuries to the rational, internalizing modes of discipline employed by the modern state (Habermas, 81-82). Foucault saw the panopticon as the physical, architectural manifestation of this theories.

During seventeenth century plagues, European towns would enforce a strict series of absolute rules over the populace. The blocks of the town would be segmented, and a syndic would be appointed to keep his particular block under surveillance. Anyone who left his or her house and was observed by the syndic would be put to death, to control the bodies of the townspeople and to prevent the spread of the disease (Foucault, 195). Every day, the syndic must compile a report concerning the health status of his subjects, so the incarcerated people must present themselves at their window for bodily inspection, in order that they may be judged according to the binary opposition model of well/unwell (Foucault: 1995, 199). However, rather than becoming a vast unwell mass as the earlier lepers had, the plague victims remain as separate entities in order to facilitate individualized surveillance. While the lepers were

excluded from society, the plague victims were disciplined back into society by having their movements controlled, and by having their bodies under professional scrutiny (Foucault: 1995, 198).

To Foucault, the panopticon was an architectural realization of the disciplined society. The "compact, swarming, howling masses that were found in places of confinement" were avoided, by keeping a strict separation and definition of the visible individual bodies of the subjects (Foucault: 1995, 200). This perfection of power should render power's actual use unnecessary, as the subjects internalize the bodily regulations, and create in their own minds the unverifiable surveillance. Foucault argued that "it is not necessary to use force to constrain the convict to good behaviour, the madman to calm, the worker to work, the schoolboy to application, the patient to the observation of the regulations" (Foucault: 1995, 202.). In addition to this, the panopticon would also function as a laboratory. Because of the strict monitoring, new medications, treatments, punishments, and techniques could be used and compared to other methods. Because of the regulation of the smallest aspect of life in the panopticon, social experiments could also be carried out; for example, keeping male and female subjects separate, then integrating them at an assigned time (Foucault: 1995, 203-204). The knowledge gained from these exercises would reinforce the power structure, as power and knowledge are inseparable in Foucault's theories:

> Knowledge and power are integrated with each other, and there is no point in dreaming of a time when knowledge will cease to depend on power. . . It is not possible for power to be exercised without knowledge, it is impossible for knowledge not to engender power. (Foucault: 1980, 52)

Foucault argues that power is not simply the uni-directional end result of controlling

apparatuses such as police or armed forces. Instead, power flows everywhere, and is created by the dominating discourses of experts and sciences. It is not laws or rulers that create and channel power, it is knowledge (Foucault: 1980, 122-126). The knowledge of experts – fuelled by the gaze of the expert eye over the subject – creates the categories over which discipline and power may be exerted, and justifies the formalization of power under rules of right: "Hence we have a triangle: power, truth, right" (Foucault: 1994, 31-32).

To Foucault, the panopticon has given rise to an uncountable number of planned or actualized variations: in schools, in factories, in barracks, in prisons, in hospitals, in workhouses, and in mental institutions. Anywhere that power is exercised over a large number of subjects by a small number of controllers, the panopticon renders the application of power both more economical and more effective (Foucault: 1995, 207-209). Time spent in any particular panopticon prepares the subject for time spent in any other panopticon, due to the internalization of the disciplinary mechanisms. These mechanisms are not specific to any one institution, but instead belong to society in general. They merely find their greatest focus within the walls of a panopticon (Foucault: 1995, 213-217).

While Foucault went into great detail concerning the physical architecture and daily operation of the planned panopticon, he does not examine the fictional nature of its existence, either in the theatrical spectacle of the masked prisoners throwing the nature of their crimes into sharp relief, or in the ghostly entity in the tower that torments them. To Foucault, the panopticon was a conduit for the flow of power, not a haunted theatre. The ghost story in Foucault's version is the possession of the inmates by the

internalized disciplinary mechanism, although this is not seen as a fiction, but as a product of the exercise of power.

Just as Bentham's plans for the panopticon were met largely with indifference, Foucault's panoptic theories became the dominant paradigm within surveillance theory. Although Foucault was writing at the dawn of the computer revolution, they did not play a significant role in his surveillance theories. Other theorists applied Foucault's panoptic concepts to the emerging field of electronic information.

One of the key texts in the field of electronic surveillance is a work of fiction, George Orwell's 1948 dystopian novel 1984. Orwell's novel introduced several terms into the surveillance lexicon, and tied electronic surveillance in with totalitarianism and oppression. While 1984 predated Foucault's writings, it did not play a significant role in surveillance theory until the 1980s, when electronics had advanced to the stage whereby Orwell's predictions could be realized to a degree.

In the novel, Orwell describes a totalitarian country where everyone is constantly under scrutiny. The most insidious tool of surveillance is the telescreen, a two-way monitor that was positioned in every dwelling and was never shut off. The telescreen would observe and record while the subject betrayed his or her inner thoughts through small facial gestures or grimaces (Strub, 44). While subjects would be physically isolated in the panopticon, in 1984 subjects are virtually isolated in the virtual cell of the television screen. People would obey the rules in Orwell's novel for the same reasons that Bentham argued people would obey the laws in his panopticon- they would be trying to avoid certain punishment. Since the monitors were never off, and they were omniscient, the only way to avoid punishment was by constantly conforming to the

norms (Strub, 45). The name for the norm-enforcing organization behind the monitors was "Big Brother", a metaphor which figures heavily in post-Foucauldian surveillance analysis (Strub, 40-41), as well as in popular songs, political cartoons, and public discourse (Marx, 201-210). "Big Brother" represents the unseen watcher in Bentham's tower, although it has not been established whether or not Orwell was influenced by Bentham's works while he was writing 1984 (Strub, 40). If Foucault provided the theory that would dominate the field of surveillance, Orwell provided the tone and the phrasing.

A year before the title year of Orwell's novel, reporter David Burnham released The Rise of the Computer State, which examined the degree to which surveillance had become automatized and widespread. Burnham used a variety of examples to illustrate how computerized surveillance, while not at the level predicted by Orwell, was certainly a powerful tool of social control. Burnham examined the town of Pittsfield, Massachusetts, where there was an experiment conducted whereby over two thousand families would have every purchase they made at the local supermarket recorded. The families would then receive special test commercials via their television sets, and correlations would be drawn evaluating the effectiveness of the test advertisements (Burnham, 15). Even before the personal computer revolution of the mid 1980s, the engine of every 1981 Cadillac V8-6-4 contained a small microprocessor that measured how many times the car was driven faster than 85 miles per hour, and how many times the engine was started after the "check engine" warning light went on (Burnham, 27). These two examples were indicative of larger societal trends towards the destruction of anonymity that mass urbanization had initially provided (Burnham, 17). Burnham argued that, unless the increased disclosure was met with increased tolerance for

deviance, the result would be a large portion of society becoming alienated and disassociated. Professor Kent Greenwalt, of Columbia University, is quoted as claiming that the increase in computerized surveillance will mean that "Diversity and social vitality is almost certain to suffer, and in the long run independent private thoughts will be reduced" (Burnham, 47).

Burnham's work examined how computerized surveillance affected the personal lives of those being watched. In 1988, sociologist Shoshana Zuboff released the book In the Age of the Smart Machine, in which she attempted to apply Foucault's panoptic ideas to the computerized workplace. However, she noted some differences between the classic architectural panopticon and the information panopticon. Computerized surveillance provides a level of transparency that "would have exceeded Bentham's most outlandish fantasies" (Zuboff, 322). While the panopticon was dependant on the particular designs of physical structures, the electronic panopticon was freed from constraints of time and space. The information gathered was not visual, but abstracted through numbers and codes. Rather than resorting to observing how hard an employee was working, one could simply look at the numbers that were instantly provided through the simple computers used at the time. The observer was not even a key part of the system, as the information would be automatically recorded (Zuboff, 322-333).

To illustrate the concept, Zuboff compared two work sites which used electronic surveillance. In the first site- a telecommunications company called Metro Tel- the information was fed into the system by low-level managers and analyzed by higher-level managers. Since the data input was not built into the system matrix but instead relied on a human interface, it was vulnerable to manipulation. The foremen would let their

passwords become public knowledge, and workers would then have access to their information. The workers could change the data to make themselves look like better workers, which would in turn make the foremen look like better managers (Zuboff, 354). The workers felt in control of their environments, as one foreman told Zuboff: "If we let the computer run us, we look bad, so we manipulate the computer. We are not trying to cheat anybody or steal. We are trying to deal with the human element involved" (Zuboff, 354).

In the second site- a pulp and paper mill called Cedar Bluff- the system was able to input information without any outside support. The computer would automatically measure the speed at which individual workers were producing, and this information would be immediately available to the high-level managers. For example, one machine contained a micro-processor that would record the number of pulp sheets moving along the conveyor (Zuboff, 345). In this site, the workers felt helpless. One machine operator explained: "With this information on the computer, there has been a psychological effect. We know there is something that will tell on us exactly. We can't fudge it now, so we hustle more" (Zuboff, 346).

The surveillance illustrated in Zuboff's two examples is dataveillance, wherein the primary focus of scrutiny is not the subject's body, but the numbers generated by the subject (Gandy: 1993, 71). Knowledge of these numbers replace knowledge of the subject, and Zuboff noted that actual physical surveillance often lessened in a dataveillance environment. One foreman commented: "Now you are basically just dealing with computers... I can't see my men in the field now, because I look though the computer" (Zuboff, 332-333).

Oscar Gandy specializes in dataveillance, but as it affects consumption, rather than production. Instead of examining the dataveillance of a particular company, Gandy analyses the increasing computer surveillance of private life. The collection, organization, and use of this data Gandy refers to as the panoptic sort- `panoptic' because of the pervasive nature of the data, and `sort' because of the way the data is used to separate individuals into specific categories (Gandy:1996, 133). The panoptic sort is not a single physical structure or matrix, although there are networks and communication systems that support it. Instead, it is a complex collection of data-gathering apparatuses involving both hardware and software, rules and routines (Gandy:1996, 137).

As people in the post-industrial Western world manoeuver through modern life, they must interact with a large number of bureaucracies, and in the name of efficiency, these bureaucratic organizations have become increasingly computerized and automated. Therefore, as each person performs interactions and transactions with various agencies, they are leaving behind a trail of computerized information, and taking with them a virtual profile. Examples of the data-producing and gathering devices are credit and ATM cards, tax returns, reservations, applications, and various licences (Gandy:1996, 138-139).

However, this collection is only the first stage of the panoptic sort process. The data collected has no significance in itself; the role of the sort is to transform this collection of data into a consumer silhouette. Demographics can then be developed, comprised of these silhouettes (Gandy:1996, 139-140). The demographics can then be used to enhance marketing tools such as direct mailing lists, or regional advertising.

Marketers can pitch products solely to those people who have already indicated an interest in the area, or those people who fit a specific economic or lifestyle profile (Gandy:1996, 139-141). However, this process of collecting and categorizing information is also a discriminatory act; just as those subjects that conform to the norms of the marketplace are targeted, others are discarded as undesirable grades (Gandy: 1996, 151-152). In addition, the sort is a gating process. For example, in order to belong to a particular class people must first belong to a separate class, or conversely, people who belong to a particular class may be prevented from belonging to another class (Gandy:1993, 74-75). An individual may have to be in a specific income category to receive welfare, or a person who owns a car may be ineligible for a student loan. The panoptic sort is a technology of power, as subjects are identified and classified, and their behaviour predicted according to pre-determined models.

The identification of the subject includes static cards, such as birth certificates, and fluid active cards such as ATM cards and credit cards. The active cards not only provide identification, they also provide surveillance; in order to use most active cards, a personal identification number is required to coalesce the individual and their particular card, thereby limiting unauthorized losses. Transactions are generally completed immediately, generating real-time records of card usage (Gandy:1993, 80-81).

The classification of the subject involves the conflict between self-designation and external designation, and illustrates the significance of labelling. Gandy argues that individuals generally have an interest in naming and categorizing themselves, and that these designations are often in opposition to the designations imposed upon the

subject by external agencies. As an example of this, Gandy offers the ongoing debate over the terms "African American", "black", "Black", and other less printable epithets to classify people of African descent (Gandy: 1993, 82). This example also indicates the power of labels to enframe and exclude.

Because the panoptic sort is intended to reduce risk as it maximizes efficiency, it must be a predictive technology. The identification of the subject allows the classification of groups of subjects, and this classification allows for postulations and generalizations to be made. These, in turn, allow for predictions to be made to calculate risk. Insurance-based techniques of control require immense levels of data, which require intrusive levels of surveillance (Gandy: 1993, 84-85).

To further his theoretical link with Foucauldian panoptic theory, Gandy argues that the panoptic sort is also a laboratory, in which experiments are carried out on an unwitting populace. These experiments are carried out by marketers, to determine the effects of offers and appeals to different segments of the consumer population. However, these experiments are not performed to increase the body of knowledge of the social sciences, they are simply tools used to maximize investments in advertising and public relations (Gandy: 1993, 68-69). The small experiment carried out in Pittsfield that Burnham documented is one small example of this technique.

In opposition to the panoptic sort, Gandy positions questions of rights and privacy. In particular, Gandy discusses the ability of the subject to "opt-out", to remove their silhouettes from the databases of the marketing organizations. However, he refers to poll results that suggest that there is some ambivalence on the part of consumers as to whether or not they would want to be removed from the databases: 38 percent of

people polled responded that they would not be upset at all to receive personalized direct mailings, and only 22 percent of people polled said that they would like to be removed from the databases (Gandy: 1996, 147). In part, this is due to the use of reward systems built into many machines of the panoptic sort, such as coupons, frequent-user points, and special offers (Gandy: 1993, 70). This seems to be in opposition to Orwellian notions of Big Brother, as individuals are to a degree willing participants in their role as surveillance subjects.

To Mark Poster, the culmination of these databases results in the creation of a "superpanopticon" – in which the subject is unaware of the tremendous amount of surveillance being directed at him or her, and yet enables that surveillance through his or her actions with communications technologies. The subject becomes the focus of the surveillance, as well as the tool of surveillance (Zwick *et al*, 6).

Contemporary surveillance is not limited to the collection and organization of numbers; closed circuit television (CCTV) cameras are fixtures in the modern landscape. Although they did not figure in Foucault's works, theorists such as Mike Davis (1992) and David Lyon (1994) have applied panoptic theory to the operation of video-surveillance (Koskela, 243).

There is an important transformation that is brought about through the use of video technology in surveillance; instead of collecting data concerning the transcribed movements of the subject through bureaucracies and in accordance with workplace standards, CCTV observes and records the visual motions and physical attributes of objects as they move through space/time. Cameras are found not only in high security areas such as prisons and law enforcement offices, but also to a large degree in semi-

public areas such as malls, parks, schools, and mass transit depots (Koskela, 245). The purpose of the camera depends on the area in which it is situated- in parks and schools, the role of the camera is to record the actions of people breaking laws or rules for future prosecution, for example, while in the mall the camera helps security spot, and exclude, "undesirables" (Koskela, 245). A single mall security officer may monitor dozens of video screens, looking for people who are not consuming properly. People who are identified in this way will be removed from the mall; while deviants are enclosed within prison walls, they are enclosed outside of the walls of the shopping mall (Koskela, 246). Without CCTV, there would simply be too many subjects to observe.

The video-camera effectively eliminates the role of physical architecture in surveillance. Bentham's meticulous panoptic plans are no longer necessary, as the camera negates or reduces the problems of line-of-sight and distance between the observer and the object. Any building or structure can become a panopticon with a few well-placed camera pods. While the cameras are generally placed above the area to be surveilled, the people "behind" the camera could be above, below, beside, or kilometres away from the area (Koskela, 249).

The panoptic principle of the visible but unverifiable observer can be seen in the operation of CCTV. In most areas, the cameras are generally housed in specialized boxes or simply hang down from the roof. Even if this alone did not ensure that the object would be aware of the cameras, there are almost always signs that warn/boast about the presence of the cameras, often hanging beside signs that explain the consequences of disobeying. However, there is no way for the object to know whether

or not there is someone behind the camera (Koskela, 252-253). Bentham's dark spot in the lantern is no longer needed, as the camera is purely a one-way device. In certain areas, such as convenience stores, the camera is accompanied by a monitor that reveals the gaze of the camera lens; objects may watch themselves being watched by the camera. Even in these cases, it is impossible for the object to know who else is observing it.

In March of 1991, four Los Angeles police officers were placed under the gaze of a video camera as they beat an unarmed man. The footage was promulgated by the media, and the resulting outcry eventually culminated in the conviction of several police officers (Staples, 51). In this case, video surveillance was used as a tool of resistance, not as social control machinery. Largely because of the incident, police cars were outfitted with video cameras, to monitor both sides of the police/felon relationship (Staples, 52).

William Staples argues that this example illustrates how the "Big Brother" discourse that dominates the field of surveillance is not adequate or useful. There is not a simple one-way paternalistic relationship involving the state observing the people; instead, Staples claims that North America is a "culture of voyeurs" (Staples, 57). Examples of this phenomenon are very easy to come by; Staples offers the case in which a group of teenagers drove around committing assault and vandalism while video-taping their own actions to enjoy later (Staples, 58). Other day-to-day examples can be seen in the common use of MSN's Messenger Service (tm) whereby a user of the service can know when other users of the service have logged in, various web sites that include hidden camera or voluntary footage (Staples, 59), or the uncountable

number of reality-based television shows that fill network television schedules at the dawn of the Twenty-first century.

Surveillance permeates almost all aspects of modern society, but there is no central figure or tower from which the gaze is fixed upon a supine, segmented populace. Studies of historical and contemporary prisons indicate that Foucault's panoptic theory does not adequately describe the institutions that were the foundation of his societal claims; Foucault's argument that many institutions are panoptic like prisons are is weakened by the evidence that shows that prisons are not panoptic (Alford, 128-131). While there is no doubt that technology has advanced the capabilities of surveillance, the dominant Orwellian "Big Brother" discourse limits the understanding of the role of agency in the observer/observed relationship. Surveillance is not simply used by a small elite and wielded over an impotent mass. Instead, surveillance is voluntary in some situations, involuntary in others, and unknown in others. The eye behind the camcorder lens is as likely to belong to a neighbour, family member, boss, or unknown voyeur as it is to belong to an agent of a social control organization (Staples, 131-132). As well, some theorists have argued that the distances between the surveillance apparatuses and the watched object have collapsed:

> Well beyond Oceanic surveillance devices, we inhabit an obscene world of total transparency. The walls are down, the telescreens superseded. There are no more secret places, no torture chambers of Power, Party, State – and there is no place left to hide. There are only the terminals, and *we are* the terminals. . . (Morris, 96-97)

Improving technology allows levels of surveillance that would have been unthinkable when Bentham planned his panopticon, but these technologies have not been forced

upon unwilling subjects. Instead, people have embraced the devices that render them transparent, such as credit cards, the internet, cellular phones, and the unblinking eye of the video camera. In order to take into account these discrepancies, and to expand the surveillance discourse, theorists such as Roy Boyne (2000) and William Bogard (1996) have attempted to ally concepts of surveillance with simulation, hyperreal, and seduction theories.

Simulation and Hyperreality

Simulation theory concerns the transformation of the actual to the virtual as a social process. The ideas are practically synonymous with French philosopher Jean Baudrillard, who has been the driving force behind the development of the concepts. Sociologically, simulation is both a tool used to categorize the historical stage of a particular society, and a description of the relations between the sign and the real.

Baudrillard offers, "out of some obscure need to classify", four stages of value in society (Baudrillard: 1996, 5). These four stages are defined by the corresponding dominant stage of the image. In the first stage, value is based on natural practicality. Items are assessed according their functional capacity; the image reflects reality. This is the realm of portrayal and reflection. In the second stage items become commodities, and are appraised according to the level of abstracted, universal currency they could command. The reflection of the image is warped or skewed, like a carnival mirror. Reality is still represented, but no longer accurately. In the third stage items are not gauged for what they do or how much they are worth, but for what they represent in the universe of signifiers. The image disguises the absence of basic reality. Finally, in the fourth stage- the viral, fractal stage- value pervades everywhere without reference

to either natural or artificial codes. The image has no relations with reality at all, and "it is its own pure simulacrum"(Baudrillard: 1994, 6). Value is everywhere, but ceases to mean anything:

> Indeed, we should really no longer speak of `value' at all, for this kind of propagation or chain reaction makes all valuation impossible. Once again we are put in mind of microphysics: it is as impossible to make estimations between beautiful and ugly, true and false, or good and evil, as it is simultaneously to calculate a particle's speed and position. (Baudrillard: 1996, 5-6).

The viral stage is brought about by the proliferation of simulation, and the triumph of the virtual image over the actual subject. The third and fourth stages are the orders that Baudrillard is most interested in, as these are the stages which, he argues, dominate modern Western life.

The most important text concerning the dominion of the virtual image is Baudrillard's 1981 work Simulacra and Simulation. In this book, Baudrillard outlines the successive stages of the image from representative to self-referential, and describes the degree to which Western society has spiralled into a maelstrom of simulation and hyperreality.

In order to produce a definition of simulation, a key distinction is made between the act of simulating and the act of pretending or faking. When someone fakes an illness, it is a theatrical performance that attempts to convince observers of its verity. However, this performance, by its very falsehood, reinforces the reality of the actual illness. In order to simulate an illness, the subject would have to produce the physical symptoms of the disease, without relying on the physical cause of the disease. In this situation, reality is in danger; when there is no difference between the simulation and the actual event, the veracity of the actual event is thrown into question (Baudrillard:

1994, 3).

As an historical example of the destructive capabilities of the image, Baudrillard offers the dangers that physical icons pose to notions of God. The iconoclasts did not forbid representations of God because they would be unfaithful or incorrect, but because they would be too faithful and correct. The icons would become the focus of belief, and rather than strengthening belief in God through physical representation, the icons would call into question the existence of God:

> If they could have believed that these images only obfuscated or masked the Platonic Idea of God, there would have been no reason to destroy them. One can live with the idea of distorted truth. But their metaphysical despair came from the idea that the image didn't conceal anything at all, and that these images were in essence not images, such as an original model would have made them, but perfect simulacra, forever radiant with their own fascination. (Baudrillard: 1994, 5)

This example provides the distinction between simulation and representation. While a representation can be true or false, accurate or inaccurate, the simulation destroys the distinction between these ideas by questioning the truth of reality (Baudrillard: 1994, 6).

The main conduits for the channelling of simulation are the electronic media. Marshall McLuhan wrote of the implosion of space/time that telecommunications created; he claimed that it was as if "after more than a century of electric technology, we have extended our central nervous system itself in a global embrace, abolishing both time and space as far as our planet is concerned." (McLuhan, 19). McLuhan felt that the modern subject existed in a Global Village, in which one could feel kinship or empathy for someone regardless of physical location. Baudrillard uses similar terminology to describe the influence of communication technology, but argues that meaning is lost and through instantaneous transmission; indifference, rather than

empathy, is the effect (Genosko, 94-95). McLuhan's optimism regarding the emancipatory nature of technology is based on "McLuhan's total misrecognition of history, and more precisely the social history of the media" (Baudrillard: 2001, 41). The broadcasting of an event in real time does not bring the viewer closer to the event, it simply renders the event incomprehensible: "No human language can withstand the speed of light. No event can withstand being beamed across the whole planet. No history can withstand the centrifugation of facts or their being short-circuited in real time..." (Baudrillard: 1992, 2). The end result of the telematic society is a wealth of information, but a dearth of meaning (Baudrillard: 1994, 79).

Baudrillard gave two main reasons for this state of affairs. Firstly, communication is not described or represented through the media, it is staged. There is an artificial reciprocity to the content of the broadcast event, through call-in shows, the instant/pre-taped interview, and immediate feedback in the form of ratings and market share. By introducing the viewer into the life cycle of the event, the context of the event is destroyed (Baudrillard: 1994, 80-81). Secondly, since as McLuhan stated the medium is the message, the meaning of the message is devoured by the medium. However, rather than being digested and circulated through the social, meaning immediately proceeds to the elimination stage (Baudrillard: 1994, 81-83). All media events are circular and interchangeable.

Just as McLuhan wrote of the implosions of space/time and medium/message created by the media, Baudrillard argues that "there is, in the same movement, the implosion of the medium itself into the real, the implosion *of the medium and of the real* in a sort of hyperreal nebula, in which even the definition and distinct action of the

medium can no longer be determined." (Baudrillard: 1994, 82). The media seize meaning, neutralize it, and distribute the vacuous remains instantly throughout the world. At the same time, it becomes more and more difficult to separate the actual from the virtual.

Because human memory is frequently faulty and inherently organic, it is far simpler to store the event as a visual document or restage the event for the purposes of entertainment (Baudrillard: 1994, 49-50). However, this process is a destructive act, rather than an act of preservation:

> ...one attempts to rekindle a *cold* historical event, tragic but cold, the first major event of cold systems, of cooling systems, of systems of deterrence and extermination that will then be deployed in other forms... and in regard to cold masses... to rekindle this cold event through a cold medium, television, and for the masses who are themselves cold, who will only have the opportunity for a tactile thrill as well, which will make them spill into forgetting with a kind of good aesthetic conscience of the catastrophe. (Baudrillard: 1994, 50)

The representation of historical events in the media renders the original event less comprehensible. As well, the falsehood of the portrayal taints the authenticity of the original. As an extreme but vital example, Baudrillard argues that the constant presentation of the Nazi holocaust in the media has made it possible for holocaust deniers to pose their intolerable questions: "what makes it possible is the media's way of replacing any event... with any other, with the result that the more we scrutinize the facts...the greater is the tendency for them to cease to exist, and to cease to *have existed*." (Baudrillard: 1996, 91-92). The representation is more vibrant and alive than the event, and takes the place of the event, but it can be neither true nor false. There are far more people currently alive who have experienced the film "Schindler's List" than who have lived through the actual holocaust, but this staged event does not serve to

revitalize the holocaust. Instead, the more realistic the virtual event, the less real the actual event seems.

It is not only historical or current events that are forcibly transcended into the realm of image. There is a central figure that casts a shadow over the subject in the age of simulation – the double:

> Of all the prostheses that punctuate the history of the body, the double is doubtless the most ancient. The double, however, is not properly speaking a prosthesis at all. Rather, it is an imaginary figure, like the soul, the shadow or the mirror-image, which haunts the subject as his 'other', causing him to be himself while at the same time never seeming like himself. The double haunts the subject like a subtle death, but a death forever being conjured away. . . the double's imaginary power and resonance. . . depends on its lack of material being, upon the fact that the double is and remains a fantasy. (Baudrillard: 1996, 113)

Historically, the double is an ominous figure, and one which represents the destruction of the subject. However, except in the case of twins, the double has always been a fictitious entity – featured in stories such as Edgar Allen Poe's 1839 short work "William Wilson", and Oscar Wilde's 1890 novel *The Picture of Dorian Grey* (Genosko: 1998, 37). Modern technology has made the double a physical possibility, through cloning (Baudrillard: 1994, 95). As well, the virtual reproduction of the subject has become routine, due to the proliferation of video cameras: "There is always a camera hidden somewhere... we may be filmed without knowing it... we are constantly moving around the world as in a synthesized image." This is one of the symptoms of the transformation of everyday life into virtual reality (Baudrillard: 1995, 97). The subject is not only interacting with a virtual world, the subject him or herself has also become virtual to a degree: "all this digital, numerical and electronic equipment is only the

epiphenomenon of the virtualization of human beings in their core" (Baudrillard: 1995, 98). The subject's virtual double is created in real time, but can be manipulated through the use of fast-forward, rewind, pause, and slow-motion. However, the double does not passively mimic the movements of the subject; in some cases the double becomes the subject, and the actual subject is existing only to provide the image with a model. When a couple makes love in front of a camera, it is to allow their virtual images to become the subjects (Baudrillard: 1995, 98).

The virtual ghosts created by Gandy's panoptic sort are also doubles, but a more insidious kind. While they mimic the actions, beliefs, and movements of the original, they are re-created out of proportion, as those characteristics which are helpful to producing capital are emphasized, while other characteristics are left out as redundant or unnecessary. These data doubles are no longer recognizable, even to the subjects that they are attached to. As the information becomes more abstract – moving from visual image to numerical information – the double becomes less knowable by the original, and becomes more susceptible to manipulation.

In 1971, a hyperreal family (Californian residence, three garages, five children, upper-middle-class, etc) had their day-to-day lives filmed and televised for seven months. Despite the producer's assurances that the Loud family behaved as if they weren't surrounded by crews and cameras, some debate arose regarding the impact of the cameras after Mr. and Mrs. Loud separated (Baudrillard: 1994, 27-28). However, even before the family self-destructed, it had been annihilated from the realm of the real, and propelled into hyperreality: "In the "verite" experience it is not a question of secrecy. . . but a sort of frisson of the real. . . a frisson of simultaneous distancing and

magnification, of distortion of scale, of an excessive transparency" (Baudrillard: 1994, 28). While something did happen, it was not the reality of an actual family breaking up. The Louds had become character actors in a simulated household set.

The cameras did not simply record and reflect the truth of the Loud family; instead, they illustrated a new kind of truth:

> Truth is no longer the reflexive truth of the mirror, nor the perspectival truth of the panoptic system and of the gaze, but the manipulative truth of the test that sounds out and interrogates, of the laser that touches and pierces, of computer cards that retain your preferred sequences, of the genetic code that controls your combinations, of cells that inform your sensory universe. It is to this truth that the Loud family was subjugated by the medium of TV, and in this sense it amounts to a death sentence. . . (Baudrillard: 1994, 29)

The Louds were not the focus of the gaze. They remained unobserved, while their images were the objects that were isolated within the illuminated cell of the television screen.

Simulation concerns processes, as well as images. With the advent of the computer, modern processes are often mediated through or produced entirely by the microchip and the monitor:

> Immobile in front of his computer, Virtual Man makes love via the screen and gives lessons by means of the conference... Just as eyeglasses and contact lenses will arguably evolve into implanted prostheses for a species that has lost its sight, it is similarly to be feared that artificial intelligence and the hardware that supports it will become a mental prosthesis for a species without the capacity for thought. (Baudrillard: 1996, 52)

While the simulated process – for example, the video game – gives the appearance of freedom to its user, this appearance is an illusion. The outcome of any simulation is limited by its matrix, and so the user must behave in a way that corresponds with the binary possibilities presented by the computer in order to facilitate the desired result –

to use the same example, the winning of the video game. However, even this phantom triumph is simply the end result of a successful interaction between the human and the machine; it is the human that must yield to the machine, not the other way around (Baudrillard: 1996, 56-57).

Actual processes involve movement, growth, decay, rust, putrefaction, and death. The virtual process exists solely in the realm of information, and involves none of these corporeal limitations:

> ...hence these objects from which wear-and-tear, death or aging have been eradicated by technology. The compact disk. It doesn't wear out, even if you use it. Terrifying, this. It's as though you never used it. It's as if you didn't exist. If objects no longer grow old when you touch them, you must be dead. (Baudrillard: 1992, 101)

When a vinyl record is played, it is changed. The needle rubs on the grooves, affecting both the record and the needle. When a cassette tape is played, the tape is stretched, and the sound is altered. A compact disk may be scratched or broken, but the information contained on the broken pieces of disk will remain. Conversely, the information on a compact disk may be erased without doing any physical damage to the disk. While actual processes must suffer the indignities of physical substance, virtual processes only exist by dint of their information. Words on a page must be torn, shredded, or burnt to be destroyed. Words on a screen may be wiped out from existence – from ever have existing – with a purposeful or accidental strike of a key (Baudrillard: 1995, 103). As a result of these dissimilarities, there is a marked difference between the interaction between the subject and the actual, and the subject and the virtual:

Regarding a screenful of information is quite a different thing from *looking*... The

> whole paradigm of the sensory has changed. The tactility here is not the organic sense of touch: it implies merely an epidermal contiguity of eye and image, the collapse of the aesthetic distance involved in looking... That we fall so easily into the screen's coma of the imagination is due to the fact that the screen presents a perpetual void that we are invited to fill. (Baudrillard: 1996, 55)

There is a temporal quality to physical processes that is absent from the virtual reproduction. One need only examine the difference between reading the morning news printed with ink and paper and reading the instantly updated, real time news over the internet on one's personal computer. Baudrillard argues that, by surrounding ourselves with these virtual processes, we become like the "Boy in the Bubble"; we are isolated from infection by the outside world (Baudrillard: 1996, 60-62). Writing of the experimental simulated environment of the Biosphere 2 project, Baudrillard argues:

> ...nature is also germs, viruses, chaos, bacteria and scorpions, significantly eliminated from Biosphere 2 as though they were not meant to exist. Where are the deadly little scorpions, so beautiful and so translucent, which one sees in the Desert Museum not far away, scorpions whose magical sting certainly performs a higher, invisible – but necessary – function within our Biosphere 1... of the venomous evil of chance? (Baudrillard: 1992, 81-82)

However, it is in these hyperprotected spaces where "mysterious, anomalous viral diseases make their appearance. The fact is that viruses proliferate as soon as they find a free space" (Baudrillard: 1996, 62).

Virtuality is not only the domain of the small isolated process; Baudrillard argues that many of the forces which shape modern life are also simulations. One counter-intuitive example is the economy, which Baudrillard argues has disintegrated as a real phenomenon as it has gained vitality as a virtual process, dominated by computer models, absurd figures, and a permeation of information (Baudrillard: 1996, 26-29). There were significant differences between the stock market crash of 1929 and the

crash of 1987. While the 1929 crash was undoubtably a catastrophe that shaped the following decade, the billions of dollars that were lost in the 1987 crash had no clear production referent – no equivalent in real terms. The funds were not truly lost, because they never existed in the first place (Baudrillard: 1996, 28). The series of disasters that Karl Marx predicted would destroy capitalism have not occurred; Marx failed to predict that the economy would cease to be tied to the plane of worldly existence. Baudrillard refers to the simulated macro-process as "orbital", meaning that the process has become completely self-referential, and is no longer influenced by mundane temporal matters (Baudrillard: 1996, 27). As another example of this, Baudrillard offers the case of international debt. The billions of dollars that nations owe each other no longer have any meaning, but they exert a force on the world economy like the force of the orbital moon on the ocean. It is this orbital nature that makes it possible for the wealthy nations to conceive of forgiving the debts of the Third World nations, since it would be less a case of allowing the nations to keep the money, and more of an admission that the money no longer actually exists, anyway. Were the wealthy nations to call in the debts, there would be a true crisis of reality that would only serve to expose the absurdity of the orbital global economy (Baudrillard: 1996, 27-28).

As reality suffers annihilation – through being replaced by the virtual and the artificial – hyperreality fills the void. The hyperreal is the product of and the model for the rewriting of the world through simulation. It is a term used to describe the experience of existing in a world reigned by spectacles, images, orbital process, and self-referential signs; it describes a world where appearance and reality have imploded. Hyperreality is more real than the real (Kellner, 7-8).

When reality is destroyed or exposed as an illusion, and hyperreality dominates the masses, a cultural vacuum is created which is soon filled by the nostalgic necessity to reproduce the signs of the real, through politics, social science, advertising, and entertainment. Disneyland (tm) exists as a third order simulation; while it appears to establish the reality of America by presenting the antithesis of the real (fantasy rides, cartoon characters, illusions, special effects) it disguises the possibility that the landscape outside of its borders is just as simulated (Baudrillard: 1994, 12-13). Baudrillard claims that many modern events are examples of this process- the Watergate Hotel scandal was less about the outrage of politicians abusing their power, and more about the attempt to establish that there *could* be a scandal; that politics and power are real instead of simulacra, whose very illusion of existence is a greater scandal than any unauthorized taping or break and enter could ever be (Baudrillard: 1994, 14-16).

Resistance is difficult to locate in a hyperreal system. Resistance requires power to resist against, and Baudrillard argues that power and politics have become simulacra; only the signs of power and the staging of politics remain (Baudrillard: 1994, 152-153). Terrorism is enveloped by the media, and drained of its context and meaning (Baudrillard: 1996, 78-80). Even nihilism ceases to mean anything, as the hyperreal system"..is itself nihilistic, in the sense that it has the power to pour everything, including what denies it, into indifference" (Baudrillard: 1994, 163). Classical critical theories, which depend on the actual world, no longer are able to describe the social – hence, the failure of Marxism. Despite this, Baudrillard argues against inaction:

...the whole logical universe of the political is dissolved at the same time, ceding

> its place to a transfinite universe of simulation, where from the beginning no one is represented nor representative of anything any more... where even the axiological, directive, and salvageable phantasm of power has disappeared... Yet it is there that we must fight, if even fighting has any meaning any more. We are simulators, we are simulacra... (Baudrillard: 1994, 152)

However, Baudrillard does not offer a code of behaviour, or a solution to the increasingly bleak portrait he paints (Dalaruelle *et al*, 23). Instead, he describes a system that destroys resistance by absorbing it like an amoeba into its own body, where it is transformed into simulation. This has led many theorists to question the value and validity of Baudrillard's concepts.

One of Baudrillard's main critics is Douglas Kellner, who argues that Baudrillard's theories are based on "some shaky theoretical premises" (Kellner, 9). Kellner agrees that simulation dominates the contemporary Western social landscape, and that this has made it difficult to locate the real. However, Kellner argues that conventional critical theories – particularly Marxism – should not be abandoned, and that the role of production as a social force is still a vital sociological debate. New technical developments may be incorporated into macro-theories (Kellner, 10-11). Kellner questions the utility of Baudrillard's ideas, and does not see the need to distinguish an "absolute break" between modernism and postmodernism. Instead, Kellner argues we may be at a transitory period, and that there are many continuities between the two stages of society (Kellner, 12). It is not Baudrillard's observations that Kellner criticizes, but the strength of his conclusions.

Theorist Christopher Norris also takes Baudrillard to task for "his tendency to extrapolate far-reaching conclusions from limited evidence, and his habit of ignoring any hopeful signs that might complicate the otherwise dire prognosis for civilisation and its

discontents" (Norris, 165). As well, Norris argues that if Baudrillard is correct, and there can be no understanding of truth, then Baudrillard has become hoist on his own petard; his own theories must be as false as the theories he criticises (Norris, 184). As far as simulation goes, Norris argues that, while "it is hard to argue with Baudrillard's contention that ours is an age of postmodern `hyperreality', there does not need to be a distinction between simulated reality and actual reality, since. . . reality just *is* (to the best of our knowledge) the world which we thus inhabit" (Norris, 171, 177). Despite admitting that Baudrillard's assessment of the virtuality of modern experience seems accurate, Norris claims "I think we would do well to forget Baudrillard" (Norris, 164). It appears, however, that Norris' dislike of Baudrillard is fuelled less by the idea that his concepts are specious, and more by the slippery slope that his theories send the reader down: "it leaves us bereft of argumentative grounds upon which to challenge the current, massively distorted consensus-view" (Norris, 178). It is not the description that Norris takes issue with, but the nihilistic consequences that result.

While some academics have disagreed with Baudrillard's broader societal conclusions, few disagree with his assertion that simulation plays a key role in modern life. Despite this, as of 1996 there was very little discourse concerning the relations between simulation and surveillance. Theorists such as David Lyon, Gary Marx, Stanley Cohen, and Shoshana Zuboff have examined the role of computer technology in surveillance, but without examining the theoretical implications "in an explicit way to simulation" (Bogard: 9).

Simveillance

Considering the panoptic origins of modern surveillance discourse, it is surprising

that simulation has not played a larger theoretical role. In his works on the panopticon, Bentham noted the importance of appearance and spectacle over reality. The theatrical masks that the prisoners would wear when seen by the public, and the grave organ music that would be played when prisoners first entered the panopticon indicate that Bentham understood the power of the image (Bozovic: 5-7). The "dark spot" in the window that would replace the actual presence of a warden could be considered a third order simulation according to Baudrillard's hierarchy – it would disguise the absence of a basic reality. As well, Bentham argued that "fictions" – such as devils, ghosts, imps, or the power of law – could have real effects on the temporal world (Ogden: xi-xviii).

The first work to explicitly deal with the relations between simulation and surveillance is William Bogard's 1996 book The Simulation of Surveillance: Hypercontrol in Telematic Societies. In this text, Bogard examines how simulation enhances surveillance, confounds surveillance, and replaces surveillance.

One of the main functions of surveillance machineries is to render the subject transparent – in order to see "what is on the *other side* of the surface" (Bogard: 34). Simulation technologies accomplish this by effectively destroying the surface: "With surveillance technology, the operator's gaze passes through a surface; in simulation, the gaze itself is deployed along a vanishing surface, where it becomes a *surrogate* gaze" (Bogard: 35). Simulated surveillance (or simveillance) devices do not allow the observer to actually see the subject. Instead, hyperreal worlds are created that correspond to the real world. These hyperreal worlds become the focus of examination: "at its highest level, simulation is not about the problem of reality versus appearances anymore, but about the coincidence of actual and virtual worlds" (Bogard:

35). A straightforward example of this is the use of CCTV. In a typical CCTV environment, the gaze of the observer is no longer trained upon the subject. Instead, the camera lens is aimed at the subject, while the observer watches the television screen. A virtual world is created on the monitors that corresponds to the actual world. However, because it is a simulated environment, the images in the monitors are far more malleable than their actual equivalents. The virtual image may be frozen in place, zoomed in upon, fast-forwarded, rewound, or played in slow motion: "The controls on your video cassette player are really time-travel controls" (Bogard: 52) . In addition, the image is trapped in the medium (analog or digital) until it is allowed to cease existing. Conversely, the observer does not exist at all to the subject: "This makes it very difficult to ask for help through the agency of the camera – the camera *leaves its object entirely as an object*: passive, without any ability to influence the situation" (Koskela: 249).

The rise of computer simulation profiling and modelling technology has resulted in the implosion of space/time. It is no longer completely accurate to say that the distance between the observer and the observed, or between the event and its scrutiny has been lessened, or even reduced to zero. Profiling refers to the construction of simulated identities that can then be compared to actual identities, in order to predict the potential actions of the real subjects. These simulations are used to replace actual knowledge and observed behaviour of the subject. It is a sorting device, as it categorizes the individual according to race, class, age, sex, living situation, location, spending habits, etcetera (Bogard: 27). This tool is used to predict the physical manifestation of disease and disorders, as well as habits, routines, and criminal tendencies. Profiling can be understood "not just as a technology of surveillance, but

as a kind of *surveillance in advance of surveillance*, a technology of `observation before the fact'" (Bogard: 27). These simulated identities are not simply accurate or inaccurate when they are applied to individuals:

> The profile neither fails nor succeeds. . . rather, however it's drawn, it *guarantees or serves up* an offender for surveillance. Such high-order surveillance technologies speed the sorting and analysis of information. . . They are, in effect, a form of identification prior to identification. . . (Bogard: 28).

The offence committed by the subject is his or her similarity to the simulated profile; since the profile *will have been* guilty of the offence. Like Gandy's panoptic sort, the profile is a predictive technology. However, the panoptic sort categorizes people by their actions, while profiling categorizes people according to their resemblance to a simulation. Once certain coincidental attributes have been observed (for example, the subject is driving a certain kind of car down a certain road while belonging to a certain ethnic group), the simulation is superimposed on the subject, and the missing pieces of information are filled in (the subject is probably dealing drugs) (Bogard: 27). In some cases, computers are used to automatically compare subjects to virtual profiles, bypassing the need for visual observation (Bogard: 54).

Computer modelling takes the same concept of predictive simulation, and applies it to events, rather than individuals. By using models, generals may fight entire virtual battles ahead of time, in order to ascertain the outcome. It is no longer necessary to wait until a battle is over to weigh one's losses and gains; instead, the post-battle surveillance will have been done hundreds of times before the first shot has been fired (Bogard: 81-84). Modelling, like profiling, is a predictive technology whereby a virtual, hyperreal world is created, and this hyperreal world then becomes the focus of

surveillance. However, unlike the virtual worlds created by the lens of the camera, the profile and the model are coincidental to the real but in an anticipatory fashion. An ideal model will describe not the way in which an event is happening, or will happen, but the way in which an event will have happened. After the model is developed and perfected, all that is needed is to wait for the real event to imitate what has already taken place in the virtual world; the outcome is no longer in doubt. With profiling and modelling, surveillance is not instantaneous – instead, it precedes the actual event.

Simveillance technologies also serve to sterilize the subject and the subject's environment. Just as the compact disk eliminates noise by transforming organic sounds into pure information, simveillance digitally transforms the subject into a clean representation (Bogard: 40-41). There is no danger of infection or contamination of any kind, nor is there the possibility of odour, or physical contact. The digital apparition will only age if programmed to do so: "sterility *can* mean the simulation of decay. . . because simulation, after all, like surveillance, aims for the real, and *that can be anything*, even what corrupts it" (Bogard: 41). Even when this is done, it can just as easily be undone; there is only simulated deterioration and atrophy in hyperreality. Decay is an effect of the ravages of time, and as noted earlier, time is destroyed by simulation.

While many authors have commented on the role of human/machine interaction in surveillance, Bogard takes this a step further by examining the figure of the cyborg. In 1988, Zuboff wrote about the surveillance difference that was apparent between computerized workplaces and non-computerized workplaces. However, there was still a separation of human and machine – the workers were merely using the technology.

The concept of the cyborg – "The melding of the organic and the mechanic, or the engineering of a union between separate organic systems" (Gray *et al*: 3) – allows a greater understanding of the unique way in which simulation enhances surveillance.

For the greater part of the twentieth century, the cyborg has been regulated to the world of fiction, where it has often been used as a metaphor for the effects of technology or mechanization on the human being (Gray *et al*:5). Theorist Donna Haraway introduced the cyborg to the world of critical sociology in her 1985 essay "A Manifesto for Cyborgs"; since then, the concept has become popular among critical social theorists (Gray *et al*: 7).

Focussing on the workplace, Bogard examines how the proliferation of cyborg labour intensifies the capabilities of surveillance. Firstly, cyborg labour destroys the idea of the particular workspace:

> . . .cyborg work spans all levels and sectors of the postindustrial economy and obeys no class distinctions or hierarchical divisions between manual and mental labour; blue-collar or white-collar occupations; staff or line. . . Any kind of labour, i.e., potentially can be simulated, can be mediated by some form of biotelematic, simulation apparatus. . . this is also. . . what increasingly causes contemporary work to shade off into areas that formerly were considered to be exterior or separate from work. . . as computerization and communication technologies transform the office or factory into an any-space- or any-time-whatever. . . (Bogard: 105-106)

The modern business person – complete with cellular phone, pager, portable computer, etcetera – is never truly away from the office, as their physical office has been replaced and superseded by a virtual telecommunications system; the cyborg is its own office. Formally unproductive times, such as travel, remain productive when the cyborg worker is able to stay plugged in. At the same time, actual travel becomes less necessary as it is replaced by virtual meetings, teleconferencing, and instant images. In a mid-1990's

televison commercial for IBM, a formally human worker is told there is no longer a need for expensive trips, as his transformation into a cyborg means that his job can now be done over the internet without him leaving his office. Virtual movement replaces actual movement, and the cyborg worker becomes a stationary figure, moving through simulated spaces and interacting with other cyborg entities.

Secondly, the cyborg creates its own surveillance by virtue of its dependence on information technology. It is no longer necessary to record the actions of workers; the cyborg worker creates its own real-time documentation through its very operation:

> Filing an order, confirming a reservation, programming a task: any work accomplished via data entry leaves a trail, automatically. More, any work whose tasks can themselves be broken down and transformed into functions of coded instructions is surveilled even before it begins. (Bogard: 114)

Production and observation are no longer separate forces in the cyborgian world; often, producing the observable information is the sole function of the cyborg worker:

> Information is what cyborgs "produce," and produce to excess. . . it collapses the gap between production and control, between labour and the management of labour. . . the whole process is self-regulated and self-organizing. . . (Bogard, 109-110)

It is not necessary to observe the actions of a telemarketer in a computerized call centre, for example, because the data that he or she produces through his or her relations with the computer will divulge all the pertinent performance information. The data is what is produced by the cyborg, and what is monitored by the cyborg's supervisors.

In cases such as this, the distinction between simulation and surveillance is destroyed. It is no longer a matter of simulation enhancing surveillance through the destruction of temporality and location; instead, the simulated labour of the cyborg *is*

surveillance:

> In one sense, it is useless to separate surveillance (scanning) and simulation (sorting, recording, playback) technologies in relation to cyborg work, because in the imaginary the two operations are so tightly integrated. We always find one with the other as interrelated elements of a general functionality – the surveillance apparatus supplies information, the simulation provides the screen on which that information is displayed. . . (Bogard: 119)

Real-world observations become unnecessary and underproductive, compared to the hypertransparency provided by the cyborg interface. Extraneous data are eliminated, while the key significant data are highlighted, duplicated, circulated, and manipulated. It is insufficient to merely state that the cyborg worker is easier to observe; instead, one may state simply that the cyborg worker *is* observed.

While simulation has become a powerful ally of surveillance, it has a longer history as the adversary of surveillance. In works written during the Fifth century BC, Sun Tzu illustrated the importance of providing false information to confound attempts at surveillance by one's enemies (Bogard: 88). Surveillance serves to unmask appearances, while simulation can mask, pervert, disguise, hide, and distract. This can be done on a vast scale – building a simulated town over a World War II fighter plane factory – or on an insignificant scale – a student feigns interest in a lecture, even going to the lengths of scribbling in a notebook to simulate note-taking. In particular, Bogard writes of simulation countering workplace surveillance:

> Working people, in fact, have always known how to reverse the poles of the control of labour using simulation. In France, they call this *la perruque*, "the wig", all those ingenious ways workers have devised to trick their employers or supervisors into thinking they are working, or that make their work less burdensome. (Bogard: 110)

Modern day examples of *la perruque* include reading personal email, looking at internet

pornography or browsing online book stores, making phone calls, or in the case of the student, simply removing one's brain from performing the required task while allowing one's body to pantomime the correct behaviour. While the simulated cyborg worker has temporality stolen from it, the simulator of *la perruque* steals time back for his or her own use. However, there is an important difference between the wig and simple slacking. Slacking involves an attempt to hide oneself from surveillance, so that one may cease work completely, or go at a slow pace. *La perruque* is performed in full view of supervisors, and does not represent a less strenuous alternative to work: "The wig demands an equivalent, and perhaps even greater, investment of energy on the part of the worker (as a kind of supplement to his or her labour, that `accompanies' production)" (Bogard: 111). Rather than hiding *from* surveillance, wig performers hide *within* surveillance, by simulating the image of the productive worker.

While these simplistic forms of resistance operate at the actual visual level, and are therefore ineffective against the hyperreal tyranny of simveillance, Bogard argues that a form of anti-cyborg *perruque* is possible:

> Rather than turning the tables on the surveillance-disciplinary apparatus by means of a reverse strategy of managing visibility (presence in space and time) the hypersurveillance-simulation apparatus is subverted by a strategic art of simulated visibilities and flows in simulated time and space. . . Telematic machinery, that is, must be operated creatively, in ways that subvert its operations from the inside while appearing to conform to them. (Bogard: 123)

Anti-simveillance resistance requires the subject to change the matrix of the system, thereby introducing a virus of mis-information through: "hacking and viral strategies, recordings, doublings, the staging of simulated readouts, electronic decoys" (Bogard: 123). In essence, rather than disguising his or her own behaviour, the hacker creates a

simulated world within the simulated simveillance world to convince the apparatus that everything is as it should be. If this is accomplished, it will no longer be necessary for the subject to alter his or her own behaviour, since he or she has effectively removed him or herself from the realm. An example of this strategy was illustrated in an episode of the television program *The Simpsons*. In order to leave work early, Homer Simpson feeds a security tape from the 1970's into the video camera in his office, and sets it on automatic loop. Homer uses his data apparition for his own purposes; while the image of Homer is still working, the actual Homer is free to pursue outside interests. The illusion works (1970's-style afros and bell-bottoms notwithstanding) because it is difficult to argue against the information provided by the cameras: "How could the system malfunction? How could it create a false image?" (Bogard: 124).

The final relationship between surveillance and simulation is the replacement of the first by the second. Bogard does not go into this at length, but does provide an example:

> Driving. . . toward Laramie, Wyoming, you pass through the little town of Centennial. . . you are oblivious to how fast you're driving. Just at the end of town, you spot a patrol car at the side of the road by the café. . . You've certainly been spotted, probably scanned with a radar gun. You start to pull over. But as you get closer, you notice that no one is sitting in the car, that in fact it's not a patrol car at all, just an old junker painted black and white, topped with some fake flashers. . . (Bogard: 25)

Here, there is no surveillance, only the simulation. However, this example is not completely satisfactory. The painted junker represents a cheap forgery, or a trick, rather than the replacement of an actual process by a virtual one. The appearance is shattered before the driver has even completely pulled over. In addition, this example illustrates Bogard's reluctance to depart from classic Foucauldian panoptic theory.

Throughout *The Simulation of Surveillance*, Bogard uses terms such as power and discipline, while at the same time attempting to describe simulation theory, which argues against Foucauldian concepts of power. In this example, the driver *could* keep driving, or even keep speeding, but the internalized surveillance panoptic mechanism forces the driver to force himself to the side of the road. To a degree, the ghost car is a parallel to Bentham's ghost in the tower; however, Bentham's ghost is impossible to exorcise, while the ghost car is dispelled with relative ease. Bogard admits that this is not a very good example.

Theorist Roy Boyne argues that the rise of simulation technology should sound the death knell for the classic panoptic surveillance discourse. The implosion of temporality brought about by the increasing use of modelling and profiling simulation technology destroys the conventional notion of watching bodies move through space/time: "The anticipation of the real, aided by forms of diagnostic surveillance, is a common feature of medicine. . . of insurance. . .and of planning generally where the use of experience in anticipation is invaluable" (Boyne, 300). Panoptic theory relies on the observance of what is happening, and the recording of what has happened. Simulation theory allows for the observance and recording of what will have happened.

In addition, it is now just as likely for large groups of people to watch the activities of a scant few, as it is for the few to watch over the many. Media coverage of prominent figures demonstrates an inverted panopticon, with those in "power" being scrutinized by the masses. In the widespread cases of television soap operas or situation comedies, the masses are watching the activities of obviously fictitious entities, while "reality tv" blurs the distinction. Boyne refers to this transposed panopticon as the

"Synopticon", and notes that:

> . . .the Synopticon has a long history from festival, theatre, and the Coliseum through to film and television today; and from the simultaneous synoptics and Panoptics of the Inquisition – simultaneously theatre of cruelty and regime over the masses – through to the media attention to the security forces that duplicates that synoptic/Panoptic duality today, a duality that has been commented on in Victor Burgin's *Zoo 78*, a series of pictures juxtaposing the synoptical form of the peep show with passages from Foucault's account of the Panopticon. (Boyne, 301)

The rise of internet technology and digital cameras has allowed individuals to imprison themselves in their own Synopticons, allowing strangers to anonymously witness their daily lives online. As Gandy noted, people are not always unwilling subjects of the surveillance mechanism; people often display themselves willingly, either for financial gain, or for less quantitative rewards (Gandy: 1993, 70).

Perhaps even more compelling than these arguments for abandoning strict panoptic surveillance theory is the claim that no practical working panopticon has ever been built and operated successfully, and modern-day institutions are hardly models of servitude: "That failure is announced in many places: prison riots, asylum sub-cultures, ego survival in Gulag or concentration camp" (Boyne, 302).

Panoptic theory has produced the dominant surveillance discourse since the publication of *Discipline and Punish* in 1977. As such, it has been tested empirically and historically, and found to be lacking. Simveillance theory is relatively new (so new that this paper may be the first time the word has been used), and what little literature there is on the subject is largely theoretical – Bogard referred to his seminal work *The Simulation of Surveillance* as a "'social science fiction'. . . part factual and part imaginary" (Bogard, 6) – without much field work or historical analysis performed. This

is in part because simveillance theory is still relatively underdeveloped, and in part because it would be difficult to locate good examples in areas that are conducive to study. However, I believe that the American city of Las Vegas, Nevada provides an orgiastic feast of simulation, surveillance, and simveillance.

A Brief History of Las Vegas

The area now known as Las Vegas has been frequented by Europeans since the early nineteenth century; there was a small oasis that people travelling to California could stop at, and in 1855, a Mormon settlement was started at the site (Moehring, 1). The settlement was abandoned in 1858, but was resettled in 1865, when it was named Las Vegas (Moehring, 2-3). When the railroad was built between Los Angeles and Salt Lake City, Las Vegas served as a midway point, where crews could be stationed and equipment stored (Moehring, 3). By 1905, there was water service in the small town and by 1910, there were alcohol and prostitute services as well. In 1927, Las Vegas' first gold course opened (Moehring, 7-11).

The decision to build Boulder (later renamed Hoover) Dam in nearby Boulder City caused a flurry of building in Las Vegas. While the workers were stationed in a government-built town beside the work site, they would ride into Las Vegas to spend their money:

> Much of the new downtown construction involved hotels, as Nevada' recent legalization of gambling teamed with the population growth occasioned by the dam to fuel a recreation boom. Anxious to control and derive revenues from the state's substantial underground gaming industry, Nevada's legislature legalized gambling in February 1931. . . Nevada already enjoyed a maverick image, thanks to its liberal marriage and divorce laws. (Moehring, 20)

By the mid-thirties, casinos had opened up along Freemont Street in the downtown

area, and along Highway 91, which runs perpendicular to Freemont Street (Moehring, 21). In 1941, the first "resort hotel" opened on Highway 91. California hotel manager Thomas Hull furnished the El Rancho Hotel with a pool, retail stores, a steak house, and air conditioning (Earley, 54). This final luxury was a key introduction to Las Vegas, since temperatures in Nevada frequently surpass 110 degrees Fahrenheit (Gottdiener *et al*, 192). The El Rancho catered to the upper class as a vacation location rather than as simply a place to gamble, but it retained the Western motif that had previously dominated the downtown grind joints:

> The crucial event which transformed Las Vegas from a recreational to a full-fledged resort city was Bugsy Siegel's Flamingo Hotel. In a sense, the Flamingo was the turning point because it combined the sophisticated ambience of a Monte Carlo casino with the exotic luxury of a Miami Beach-Caribbean resort. The Flamingo liberated Las Vegas from the confines of its western heritage and established the pattern for a "diversity of images". . . (Moehring, 49)

The Flamingo opened for business in 1947, and featured florae and faunae from across the world as well as a three-story waterfall. Siegel's ties to organized crime, and his subsequent assassination a few months after the grand opening, reinforced the connection in the public eye between Las Vegas and the mafia (Moehring, 48-49).

Just as it had during the building of the Hoover Dam, and during World War II when an enormous army base was built on the outskirts of town, the federal government brought millions of dollars into the city in 1950 when it named Las Vegas as the new testing ground for atomic weapons. In addition to the 10 000 scientists, soldiers, and civil defence workers that moved to the site, the atomic tests brought tourists to Las Vegas:

> . . . while the consciousness of many Americans was haunted by the threat of nuclear annihilation, some local boosters promoted the explosion of nuclear

> devices outside of town as an entertainment event. Above-ground blasts were conducted regularly at the Atomic Energy Commission's proving grounds at Yucca Flats, about 75 miles north of downtown Las Vegas, and one enterprising promoter, Desert Inn developer Wilbur Clark, timed the gala opening of his new casino, the Colonial Inn, with that of an atomic blast. . . (Gottdiener *et al*, 79).

There is a photograph of the famous smiling and waving cowboy sign that was built over the downtown Pioneer Club, behind which the mushroom cloud of a nuclear explosion can clearly be seen (Moehring, 148k).

In the 1950s, seven large casino hotels opened along Highway 91 – or "the Strip" – the Sands, Sahara, Dunes, Riviera, Hacienda, Tropicana, and Stardust resorts. According to the FBI, almost all of them were run directly or indirectly by the mafia (Earley, 57-58). In the 1960s, even larger hotels were built, such as the Landmark Tower, the Aladdin Hotel, Circus Circus, and Caesars Palace, by businessmen with less obvious ties to organized crime (Moehring, 106-115). This was the Age of Neon, as casinos attempted to outdo each other with garish flourescent signs.

The end of the sixties marked the end of the second stage of Las Vegas casino expansion. Atlantic City and other new gambling locations attracted gamblers away from Las Vegas (Earley, 155-156). The classic casino games such as baccarat and roulette were becoming less popular than slot machines, which had originally been placed in casinos as an afterthought. Most Las Vegas casinos were slow to adapt to this trend, and by the beginning of the 1970s most allowed less than 30 percent of floor space to the mechanized devices (Earley, 107). The casinos were slow to pick up on other larger societal trends as well:

> By the mid-70s. . . the younger generation was more likely to head to stadiums and arenas to see rock bands like the Grateful Dead and Santana than to the casino nightclubs to see Sinatra and his fellow crooners. Risqué floor shows

> were not only becoming more expensive to stage but they had joined beauty contests on the hit-list of the burgeoning women's movement. (Hannigan, 151)

By the 1980s, many Las Vegas casinos were declaring bankruptcy. However, Circus Circus – with its emphasis on cheap food and plentiful loose slots – was showing record profits. It was to become the model for the third casino wave that began in 1989 with the building of the Mirage hotel (Earley, 127-147). The Mirage was followed within five years by the Excalibur, the MGM Grand, Treasure Island, and the Luxor, and by the end of the decade, by the Rio, Bellagio, Venetian, Bally's, New York New York, and Paris hotels. These new casinos dwarfed anything that had come before them, and were all constructed along the Strip. In addition to slot machines, the new casinos featured artificial volcanos, animatronic animals, explosions, enormous fountains and lagoons, and miles of moving sidewalks. With the rise of legalized gambling throughout Canada and the United States, Las Vegas no longer has the dominance it once enjoyed. In order to keep the tourist dollars coming in, the corporations needed to provide something besides gaming. To this end, Las Vegas has become a shrine to artifice and virtuality.

There is no longer a thematic link between the desert location of Las Vegas and its large casino resort hotels, nor is there a significant link between the new Strip and its own past. The neon sign – once synonymous with the Strip – has been replaced by the television screen and by new architecture:

> None of the megaresorts built in the 1990s. . . the Mirage, New York-New York, the MGM Grand, the Bellagio, or the Venetian, use neon on their buildings. . . according to Veldon Simpson, architect of the Luxor and Excalibur: "You don't need neon any longer. When you have something as powerful and dynamic as that architecture is [meaning his two hotels], you don't need a sign. It would be an insult to the architecture to sign it". (Gottdiener *et al*, 66)

The unseemly connections with prostitution and gangsters have either been erased by the new Disney-esque theme casinos, or whitewashed by Hollywood movies such as the 1991 film "Bugsy", which "attempted to turn a tale about a demented killer, Siegel, and his prostitute girlfriend, Virginia Hill, into a love story with likeable characters" (Gottdiener *et al*, 74). While prostitution, crime, and drug addiction are still very much a part of Las Vegas, they are no longer seen as good marketing:

> As some casinos shifted their marketing strategies to emphasize "family vacations", gambling activity seemed to be shoved to the background in an attempt to portray Las Vegas as an attractive resort destination for the entire family, or as one observer noted, as shifting from "sin city to fun city". (Gottdiener *et al*, 65)

Despite Las Vegas' new clean image, gambling is still as important as ever to the local economy. As of 2000, the annual revenues hotel-casinos were approaching $30 billion American, the majority of which were casino profits (Gottdiener *et al*, 64).

Downtown Las Vegas has not seen the same expansion as the Strip. There are no 5000- room towers or artificial castles on Freemont street. In an attempt to bring tourist gambling dollars to the area, an enormous frame was built over the street which holds millions of lights. At night, tourists are greeted with an artificial sky of dazzling colours and shapes. Despite the creation of this "Freemont Street Experience", there remain significant differences between the two main areas of Las Vegas.

Casino Surveillance Technology

While I was staying at the Rio Hotel in Las Vegas, I attempted to contact the security people, in order to get first-hand knowledge of the systems being used, and hopefully so I could gain access to the surveillance room itself. The security supervisor I approached was very open to being interviewed, but when I explained to her what I

was researching, she informed me that I would have to speak with someone from Surveillance, as the two departments were separate. She gave me the phone extension for the surveillance office. The first time I called, the person on the other line simply answered "yes?". I told the unidentified surveillance officer that I wanted to speak with someone from his department, and I was told to call back when the head officer was available. I called back at the specified time, and reached the head officer. Before I could explain to him why I was calling, he wanted to know how I had gotten the phone number. He allowed me to ask my questions, although he would not answer any of them. He kept saying "I really can't talk to you about that". Finally, after I had asked half a dozen unanswered questions, he told me: "Listen, I'm so worried about talking to you that I'm worried about telling you that I don't want to talk to you". I thanked him for his time and hung up.

This indicates the difficulty in researching surveillance in Vegas. At large casinos such as the Luxor, the surveillance room is hidden behind an unmarked door with a peephole opening (Earley, 241). Fortunately, there are secondary sources such as books and television documentaries which shed some light on the subject.

One of the most informative books regarding the technology and procedures of the casino surveillance companies is the 1996 work *Casino Surveillance: the Eye that Never Blinks* by George Lewis Jr., president of G & G Surveillance Specialists Inc., a Nevada-based company. In addition to technical specifications, Lewis provides personal anecdotes to illustrate the scope of casino surveillance:

> Once in a casino, a certain pit clerk was working the graveyard shift from 2:00AM to 10:00AM. Business was extremely slow, so the pit clerk started working on a crossword puzzle. The clerk was stymied on a particular word. Then the phone

> rang. The person on the other end of the line just said, "five across is lumber". The mysterious caller was the "eye in the sky" who had watched so closely that he could actually read the pit clerk's crossword puzzle. (Lewis, 12)

Because of the covert nature of the industry, Lewis' first hand knowledge is invaluable to gaining an understanding of what goes on in the modern casino.

The purpose of casino surveillance, according to State of Nevada Regulation 6, is to "protect the casino assets against internal and external theft and to ensure that internal procedures are followed" (Lewis, 6), in other words, maximizing profit while minimizing the risk of loss caused by employees or gamers cheating. Cheating, as defined by State of Nevada law 465.015, means "to alter the selection of criteria which determine: a) The results of a game; or b) the amount or frequency of payment in a game" (Lewis, XVI). The use of counterfeit tokens, coins, or bills during a game is also considered cheating by the state of Nevada (Lewis, XVII).

The two earliest types of casino surveillance were both based on the temporal world of line-of-sight and visibility. "Walking the beat" involves personnel in plainclothes patrolling the gaming area on the same level as the dealers and gamers. While this ensures a rapid response to a situation, the observer's field of vision is extremely limited. In order to facilitate an environment more conductive to observation, many casinos were designed with low, one-way mirrored ceilings. Personnel would then be able to patrol along "catwalks" over the gaming area, unseen by the subjects below. While this creates a more favourable line-of-sight angle, there is the problem of distance between the observer and the observed. To help solve this problem, binoculars would serve to extend the focal capability of the human eye (Lewis, 9-10). However, there was a limit to the number of observers that could prowl the catwalk at

any given time, and the use of binoculars also meant that peripheral vision would be lost. This makes it difficult to ensure that no cheating is occurring anywhere in the casino at any particular time. As well, the architecture of the casino would be dictated by the need to establish proper sight lines.

The advent of inexpensive, high quality video equipment has changed the face of casino surveillance. Closed circuit television (or CCTV) is by far the most common tool used by the modern casino:

> With the technology and equipment available today it is possible to put the entire casino complex on view and to record on video all the action. Remember the old saying "the hand is quicker than the eye". The hand becomes much slower when the many eyes of CCTV are watching. (Lewis, 10)

Casino cameras are housed in stationary black globes, which are either suspended from the ceiling or recessed halfway into it. The cameras are able to pan (or move horizontally), tilt (or move vertically), and zoom within the globe, however any movement of the camera is undetectable from the casino floor. The pan/tilt/zoom (or PTZ) camera must be able to pick up the denominations of currencies and of playing cards, the spots on die, and the faces of the employees and of the patrons (Lewis, 46).

All feeds from the cameras are displayed in real time on a bank of monitors within the surveillance room:

> If you picture the CNN newsroom, as seen on television, in miniature, then you have some idea of the scene as you enter the control room. A semicircle 6 to 8 feet tall of video monitors linked to cameras on the casino floor sit facing the main console. The console is set up to allow the operator(s) a clear view of all monitors while providing easy access to all the controls of every camera. (Lewis, 18)

The casino surveillance room is a virtualized panoptic hub. The unseen viewer watches his or her transparent subjects in their cells, just like Bentham's original design.

However, casino patrons are allowed free movement, which is in absolute contrast to the stationary panoptic subject. The patrons' images, on the other hand, are not allowed the same degree of movement. The PTZ cameras allow a surveillance operator to maintain an image in the centre of a video screen, even though the actual person moves about. The camera is able to follow objects, so that it is the background that moves while the object remains trapped. If the object moves far enough away from one camera so as to tax its abilities, another closer camera may be used to keep the object snared. In the open casino, people move about freely while their virtual images are imprisoned within virtual cells. These cells may be so small that they are filled by an object's head, or so large that hundreds of objects may occupy it at once. While some images may travel freely from one monitor to another, any image that attracts the operators attention will be stuck within the video monitor like an insect in digital amber.

All cameras are on constantly, though not every screen is being watched by the surveillance personnel. Therefore, it is important not only to display the images witnessed by the camera lenses, but to capture those images. To this end, everything that the cameras observe is recorded on video tape, and to ensure that no movement is missed, each camera is connected to two VCRs. When one tape is full, the camera switches to a new tape in the second VCR.

The tapes are kept for seven days, and then reused. Any event that is unusual, including large winnings, procedure violations, customer complaints, cheating incidents, and evictions from the casino are transferred onto a separate tape, where they remain indefinitely (Lewis, 10-12). From the video tapes, profile cards are made describing known cheaters, and "high rollers" – casino slang for gamers who wager large amounts

of money. These profile cards can be distributed to other casinos, in order to share knowledge.

Should a subject's image be captured breaking a casino rule, it can be forced to commit the act again and again, in slow motion and paused, zoomed in or set to infinite loop. Compared to the stubborn flesh or memory of an actual human, the video image is a docile, agreeable, malleable being. During an interrogation, a subject who is taking comfort in the immediate decay of physical actions will have his captive image betray him by reproducing the act.

It is not only the casino patrons which are being scrutinized by the eyes in the sky. Casino workers are also constantly watched, both to ensure that they are not cheating and to monitor the speed at which they work. A casino will have strict guidelines concerning how fast a blackjack dealer deals, for example, or how many spins a roulette dealer does in an hour (Lewis, 33-35). The workers in the "cage" – where money and casino tokens are exchanged – are also closely monitored. The cage is the only area of the casino floor where the cameras are visible, rather than being concealed within their black globes. Even the surveillance personnel are under surveillance, as camera pods are installed inside the surveillance room (Lewis, 26).

Cheating at the casino gaming tables involves either a physical manipulation of the corporeal mechanisms of the game, or the use of a device to augment the gamer's abilities. During a game of craps, for example, the surveillance personnel must watch to make sure that the dice are not switched, or that no one places a bet after the dice have been rolled (called past posting). During roulette, past posting is very common, as people put down a bet after the ball has settled into a number pocket. People have

cheated at mechanical slot machines by moving the handle in a certain way, or by inserting a device into the machine to mislead the coin counter (Lewis, 49-74). In each case, either something physical is being altered, or the player is not moving through time/space in the correct order.

In the game of blackjack – or "twenty-one", as it is sometimes called – cards can be marked by players, in order to give them inside information the next time those cards are in play. However, a much more common form of cheating in blackjack involves "card counting", whereby the player takes mental note of the value of the cards that have been discarded, in order to predict the value of the cards that remain to be dealt. A number of small, concealable computers have been developed to aid the player:

> . . . the computer will make essentially perfect playing strategy decisions at the blackjack table. The computer will advise the player of the approximate advantage for and against the house more accurately than any card counting system. The computer is able to keep track of every card played, and determine the number and values of the remaining cards in a single pack or up to eight packs in one shoe. With the assistance of a perfect strategy computer system, the player will obtain a long range advantage over the casino. (Lewis, 75)

What is occurring in these cases is the creation of an identical virtual game within the gambler's computer appendage. Mental card-counting systems are rudimentary and inaccurate, and work by dividing all card values into three categories (low, medium, and high). The virtual game in the computer keeps track of the real numerical value of all cards played, thereby granting the gambler knowledge of the cards that remain in the deck. It is worth noting that the mental card counter and the virtual game watcher will behave differently in the identical situations, as the counter who is observing the actual game does not have the information being fed via a small buzzer or tapper to the cyborg cheater.

Because this is a virtual process, rather than a physical one, it is very difficult for surveillance personnel to detect. They are taught to look for certain behaviours that may indicate the presence of a computer, such as posture, certain kinds of clothing, position at the table, a lack of alcohol consumption, and a more relaxed attitude towards betting:

> . . . a player wired with a computer will walk slowly, stiff-legged. . . tends to sit upright on the edge of the stool. . . the player may order, but most likely will not drink alcoholic beverages at the table. . . a player using a computer need only glance at a card to input its value and then leave the rest of the decision making to the computer. Therefore, the computer player can be more sociable and talk to both the dealer and fellow players. . . players using a computer will, at times, wear a baseball or other large billed cap. (Lewis, 81-82)

Players who cheat at blackjack by playing a simultaneous simulated game in their hip pocket can only be spotted by comparing them to a profile of the computer cheater, as there is very little that physically occurs. One of the most common ways for the virtual card counter to become visible is simply when they win more often than the casino average, thereby becoming even more of a focus of the cameras' gaze than he or she was previously.

The video camera is the most common surveillance tool in the casino arsenal, but it has some limitations. It requires that personnel be highly trained, and alert at all times. Gaming simulators may be skilled enough to avoid detection, thereby cheating the casino of thousands of dollars or more. The camera may only display what is physically transpiring, so if a cheater simulates the physical characteristics of a gamer, the camera and the camera user will be unaware. As well, there are privacy issues, as cameras are not allowed in many of the hotel sections of the resorts.

Another surveillance method employed by casinos is dataveillance. By using

dataveillance, casino personnel may transcend spatial problems entirely, and gain instant access to information regardless of physical locale, time of day, or conditions. The increase in computerization and virtualization of casino games means that dataveillance may operate in a fertile field of transparent numbers and figures.

Much of the dataveillance that occurs in the casino resort is connected to identification cards. For example, rather than using physical keys to open doors to hotel and casino rooms, virtual keycards are used. Rather than a physical process involving grooves and teeth of keys and locks, the keycards are temporarily imprinted with the necessary information to allow access through computerized locks. This has a practical financial and organizational aspect; lost keys are no longer an issue, since any keycard can open any lock when given the correct information. In addition, computerized locks may be instantly changed, whereas physical locks must be removed and replaced.

There is also a surveillance aspect to the keycard. Because it is a virtual process, rather than a physical one, it is possible to program a lock interrogation function into the keycard matrix. Any use of the keycard will be recorded in a databank:

> Every time someone entered a plastic room key into the electronic lock. . . it kept a record that showed the time, the date, and whether the key had been issued to a guest or a hotel employee. Each lock kept track of the last 150 times that keys had been used to open the door. (Earley, 229-230)

Since it is information that opens the lock, that information may be stored and accessed precisely. Attempting to ascertain the operations of a physical lock would be the domain of forensic science, and it would produce approximate results at best. Because the keycards produce their own surveillance, the dearth of video cameras in the hotel

rooms becomes less of a liability.

Gamers also use dataveillance identification cards, generally known as "Frequent Player" cards, or "VIP" cards. These cards allow casinos to build detailed profiles of patrons, and instantly see how much money they are spending or winning. The difference between visual observation and dataveillance may be seen by comparing the effects each has on the distribution of "comps".

Comping refers to goods or services that are given without charge to casino patrons, in order to help subsidize their gaming losses. The more that a gamers plays, and the higher the stakes, the more money they are likely to be losing, and the greater the value of their comps. These items may be as small as a free buffet breakfast, or as large as a complimentary luxury suite. Before the advent of the ID card, pit bosses would have to mentally take note of how long a player sat a particular game, and how much on average they were wagering. Then, these data would be entered into a pre-determined equation to calculate the value of the comps that particular player would receive. Books such as Comp City were published that described how a player could simulate losing more money than he or she actually was, by betting more while the pit boss was looking, and less while he or she was away, for example, or by taking long washroom breaks while playing (Earley, 325-326).

The ID cards prevent such simulation. When a carded player sits down at a table game or a slot machine and inserts his or her card, it keeps track of precisely how much money is being spent, how much is being lost, and how much is being won. With guesswork removed, the comping becomes less of an art, and more of an exact science. To entice players to use the cards, various promotions are used. Many

casinos promise better and more valuable comps to carded players. At Harrah's casino, a newly carded player has one hour to play low-limit slots without the risk of losing any money, as the casino will pay back their losses. There can be no argument about whether or not an hour has passed, however, as the card is programmed to keep track of how long the player has been at the machines.

The cards do not merely keep track of winnings and losses. They are also used to provide a databank of profiled players for the casino's own use. Direct mailings can be sent out to the ID'd player, and return players can have their preferences stored in the computers for future use. Any player who fills out an application for an ID card should expect to receive mail from casinos in a matter of weeks.

Despite the disappearance of the surface that dataveillance allows, it is not a perfect system. Because it still relies on physical cards to carry and record data, it is possible for someone to gain access to a card that is not attached to their identity. For example, if someone were to drop their hotel room card after leaving their room, anyone who watched this happen would be able to use the card to enter the room. A lock interrogation would provide information concerning when this occurred, and the duration the intruder was in the room, but would provide no information concerning the identity of the intruder. Of course, this would all have to occur before the guest noticed the key was missing, or the lock would simply be instructed to ignore the series of information that particular key possessed. Still, the ID card is not an ideal way to establish identity, and identity is a key component in casino surveillance.

Because of the difficulty inherent in observing someone in the act of card counting, the most efficient way for the casino to prevent cheating is to identify

previously known cheaters. For years, this was done by using mugshot books with thousands of pictures in them. Surveillance personnel would have to compare the faces they saw in their video monitors with the faces in the book. Disguising oneself so that one did not resemble the face in the book was a fairly simple procedure; wigs, and fake beards could be realistic enough at a distance to fool a surveillance officer. However, new biometric technologies require less human knowledge and diligence, as the human eye and mind are replaced by computer software.

Biometrics refers to the use of physical characteristics – voice, face, fingerprint, or eye – to guarantee identity. Biometric identification is hardly a new tool; in ancient Egypt, detailed records of bodily measurements and distinguishing features were used to ensure people were genuine (The Economist, 85). Fingerprinting has long been a staple of law-enforcement agencies; recently in North America there has been a transfer from ink-based fingerprinting to digital: "Modern electronic systems distil the arches, loops and whorls of conventional fingerprints into numerical code. This can be compared with a database in seconds and with an extraordinary degree of accuracy" (The Economist, 85).

Fingerprinting also has limitations. Because of its long association with law enforcement, fingerprinting carries a stigma. It is considered by many to be demeaning and threatening. In addition, fingerprinting can only take place in a very controlled environment. A degree of cooperation is required in most cases, or at the least a stationary subject is needed. It is a slow process, and one in which the users are at the mercy of temporality. For example, it would be very difficult, if not impossible, for someone to attempt fingerprint identification after a subject had left a busy area.

Without the actual presence of the subject's fingers, all that can be done is the attempted retrieval of physical prints left in grease or dust. Therefore, even if the fingerprint database is virtualized, it is still a process which remains in temporality for the most part. Other biometric systems such as hand printing, voice recognition, or retina scans remove the stigma, but retain a degree of cooperation – someone must still be coerced into providing their hand, their voice, or their eye for close scrutiny. For these reasons, these technologies are better employed for allowing people to prove their own identity than for allowing others to thrust their identity unwillingly upon them. In the language of the industry, they are better suited to verification than identification; verification refers to one-to-one matching, while identification refers to one-to-many searching (Visionics). Gaining access to a restricted area would require a kind of verification, while spotting a known person in a crowd of unknowns would require identification. Both processes are needed in the casino environment.

Facial recognition as a form of identification is hardly new. It is the way that people recognize each other during every day communication, and it probably predated language, since the human animal is a visual, rather than olfactoral being. However, with the increasing capabilities of computer technology, facial recognition has become a virtualized tool of simveillance, perfectly suited to the demands of the casino.

Human faces are – except for identical twins, triplets, etc. – unique. Despite this, as has already been mentioned it is a relatively simple procedure to disguise one's face. In addition, faces will change over time, developing marks, wrinkles, fat, hair, and other characteristics. The facial recognition capability of the human brain is hindered by this.

The solution for the facial recognition technology (FRT) designers was not merely to increase the complexity of their computers, but to decrease the complexity of the human face. Rather than comparing faces, the computer transforms any given face into a set of co-ordinates, like the co-ordinates on a three-dimensional map. These co-ordinates are taken between points that are unlikely to change barring any serious trauma or surgery, such as the distance between eyes, mouth, and nose. This virtual facescape is then instantly compared with the numbers of other facescapes in the database, and high-percentage matches are examined (Visionics). Rather than trying to take factors such as eye and hair colour, or facial hair into account, they are simply eliminated from the virtual map.

Once the face has been rendered it becomes data, which means that the information may instantly be duplicated and sent to computers throughout the Las Vegas strip. Anyone who has been caught cheating at one casino can instantly become part of the virtual mugshot book at an unlimited number of other areas, whereas a physical photo or description would have to be sent and read by surveillance personnel.

Facial recognition technology has a number of advantages over other biometric systems. Unlike fingerprints, hand prints, or eye scans, a facescape can easily be taken without the subject's knowledge, and from a distance. The subject's actual presence is not even necessary, as long as his or her image has been captured by a video camera. Captured images may be compared to each other, or a live feed may be compared to a captured image. Since the identification takes place in the coincidental virtual world, all of the previously noted advantages concerning temporal spatiality are

present.

The monitoring of virtual facescapes by FRT reduces the need for actual world surveillance, as the actual eye may be fooled by the dissimulation of the subject. Additionally, FRT reduces the need for the surveillance of the virtual world from the actual world (actual humans watching video screens), as it is self-monitoring. In their professional FRT literature, the Visionics corporation asks "How effective is a CCTV control room operator who has been standing at multiple monitors for several hours?" (Visionics). The answer to this rhetorical question is that the human operator will be ineffective. The technology now exists to replace the final human element in the surveillance matrix, and the existence of this technology demands that the question, which previously would have been considered moot, be asked and answered with the further virtualization of the system. Visionics advertises:

> Revolutionary CCTV surveillance automation with accuracy and speed that far exceeds human capabilities. FaceIt surveillance is an intelligent software solution that is designed to complement and enhance any existing CCTV system by automating and improving the routine and arduous surveillance tasks performed by a human operator. . . [the system] is not subject to fatigue or distraction. (Visionics)

The modern FRT system automatically identifies faces in crowds, transforms the faces into facescapes, and compares the contours to previously captured and identified facescapes. Once probable matches are found, an operator may be notified (Visionics). However, it is noted that the technique "allows for human backup" (Visionics). The only time the human is a vital part of the system is when it is necessary to physically remove an actual person from an actual area, after their virtual face has been identified as an undesirable.

There are significant differences between FRT and fingerprinting technologies concerning the relationship between the subject and the identifier. Given a scan of one's own fingerprint, it is possible to recognize ownership. The fingerprint scan will duplicate one's own fingerprint, and so it will seem familiar once examined and compared to the real thing. There is no technological intermediary necessary. Conversely, the subject would be unable to recognize ownership of his or her facescape. Obviously, since it is not a visual representation but is instead a set of numerical co-ordinates, the facial scan will not resemble the subject in any way. While the digital relief map is used to identify the individual, the individual would be unable reciprocate by identifying the mass of ones and zeros as his or her image. Without the correct technology, the numbers mean nothing. For this reason, the numbers are denizens of the virtual realm.

As a system of identification, FRT has advantages over card-based dataveillance. The card-based system, while virtualized to a high degree, still depends on the physical existence of the card, which retains separation from the user. It is possible to use someone else's credit card, for example, or someone else's room keycard. Facial recognition technology allows the same database account maintenance, while destroying the physical interface of the card. The identity information is created from the subject's own face, thereby fusing the subject and the identification. With FRT, you are your own password, your own ID badge.

Using the hotel room as an example again, it can be illustrated how this further virtualization may replace conventional temporal surveillance. The keycard and infolock allows information interrogations that display the times that hotel doors are opened, and

provide some information concerning the possible identities of people who entered the hotel room – assuming that the keycards are being used by the subjects they are assigned to. If the keycard was replaced by FRT, there would be even less doubt. The facescape would provide the data needed to open the infolock, but would eliminate the possibility of fraudulent use. Identity and access are fused into one set of information. Because of this, many previously card-based systems are switching over to FRT:

> In Boston, the state welfare agency takes pictures of new applicants and compares them with all 300,00 people in its database to make sure the applicant isn't trying to double-dip by getting a check under a different name. . . In one sign of growing confidence in facial recognition, San Francisco's Innoventry Inc.. . . is cashing checks at ATM-like devices based on a facial scan. Customers register at a kiosk by picking up a handset and answering a series of questions while their picture is taken. Next time they come with a check, they just enter their Social Security number, and the kiosk verifies their identity with a photo. (Bulkeley, B1)

While these databases are ostensibly used for verification, they could just as easily be used for identification, by comparing an unknown, unknowing and unwilling face to the known, captured facescapes in the database.

While Las Vegas casinos have been reluctant to discuss their surveillance systems, it has been established that most of the large casino hotels on the strip make extensive use of FRT technology, and many of the largest casinos use Visionics' FaceIt equipment (Bulkeley, B1; Visionics Press Release). In 1998, FRT systems had 3.9% of the biometric technologies market share in the United States. By the year 2000, this number had grown to 7.1%, while voice identification technologies percentage had lessened to 15.8% from 21.4%, and hand identification technologies percentage had decreased to 31.0% from 35.3% (The Economist, 85). As FRT becomes more commonplace, the shared databases will increase, and become more comprehensive.

With many areas using digital photographs for driver's license IDs, and with the push to introduce more FRT-based ATM machines, FRT-based surveillance systems are increasing their capabilities on a daily basis. While an actual collection of millions of mugshots would be enormous and unwieldy, a virtual database of millions of facescans would be instantly accessible and easily stored.

In the short history of the Las Vegas casino, there has been an incredible increase in the performance capabilities of surveillance technology. In less than 60 years, casinos have progressed from human-based temporal systems (such as the catwalk and the one-way mirror) to video- and computer-based systems. Books have been replaced with disk drives, eyes have been replaced with lenses, and brains have been replaced with processors. Where once a human would look at photos other humans, now a computer scans images of digitalized faces. While casino architecture was once based on the need to establish line-of-sight and concealed observation posts, the creation of co-incidental identical virtual worlds has meant that casinos can now take any shape possible while retaining better surveillance coverage. The modern casino is a marvel of simveillance.

The Las Vegas Strip: Under the Sun

It is perhaps a mistake to try and define the two spheres of the Strip as exterior and interior, since the exterior is full of architectural structures that are normally found inside, and extreme measures are taken to try to make the interior resemble an exterior. However (in the daytime at least) the blinding desert sun burns away such pretenses. The interior is hidden away from the sun, the exterior is under it.

Approaching Las Vegas by air is a singular experience; the city sits like an island

floating on an ocean of sand. Flying in during the day, there is an immediate transformation from desert dunes to lawns, golf courses, and rectangular subdivision developments. The thousands of half-built houses that can be seen once the aeroplane is low enough testify to the period of rapid expansion the city is experiencing, while the acres of green grass illustrate a stubborn refusal on the part of the new inhabitants to admit to themselves they have moved into the centre of a desert. The small parcels of land that surround each new house look like they could be from any city in the United States, and after flying over the desert the immediate transition is startling.

While the suburbs are remarkably unremarkable, there can be no mistaking the Las Vegas Strip for any other stretch of highway in the world. The strip hotels are clearly noticeable from 5000 feet in the air, as they dominate the city's outline. Thanks to the extensive media coverage of the Strip – in movies, documentaries, sweeps-week sitcom episodes, etc – the scene looks very familiar to the average North American, even if it is his or her first trip to the city.

Flying into Las Vegas at night is an incomparable experience, as the scenery quickly changes from the pitch black of the desert to an almost unbearable brightness. The rectangular nature of the new housing developments is obvious, as each neighbourhood resembles a brightly lit square in a pattern of similar squares. However, what is again most noticeable is the Strip. While the desert and mountains that surround Las Vegas dominate the daylight hours, at night the Strip effaces the natural landscape with artificial grandeur.

Las Vegas is the city of Brahma and Shiva, but not of Vishnu. There is constant

construction, and constant destruction, but very little is allowed to exist for an extended period of time. Cranes and wrecking balls populate the area in roughly equal amounts. No building is sacred; even Bugsy Seigel's original Flamingo hotel casino was torn down in order to make way for a new, larger Flamingo hotel casino which shares nothing except location with its namesake. Tellingly, while Strip structures reach dozens of stories into the sky, the hard caliche foundation of the city prevents designers from digging their buildings into the ground. Instead, they perch on top of the earth like dominos on a hard wood table.

A quick trip around the exteriors of the Strip hotels is a dizzying pastiche of varying architectural styles. Some of the casinos, such as Caesars Palace, and the Excalibur, are designed to emulate a particular era in human history, although historical accuracy is dubious at best, and it would be more charitable to argue that the architecture is based on the Hollywood films based on historical eras. Walking around the moats and draw bridges of Excalibur, for example, one is reminded of B-grade Robin Hood serials. The faux-marble exterior of Caesars Palace does indeed make one feel as if he or she has been transported back in time, not to ancient Rome, but to the set of Ben Hur or one of the countless other toga-and-sword films that populate late-night television cable channels.

The Rio and Luxor resorts – one loosely based on Marti Gras, the other on ancient Egypt – both employ a kind of anti-architecture. Visible as structures during the day, at night they both disappear into negative space. Because of the seamless windows that cover both buildings, all that can be perceived by the eye of the Rio Hotel is a series of seemingly unsupported arching lights, while the Luxor can only be

identified from a distance as a pyramid-shaped absence.

The New York New York hotel casino is designed to resemble New York City. Every one of the city's easily identifiable landmarks are scaled down and placed together as one structure. The Empire States Building and the Statue of Liberty – which are miles away in the actual city – stand side by side with the Chrysler building and the World Trade Centre. The promoters of the hotel claim that tourists may visit all the sights of New York, without having to worry about getting lost, running out of time, or having to deal with New York residents.

Several newer casinos – notably Paris and the Venetian – are designed to emulate historical European cities, while still allowing American tourists to enjoy a European-free environment. The Paris casino, which also features the Arc de Triomphe and the Champs Elysees, is straddled by a scaled-down version of the Eiffel tower, although the Vegas Eiffel is bolted and spot-welded rather than rivetted. Two of the tower legs come through the roof of the casino, giving the impression that the two structures have mistakenly occupied the same space/time. The Venetian goes even further; it is designed to emulate almost on a 1:1 scale the Courtyard in Venice. Painstaking measures have been taken to ensure accuracy, although there is no raw sewage floating down the canals of the Venetian in the desert. Despite this, the Las Vegas Venetian's canal water is no more suitable to drink; while Europe's Venice canal water contains harmful bacteria and other organisms, the Venetian's water is chlorinated to a sparkling sterility.

The Venetian is not alone in its use of exterior water. The Strip is littered with fountains, pools, artificial lakes, lagoons, waterfalls, springs, and geysers; the Strip air is

noticeably more humid than the air four or five blocks away. The Bellagio resort uses a water show as its main attraction; at night, millions of gallons are fired into the air via pressurised jets to the sounds of easy listening or classical music. In the middle of a desert – an environment where water should be at a premium – water is everywhere, albeit undrinkable.

Just as the water is sterilized of undesirable organic contaminants, so too the Strip itself is free of undesirable organisms. While penguins, flamingos, tigers, lions, sharks, dolphins and peacocks are plentiful, no desert wildlife intrudes onto the strip. If one wishes to see indigenous florae and faunae, one must travel to the University of Nevada's reptile zoo, or the Hershey chocolate factory's cactus park, where desert life is separated, contained, and easily viewed in a comfortable environment. Most Strip casinos sport tall palm trees, but they are not indigenous to Nevada:

> Visitors, and some residents, associate palm trees with Las Vegas, but the tropical trees are not native to the area. They are, rather, expensive imports and are as difficult to maintain as are the non-indigenous saguaro cacti that increasingly dot the valley. The demand for palm trees is so great that companies across the southwestern United States hire "spotters" to find good trees in people's backyards. . . Once the tree is purchased, uprooted, and transported by truck to Las Vegas, the price can escalate to $4000. . . The interior of McCarran Airport is similarly decorated with metallic palm trees. (Gottdenier *et al*, 202)

The palm trees, while expensive, are important to reinforce Las Vegas' image as a natural oasis. The classic movie depiction of a natural oasis involves extensive palm tree coverage.

The Las Vegas police also ensure there are no undesirable organisms inhabiting the Strip. There are very few panhandlers or homeless people in the area, and those that do enter the area are quickly removed. While every giant resort is paid for by the

losses of individual gamers, there is no visual evidence of the effects of gambling. There are no pawn shops on the strip, no loan shark offices, and no food banks. Each casino gives away small, tasteful business cards with the phone numbers of gambling addiction agencies, but this is the extent of the acknowledgement. The resorts do their best to portray gaming as an innocuous, pleasant, safe activity. This is why the term "gaming" is extensively used, while the term "gambling" is shunned.

Even desirable organisms – such as tourists – are not allowed to freely wander the area haphazardly. Las Vegas authorities have a surprisingly lenient attitude toward drivers who run over pedestrians who are on the road, and tour guides ensure that visitors are well aware of this, thereby keeping them on the sidewalks for the most part. However, even after he or she has been safely confined to the sidewalks, the tourist is still not allowed complete locational autonomy. A series of outdoor escalators and moving walkways control the movements of the pedestrian. Any one who steps onto a walkway in front of Caesars Palace, for example, will soon find him or herself inexorably drawn over a hundred feet through an archway and into the casino. The handrails and the 20 foot drop to the ground below discourage any attempts to change one's course. The passenger monorails that populate the strip also help transform the untamed mass of humanity into predictable, organized patterns. The various corporations that design and operate the casinos have gone to elaborate lengths to ensure that very little chaos is allowed on the Strip.

There are also extensive measures taken to prevent the naturalization of the architecture via the process of urban decay. The Venetian, for example, features aged chipped columns. However, these recently-built columns were artificially chipped to

seem old, and then frozen in time. Any additional weathering is immediately corrected. Things may look old, but they are not allowed to actually age. Simulation helps the resorts accomplish this temporary victory over temporality.

One of the classic Las Vegas images is of the waving cowboy billboard, beckoning gamers to enter the casinos. When one walks down the strip, there appears to be constant movement coming from the casino architecture. However, there have been steps taken to eradicate actual movement. Actual movement requires the physical interaction of components; this interaction produces wear, as the components move against each other. Wear produces decay. The movement that comes from the architecture on the Strip is virtualized on enormous videoscreen hypersurfaces:

> Hypersurface architecture is a way of thinking about architecture that does not assume real/irreal, material/immaterial dichotomies. . . In a post-Christian world where transcendentality is bankrupt, we face. . . a culture in decline that wishes to be replaced by technology (www.mediamatic.nl/Doors/Doors2/Perrella/Perrella-Doors2-e.html).

This allows the designers to display scenes in realistic detail that have nothing to do with the immediate surroundings, such as running a clip from a show that happened weeks before (or will have happened days from now) or featuring a celebrity who is nowhere near the city (or is dead). This virtualization also makes it far easier to drastically change the appearances of the outside of the casinos, since no construction is necessary. Like the keycard versus the key, the videoscreen allows for far more immediate control than the physical sign, and like the compact disc versus the vinyl record, the videoscreen provides a vivid simulation of an actual process without the requirement of physical interaction.

There is no sense of physical deterioration on the strip; the accelerated pace of

construction and destruction ensures this. Each building is pristine, and there is surprisingly little garbage in the streets besides the prostitute advertisement brochures that are given away at every major intersection. However, the occasional aroma of human waste sometimes is perceived underneath the artificial scent of pina colada that is pumped into the air, giving an olfactoral demonstration of the physical limitations of the sewer system. From the Strip, this is the only indication that it is not possible to sustain millions of people in opulence in the middle of a desert.

Las Vegas gives off the impression of a vivid, wanton, untamed oasis surrounded by the barren South West desert. This is an illusion. While the desert actually flourishes with life, the Las Vegas Strip is sanitized, sterilized, and controlled. Undesirable organisms are removed, and desirable ones are contained. Even the physical laws of entropy are temporarily held in check through the eradication of actual movement. As in Biosphere 2, there are no scorpions on the streets of the Las Vegas Strip. Baudrillard argues that "In a hyperprotected space the body loses all its defences" (Baudrillard: 1996, 62). The hyperprotected exterior space of the Las Vegas Strip renders the subject vulnerable to the frenzy of seductive simveillance that occupies the interiors of the Las Vegas casinos.

The Las Vegas Strip: Away from the Sun

There are significant differences in surveillance properties between the older Strip casinos and the newer ones, and these differences help illustrate the impact that simulation has had on surveillance. When one is inside the few older Strip casinos, it is apparent that sight lines dictated the architecture. The newer casinos have freed themselves from the shackles of real observation, and as a result have a radically

different look to them.

Even before one enters the Riviera casino, it is obvious that it is an older building. From the outside, it resembles a casino, rather than a castle or pyramid. The movement on the walls is an illusion created by sequential lights, rather than by a hypersurface videoscreen. Once inside, it is even more obvious. The ceilings are very low – less than 14 feet from the floor. It is easy to tell where the overhead catwalks are; they are the areas surrounded by mirrors. Generally, there are catwalks directly covering each of the long strips of gaming tables, while one catwalk suffices to cover several rows of slot machines. Mirrors also cover parts of the walls, and the insides of the craps tables. Refraction is employed to compensate for any poor sight lines, since it is difficult to identify a face from directly overhead. The Riviera has been updated over the years with newer surveillance technologies in the forms of cameras and infocard-capable slot machines, but these devices have been added on to, rather than designed into, the building. Judging by the relatively small numbers of camera pods in the casino, the surveillance at the Riviera is still very much reliant on the catwalk, and on the pit bosses who continuously prowl the floor beside the gaming tables.

The Casino Royale has a number of classic panoptic features. The most obvious one is the design itself; the building was designed to allow complete visibility while concealing the observers from the observed. Surveillance is still located in the temporal world, as actual eyes (using binocular lens prostheses) scan actual people in the casino which is actually below the observers. However, there must be several observers, instead of one (or the ghostly image of one in the shadow of a lantern). While the panopticon would theoretically function just as well with a professional, an

amateur, or a human-sized baboon in the tower, the catwalk must be staffed with highly-trained professionals. These professionals must be constantly scanning the tables, the gamers, the dealers, the chips, the cards, and the money as each moves through conventional time/space. In the panopticon, it should not matter whether any particular subject is being observed at any particular time; above the casino floor, it is vital to observe as many subjects as is physically possible. In the temporally-based Casino Royal, this is done to a large extent by corporeal beings.

There is a dramatic difference when one steps into a later model casino such as Bally's. The floor still resembles a casino, but the ceilings are higher, and there are fewer mirrors. The floor area itself is much larger. The most obvious change is the increase in the camera pod population; they cover the ceiling above the gaming tables and slot machines. They are not spread out in a uniform pattern, there are some areas with four or five within a few feet of each other, while other areas will only have one pod covering the same footage. This uneven placement makes the bulbous black camera pods look like a pox infecting the casino ceiling. While there are fewer eyes watching the Bally's casino floor than there are watching the Casino Royale, there are hundreds more lenses automatically scanning and recording a coincidental virtual world. Surveillance officers in the control room each have dozens of video camera prostheses; while the binocular-eyed Casino Royale officer loses his or her peripheral vision by focussing on one small area, the Bally's officer has the advantage of the insect-like compound eye of the videoscreen wall. While the Casino Royale observers retain physical imminence with their subjects, the Bally's observation room may be positioned anywhere in the casino, and in some cases, an officer may be watching a direct feed on

a laptop computer while not even being inside the casino walls. Because of the virtualization of surveillance, a larger area may be watched by fewer people in the modern casino, which is one of the key aims of the panopticon. Despite this, Bally's shares no physical characteristics with the classic panopticon model.

From a theoretical perspective, the threat of surveillance is indeed always present – the black pods replacing the shadow in the lantern – but there the similarity ends. The ghost in the tower is a figure that sits prominently in the subject's field of vision, so that the subject may always keep in mind that he or she is being observed. On the other hand, while the casino does not attempt to conceal the camera pods, nothing is done to draw attention to them, either. The density of their population means that no particular pod will stand out, and the concentration that gamers place on their own activities means that few people bother to look up. People often mention the "eye in the sky", but this does not carry the same God-like connotation that Bentham envisioned for his tower figure. The casino eye is not there to enforce moral hygiene, it is simply there to ensure that people are behaving according to the rules of the casino.

It could be argued that the casino floor is divided into individual cells in which subjects are contained and rendered incapable of free movement. These cells are actually smaller than the ones in Bentham's plans, as they only comprise the subject's chair, and a slot machine or section of card table. No physical barrier exists to prevent someone from leaving their casino cell, although many people attach their frequent player ID cards to themselves with a cord, making it seem as if they are running an IV from their slot machine when they plug themselves in. But while there are no cell walls, there is still a powerful attraction that keeps people in their seats for long periods of

time. Whenever there is a fire in a sweat shop factory, it is generally reported that many workers who had been chained to their machines had perished in the fire, unable to leave their stations. When the MGM Grand Hotel burned down on November 21, 1980, charred corpses were found still sitting at their slot machines (Earley, 140). However, this is not the obvious and involuntary confinement of the panopticon, but is instead the seduction of the illusion of possibilities the spinning reels create and the siren call of hopeful noises that the slot machines produce twenty-four hours a day. It is not the surveillance mechanism that is internalized by the casino gamer, but the shackles, chains, and walls.

The panoptic model is an even less apt description of the new class of city simulacra casinos. While Bally's still resembles a casino, the interior of the nearby Paris casino has been made to resemble an outdoor French market. The ceiling is more than 40 feet high, and is painted and textured to feign a beautiful sunny day, complete with fluffy white clouds that appear to move when one walks underneath them. There are no long banks of mirrors anywhere; they would obviously shatter the illusion. Nor is there a pox of cameras dotting the afternoon sky. At first, it appears that the casino-wide outdoor simulation has hampered the surveillance of the area. However, upon closer inspection, the familiar camera pods may be detected. There are many lampposts in the slot machine areas, and each lamppost contains a little black pod, rather than a lantern. The card tables sit underneath an elongated trellis, designed to feign outdoor garden architecture. Hidden away in the trellis are dozens of pods, each concealing a vigilant camera.

While in Bally's casino no steps have been taken to make the camera pods

obvious, in Paris they are virtually concealed. This is in direct opposition to the panoptic model of visible but unverifiable surveillance. In the Paris casino, all subjects are continuously being watched, scanned, recorded, and compared, but surreptitiously so. The reason that the panopticon uses the illusion of constant vigilance is because of the physical problems such vigilance would have posed; Bentham argues that the fiction of observation is as potent as actual observation. When simveillance makes constant vigilance possible, it is no longer necessary to reinforce the illusion of the fiction.

Interestingly, there is a striking difference between the surveillance in Strip casinos and the surveillance in downtown casinos. Downtown Las Vegas is markedly dissimilar from the Strip; in the absence of artificial bodies of water, the Downtown air feels parched, and the resorts are on a far smaller scale than the Strip giants. In addition, the end results of gambling may be observed in the forms of homeless people, pawn shops, loan sharks, and large billboards for Gamblers Anonymous. It is obvious that the main Downtown casinos were not designed with subtle virtual surveillance in mind. Instead, mirrors are everywhere, beach ball-sized camera globes hang down ominously over roulette tables, and uniformed security guards make their presence known by constantly patrolling the floors. In the nearby pawn shops, the cameras sit exposed on bare mounts, and small grainy television screens reveal to the customers via direct feed everything the cameras are recording. Great lengths are taken to illustrate to the patrons that they are being closely monitored at all times, in part because the Downtown area is under far less direct control than the Strip is. Once you are identified as an undesirable in one Strip casino, you will quickly be unwelcome at

the rest as your facescape is instantly entered into the virtual mugshot book. Since the Downtown casinos rely on heavily on temporal surveillance tools, they are still accessible to people who have been excluded from the Strip. It is much more difficult to exclude someone from Downtown, since a simple disguise or new facial hair may be sufficient to fool the human eye of security.

The Downtown structures are better described by panoptic theory than the Strip casinos; the surveillance is obvious and designed to remind people to watch themselves. In the case of the pawn shops, customers may literally watch themselves on the small monitors. This is in contrast to the simulation-rich Strip casinos, where surveillance is done discreetly or invisibly.

The viewfinders and camera lenses are not all pointed at the tourists in Las Vegas; many of them are pointed away. The modern tourist experiences the city through his or her personal technological filters. The tour buses that pick people up at the airport feature closed camera monitors above the seats that broadcast in real time the same view that is visible by looking out the window. For those passengers who are sitting a few rows away from the monitors, the windows suffice; for the passenger sitting directly behind a monitor, it is very difficult not to spend the trip staring at the small flickering television. Even on foot, it is common to see a tourist walking through one of Las Vegas' simulated landmarks while keeping his or her eyes fastened to the two inch screen on a camcorder. Presumably, once the tourist has returned home, he or she will be able to experience Las Vegas on his or her big screen television.

At the Forum Shops mall, the simulated video experience reaches a new level of obscenity. There is a large circular saltwater fish aquarium in the centre of a court

which features dozens of brightly coloured ocean fish and a nurse shark. Benches surround the tank, so that people may observe the fish, but the benches face away from the tank. Along the outside wall, giant video screens broadcast live feeds from cameras positioned inside the tank. People sit with their backs resting on the tank, watching the digitalized fish swim across the hypersurfaces. Some people stare into their own viewfinders at the televised fish, often as the actual fish is mere inches from the back of their heads.

While this is an extreme example, it is not unusual. The increase in availability and the decrease in price of video cameras has meant that the panoptic gaze does not flow unidirectionally through the lenses of a few controlling elites, but instead is directed both at and from the masses. People are observing each other, and people are observing themselves by turning their lenses around to capture their own actions for later scrutiny. If there were visible light broadcast from every video or digital camera in a Las Vegas casino the resulting display would easily humble the most expensive laser show; although the de-centralized nature of the casino camera show would result in a chaotic exhibition. The modern subject is beset by surveillance from all sides, and is immersed in an ocean of observation.

The modern Strip casino is certainly not shaped like a panopticon, and while it shares some theoretical characteristics with the design, there are also some significant disparities. There are stationary subjects to be observed, but seemingly of their own will. In some cases, the sources of surveillance are hidden, rather than being the focus of attention. Temporal surveillance has been replaced to a large extent by virtual reproduction. The gaze that is so important to Foucauldian surveillance theories is

refracted and dispersed like a beam of light through a shattered prism.

Classic panoptic theory seems unable to contain the explosion of simulation that has effaced the Las Vegas casinos in the last twenty years. It is a theory very much based in the actual movement of physical bodies through existing structures, and as such it limits understanding of the increasingly virtualized environment in which the average North American finds him or herself. Attention must be paid to the particular ways that simulation and surveillance are united.

Simveillance in Las Vegas

A mobile and unpredictable subject is a dangerous subject, and a subject which will be the focus of surveillance. In Las Vegas, simulation helps ensure that potentially dangerous subjects are rendered immobile and predictable.

In an attempt to transform the city from a gambling area to a total entertainment area, Las Vegas features a number of rides. One such ride is the "Race for Atlantis" ride, located in the Forum Shops mall. The ride features an exciting and perilous underwater chase through ruins and buildings at breakneck speed. However, the spectator moves very little. Instead, he or she is relatively stationary while the very latest simulation technology fools his or her brain into believing movement is taking place. The majority of the motion takes place on the 3D dome screen, not in the real world, but the impression of movement remains.

As has previously been mentioned, structural movement is virtualized to a great degree on the Las Vegas Strip. The movement of the individual has similarly been virtualized. Video game arcades are common, in part because children are not allowed on the casino floor and parents need a place they can leave them for extended periods

of time. Many games featured in the arcade replace actual movement with virtual, resulting in a stationary subject. As an example, consider downhill skiing. There are many things that can go wrong when a person is downhill skiing. They may get lost take the wrong trail, they may run into a tree or another skier, they may have snuck on to the hill without paying, they may take their ski pole and stick it into the eye of another person; the list is endless. As well, it is very difficult to observe someone who is skiing, because of the speed and the distances one travels. Now, consider the downhill skiing simulation game that is popular in many Strip arcades (as an aside, the presence of simulacra are so endemic to the Strip that the idea that someone would come to middle of the desert to experience Alpine skiing is not surprising). The simulation skier straps into a set of immobile skis surrounded by videoscreens. The equipment and the screens are hooked up to a computer that calculates the feedback the skier will receive. It is no longer possible for the skier to lose his or her way; there are no ways other than those provided by the simulation. Crashing into obstacles or other skiers is also no longer an issue, since there are no obstacles or other skiers actually present. Anyone wishing to observe the simulation skier would find the task very easy, since the subject would simply be standing still, while the videoscreens and artificial paraphernalia provided the sensations of movement. There could be no easier target for surveillance.

While virtual motion rides and computerized arcade games are a significant part of the Strip, the single most important machine in Las Vegas is the slot machine. One-armed bandits, as they are often called, are everywhere in the city. The Las Vegas airport lobby is full of them, most grocery stores have a few by the front door, and the modern casino uses most of its floor space to feature them. Part of the attraction is the

simplicity, there are few rules to remember, and no dealer or fellow players to concern oneself with. Instead, one is able to simply sit, and watch the reels spin.

The original slot machines were mechanical devices. Pulling on the handle physically activated clockwork-style gears within the machinery, which spun the reels. These early machines were susceptible to manipulation. Users could squeeze the handle a certain way when a cherry symbol hit the top left corner, and the machine would pay off more coins than it was designed to. Or, when a user won, they could lower the handle slightly, then pop it back to get the same payout without spinning the reels again. Finally, a skilled user could work the handle in such a way that winning combinations would line up across the payline (Lewis, 50).

The modern slot machine is a computerized device with a random number generator controlling which combination the reels will hit with any given roll. While walking around a casino floor, there are plenty of opportunities to look inside slot machines while they are being repaired or refilled, and they more resemble the interior of a personal computer than an analog clock. Microchips and processor boards have replaced the gears; these microchips have no memory, so the idea of a "hot" machine is a fallacy. The movement of the handle has no direct relation with the spinning of the reels; in fact, it is rare to see someone pulling on the handle while they are using a modern slot machine. Instead, the machines are furnished with a large push-button marked "SPIN". Gamers minimize their own movements by simply resting one hand on the button and pressing down with their fingertips, rather than having to move their entire arm to pull down on the handle. The reduction of fatigue is important to the casinos, as a large percentage of the gamblers are elderly, and their arms tire easily.

By virtualizing the slot machines, the casino ensure that elderly players are able and willing to spend longer periods of time sitting at the slots.

By placing a virtual filter between the movements of the gamer and the movements of the reels, the slot machine designer reduces the influence the gamer has, and reduces his or her possibilities. While the mechanical machines could have their handles popped, squeezed, or walked in order to give the gamer an advantage, no such manipulation will have any effect on the random number generator inside the virtual machine. Gamers may still attempt to influence the machines through physical interaction, but these attempts will be futile. As a result, casino surveillance personnel no longer need to look for such behaviour.

However, the modern slot machine is still vulnerable, because it must still dispense physical coins to the player. Therefore, physical means may still be used to ensure the machine pays out more money than it was designed to. Devices called "monkeypaws" or "kickstands" can be inserted into the hole in the machine where the coins are dispensed to physically lift the coin counting mechanism in the slot machine, or a small flashing light may be inserted to blind the optical counter in a more advanced machine. In either case, the device blinds the machine to the number of coins it is paying out, by attacking its vulnerable, physical component.

While slot machines are the most popular game in the casino, table games remain an attraction. Every table game – be it cards, roulette, or craps – remains firmly in the physical realm. In card games, the key variable is in the order and distribution of paper cards. In roulette, it is the interaction of a metal ball with a moving container. In craps, the player actually gets to touch and control the variable to an extent, as he or

she throws the dice. In each of these processes, there are many ways for the gamer to cheat.

As an example, look at a game of blackjack. It has already been discussed how a gamer may gain advantage by either counting cards in her head, or by employing a computer to play a simultaneous virtual game. There are other, less advanced ways for the gamer to cheat. She may be able to switch cards with another gamer at the table, in order to build one strong hand out of two weak ones. She may be able to distract the dealer into making a mistake while handing out winnings. She may be in cahoots with the dealer, with a side plan worked out in advance. Finally, she may simply grab someone else's winnings off the table and run.

A relatively new fixture in the casino is the virtual card game; these games take simulation to a further extent than do the computerized slot machine. While the slot machines maintain the physical reels (to retain an aura of history and to allow the gamer the illusion of physicality) the virtual card game does away with all actual movement, in favour of the videoscreen. The game sits in a computer terminal in front of a stool. After the player chooses his game from the onscreen menu, a ghostly disembodied pair of hands deals out card images onto a virtual table. The player touches the screen to draw or discard, and to set the amount he would like to bet. The game unfolds in the same manner an actual game would, and seemingly by the same rules.

However, while the game rules are the same, the virtualization allows the game to eradicate the rules of physicality. Obviously, since the machine holds all monies inside itself until winnings are paid out, it is impossible for the gamer to snatch the

winnings of others off the table and run. For that matter, there are no others. There is simply the cyborg gamer, interacting with the screen and the microchip. It is similarly impossible for the gamer to cheat by sneaking a peak at the dealer's cards; they do not even have a value until the end of the game when they are "turned over". While the backs of his(?) cards appear on the screen, they are mere placeholders. There is no other side. In an actual game, once the cards are shuffled (albeit by a random number generating automatic shuffler) there is a sense of inevitability. All cards must eventually show, and once a card has been played, it has been exhausted until the next deck is shuffled. In the virtual game, the random number generator remains, but the cards are gone. Each hand starts anew, as if a new deck was being shuffled after each hand was played in an actual game. The difficulties in identifying card counters is therefore eliminated, not by removing the counter from the casino, but by removing the object of his count. The virtual device reduces the gamer's options, while maintaining the illusion of freedom and randomness.

There is still a way for the cheating gamer to beat the simulated world of the modern casino. It is not the way of the compact mirror, or the two-way radio, or the mental system. Instead, it is the way of the virus:

> . . . we face new illnesses, those illnesses which beset bodies overprotected by their artificial, medical, or computer-generated shield. . . Just as human beings, conceived of as digital machines, have become the preferred field of operations of viral illnesses, so have software networks become the preferred field of operations of electronic viruses. . . desymbolized machine languages offer no more resistance to viral infection than do desymbolized bodies. (Baudrillard: 1996, 62-64)

The reality-deficient computer world is susceptible to attack from within by the virtual virus; while the roulette cheater must attempt to physically alter the game in some way,

the virtual roulette cheater may, if he or she finds an entrance, alter the matrix of the machine while physically changing nothing. The anti-cyborg *perruque* gamer would appear to be operating within the parameters of the matrix, since it would be difficult to detect the virtual sabotage that had taken place. However, few people have the skills necessary to successfully pull off such an attack.

If simulation does indeed replace surveillance to an extent, one should expect to see this reflected in the concentration of surveillance apparatuses in the casino. The casino is a segmented structure, with each kind of game kept with members of its own kind. Therefore, by counting the cameras directly above similarly-sized areas, a comparison can be made.

It is difficult to exactly measure anything inside the casino without appearing suspicious. Even amid the seeming chaos of flashing lights, screaming patrons, and virtual movement, one person quietly walking around taking notes will quickly be noticed, and a notebook full of information about camera placement would be sufficient evidence to detain the individual for an indeterminate amount of time. However, by frequently retreating to camera-free areas such as washroom toilet stalls to write down notes, and by occasionally sitting down at a slot machine and losing some money, it is possible to record one's observations without arousing undue attention.

To compare the level of surveillance in different gaming areas, an arbitrary size of approximately 20 feet by 10 feet was used to sample the casino floor in different locations. This size of area generally included a portion of one row of gaming tables, or a portion of three rows of slot-machine style games. The camera pods directly over each area were counted. This procedure was repeated at least twice per gaming

category, and the four gaming categories were low level slots ($.25- $10 machines), high level slots ($15- $500 machines), actual card games ($5- $20 tables), and virtual card games ($.25- $10). There are two categories for slot machines, because of the great disparity of currency value taken between the cheapest and most expensive machines, and because the high level slots were generally accorded their own area. As well, the addition of high level slots to the measurements negates the possibility that more cameras would be placed over actual games simply because of the greater value of currency that would be used at the tables.

As seen on the included chart, there is a significant discrepancy at each of the five casinos surveyed between the seat-per-camera averages of the actual card games, and those of the low-level slots and virtual card games. At Bally's casino, for example, there was an average of 12.5 seats per camera pod in the low-level slot section, and an average of 14.6 seats per camera pod in the virtual card game section. By comparison, there was only an average of 2.3 seats per camera pod in the actual card game section. The average for the high-level slots was 2.7 seats per camera pod, which does not show a significant difference. However, while the $100 slot machines were left unattended, the $10 card tables were watched by dealers and pit bosses. This pattern was observed at each of the five surveyed casinos.

This suggests that, as the level of actual interaction between player and game decreases, and the level of simulation increases, the surveillance level decreases. In other words, simulation can be employed to replace surveillance in certain situations. The information that surveillance provides concerning the movements of a subject through time and space are less valuable when those movements are rendered

immaterial by a buffering layer of artificiality.

Conclusions

It is unlikely that the Las Vegas Strip could be mistaken for any other locale on in the world. The architecture of the Strip is an oddly familiar collection of half-remembered movie sets and oversized advertisements; giant hypersurfaces extol the virtues of well-known cola drinks beside European landmarks and sacred Egyptian tombs. It is at once alien and recognizable to the media saturated North American subject.

An artificial oasis in the middle of a desert, the Strip may be one of the most controlled environments accessible to the general public. At any time, the Strip will have a population of hundreds of thousands of temporary residents, travelling along moving sidewalks and being immortalized in computer databases. An incredible amount of cash is moved through slot and change-making machines, and an equally incredible amount is handled by casino personnel and patrons. Because people fly into Las Vegas from time zones all over the world, the Strip exists in a timeless continuum; the short-cycle noise of the slot machine replaces the steady forward rhythm of the clock, and the neon lights and videoscreens replace the outdated motions of the sun in the sky.

While the Strip is a study in extremes, it can also provide insight into other, more ordinary, aspects of North American life. On an obvious level, at the time of this writing, thousands of casinos have been built or are in the process of being built across Canada and the United States, as cities attempt to bring tourist dollars into their post-industrial cores. While these new casinos do not exist in the antibiotic environment of the Strip,

they too bristle internally with computer-powered, database-linked camera pods, and contain dataveilled slot machines and virtualized gaming tables. The rise in popularity of internet gambling has produced a new simulated location where the physical casino has been eliminated completely.

But on a deeper level, simulation permeates almost all aspects of the everyday life of the average North American, as he or she attempts online financial transactions or communication, immerses his or herself in the virtual glow of the television, or works in a computerized office building or factory. The examples of simveillance that the Strip provides help illuminate the nature of the simveillance that exists outside the organized chaos of the Las Vegas casino. The stationary transparent subject working the virtual dials in a slot machine mirrors the subject working at a computer terminal in his or her cubicle; the various ID cards carried by the casino patron mimic the proposed forms of identification that may be imposed on members of the populations of Canada and the United States. The Las Vegas Strip is extreme, but by no means is it unrepresentative of greater trends in technology or legislation.

The sociology of surveillance has a rich and well-documented body of knowledge. However, for the most part, it is concerned with the actual observation and control of physical bodies. When simulation is introduced into the equation, and conventional concepts of time and space are imploded, the classical panoptic theories of surveillance are not flexible enough to retain utility.

The relationship between simulation and surveillance is complex and contradictory, but the casinos of Las Vegas are the perfect laboratories to observe this relationship. Simulation is the enemy of surveillance; the purpose of surveillance is to

identify and categorize, while simulation feigns and disguises. Thousands of people go to the Strip with the intent of fooling the cameras and security guards into thinking that they are simply doing what they appear; while at Caesars Palace, I witnessed two such people, attempting to create the illusion that they were not involved in a die-switching scam at one of the craps tables. Of course, the fact that I saw the performance for what it was indicates that they were not very successful simulators. However, hundreds of people get away with cheating the casino every year by putting on performances, the false surfaces of which fool the surveillors.

Simulation is a powerful tool of surveillance; computerized cameras that automatically deconstruct faces into a series of numbers and instantly compare those numbers to a database can identify people sooner and with greater accuracy that a human being with a binder of photographs. The virtual cells of the casino surveillance room video monitor can isolate and expose a subject to a greater degree than any physical walls, and the subject's captive image can be manipulated through time and space to a far greater degree than an unwilling subject. And when the subject's actions are long over, the image's actions remain indefinately.

Simulation can therefore replace surveillance; the immobile subject interacting with the computerized gambling device has few options other than to cooperate with the device, in the hope that the random number generator will smile upon them. He or she can not peek under a digital card, the other side of the digital card does not even exist until it is revealed. The subject involved in a virtualized experience must simply observe, and not interact. Many parents know this implicitly, as they sit their children in front of televisions and video game machines to ensure they remain stationary and

predictable.

Las Vegas also demonstates the dangers inherent in creating a sterile, simulated environment. While no player can cheat a virtual game using physical means (switching cards, peeking, being in cahoots with the dealer, etc.) It is possible to introduce viruses into computer systems which transform the programming, and the lack of physical evidence makes such operations extremely difficult to detect. The modern casino owner is far more concerned with a hacker discovering the matrix to the keno random number generator than with a slight-of-hand artist sitting at a table with sleeves full of aces.

This conclusion is being written in the weeks that followed the attack on the World Trade Centre buildings in New York City. One of the many stories that emerged from the initial flurry of information was that the American government was enlisting the help of Hollywood directors to come up with terrorism scenarios, to help the military create simulations (www.metaphilm.com/philms/siege.html). The important question is: do the directors get their ideas from terrorists? Or do the terrorists get their ideas from directors' movies? Either way, it is an excellent example of simveillance, as the American military attempts to observe and document events that have not yet happened.

The body of work that currently exists on simveillance is exceedingly small, so small in fact that this is the first time the word has been used. However, it is an important area of study to focus on for sociologists who wish to keep their studies of surveillance and social control relevant. Obviously, there is plenty of room for further study. While this paper focussed on the surveilled subject in a simulated environment,

the rapid rise of internet use has resulted in the virtualization of the *individual*, as subjects create virtual identities to interact with other cyber-phantoms in non-existent locations. Lawmakers have been experiencing great difficulty trying to legislate these non-areas, and the effect that the increasing use of cyberspace will have on theories of surveillance remains to be seen.

One thing is relatively certain: this is a time of great change. It is unlikely that the level of simulation experienced by the average North American will remain at its current level. Whether the process of virtualization will spiral out of control, or collapse under its non-existent weight is uncertain. But for sociology to ignore simulation as a powerful force is foolish.

Sources Cited

Baudrillard, Jean. (1992) *The Illusion of the End*. Stanford: Stanford University Press.

Baudrillard, Jean. (1994) *Simulacra and Simulation*. Michigan: University of Michigan Press.

Baudrillard, Jean. (1995) "The Virtual Illusion: Or the Automatic Writing of the World." *Theory Culture & Society*, 12, 4. pp. 97-107.

Baudrillard, Jean. (1996) *The Transparency of Evil*. New York: Verso.

Baudrillard, Jean. (2001) "Review of Marshall McLuhan's *Understanding Media*." *The Uncollected Baudrillard*, Gary Genosko ed. Thousand Oaks: Sage Publications Ltd. pp. 39-44.

Bentham, Jeremy. (1935) *Bentham's Theory of Fictions*. London: K. Paul, Trench, Trubner & co., ltd.

Bentham, Jeremy. (1969) *A Bentham Reader*. New York: Pegasus.

Bogard, William. (1996) *The Simulation of Surveillance*. Cambridge: Cambridge University Press.

Boyne, Roy. (2000) "Post-Panopticism". *Economy and Society*, 29, 2. pp. 285-307.

Bozovic, Miran. (1995) Introduction to *Jeremy Bentham: The Panopticon Writings*. New York: Verso.

Bulkeley, William M. (1999) "Your Face or Mine? Ask a Computer." *The Wall Street Journal*, December 7. p B1.

Burnham, David. (1983) *The Rise of the Computer State*. New York: Random House.

Davis, Mike. (1992) *City of Quartz: Excavating the Future in Los Angeles*. New York: Vintage Books.

Delarvelle, Jacques; MacDonald, John. (1984) "Resistance and submission." *Seduced and Abandoned: the Baudrillard Scene*. Andre Frankovits ed. New York: Semiotext(e).

Earley, Pete. (2000) *Super Casino: Inside the "New" Las Vegas*. Toronto: Bantam Books.

Economist, The. (2000) "Biometrics: the measure of man." Sept 9. pp. 85-91.

Foucault, Michel. (1980) *Discipline and Punish: the Birth of the Prison*. New York: Pantheon Books.

Foucault, Michel. (1994) "Two Lectures." *Critique and Power: Recasting the Foucault/Habermas Debate*. Michael Kelly ed. Cambridge: MIT Press. pp. 17-46.

Foucault, Michel. (1995) *Discipline and Punish: the Birth of the Prison*. New York: Vintage Books.

Gandy, Oscar. (1993) *The Panoptic Sort: a Political Economy of Personal Information*. Boulder: Westview.

Gandy, Oscar. (1996) "Coming to terms with the Panoptic Sort." *Computers, Surveillance, and Privacy*. David Lyon and Elia Zureik ed. Minneapolis: University of Minnesota Press.

Genosko, Gary. (1999) *McLuhan and Baudrillard: the Masters of Implosion*. New York: Routledge.

Gottdiener, Mark; Collins, Claudia; Dickens, David. (2000) *Las Vegas: the Social Production of an All-American City*. Malden: Blackwell Publishing.

Gray, Chris; Mentor, Steven; Figueroa-Sarriera, Heidi. (1995) *The Cyborg Handbook*. New York, Routledge.

Habermas, Jurgen. (1996) "Some questions concerning the theory of power: Foucault again." *Critique and Power: Recasting the Foucault/Habermas Debate*. Michael Kelly ed. Cambridge: MIT Press. pp. 79-108.

Hannigan, John. (1998) *Fantasy City: Pleasure and Profit in the Postmodern Metropolis*. New York: Routledge.

Hart, H.L.A. (1974) *Jeremy Bentham: Ten Critical Essays*. Bhikhu Parekh ed. London: Cass.

Himmelfarb, Gertrude. (1966) "The haunted house of Jeremy Bentham." *Ideas in History: Essays Presented to Louis Gattschalk by his Former Students*. Durham: Duke University Press.

Kellner, Douglas. (1989) *Jean Baudrillard: from Marxism to Postmodernism and Beyond*. Cambridge: Polity Press.

Koskela, Hille. (2000) "'The gaze without eyes': video-surveillance and the changing nature of urban space." *Progress in Human Geography*. 24, 2. pp. 243-265.

Lewis, George. (1996) *Casino Surveillance: the Eye that Never Blinks*. Las Vegas.

Lyon, David. (1994) *Electronic Eye: the Rise of Surveillance Society*. Cambridge: Polity Press.

Marx, Gary. (1996) "Electric eye in the sky: some reflections on the new surveillance and popular culture." *Computers, Surveillance, and Privacy*. David Lyon and Elia Zureik ed. Minneapolis: University of Minnesota Press.

McLuhan, Marshall (1964) *Understanding Media: the Extensions of Man*. New York: McGraw-Hill.

Mill, John S. (1974) *Jeremy Bentham: Ten Critical Essays*. Bhikhu Parekh ed. London: Cass.

Morris, Meaghan. (1984) "Room 101 or a few worst things in the world." *Seduced and Abandoned: the Baudrillard Scene*. Andre Frankovits ed. New York: Semiotext(e).

Moehring, Eugene. (1995) *Resort City in the Sunbelt: Las Vegas 1930-1970*. Reno: University of Nevada Press.

Norris, Christopher. (1990) *What's Wrong with Postmodernism: Critical Theory and the Ends of Philosophy*. New York: Harvester Wheats.

Ogden, C. K. (1935) Introduction to *Bentham's Theory of Fictions*. London: K. Paul, Trench, Trubner & co., ltd.

Staples, William. (1997) *The Culture of Surveillance: Discipline and Social Control in the United States*. New York: St. Martin's Press.

Strub, Harry. (1989) "The theory of panoptical control: Bentham's Panopticon and Orwell's *Nineteen Eighty-Four*." *Journal of the History of the Behavioral Sciences*. 25, 1. pp. 40-55.

Whewell, William. (1974) *Jeremy Bentham: Ten Critical Essays*. Bhikhu Parekh ed. London: Cass.

Zuboff, Shoshana. (1988) *In the Age of the Smart Machine: the Future of Work and Power*. New York: Basic Books, Inc.

Zwick, Detlev; Dholakia, Nikhilesh. (1999) "Models of privacy in the digital age: Implications for marketing and E-commerce." American University, University of Rhode Island.