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LIVING IN THE AGE OF CAM ERA: A GENEALOGICAL HISTORY OF CCTV SURVEILLANCE

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RESEARCH ARTICLE

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Abstract

The article will examine the genealogical development of closed-circuit television surveillance (CCTV). Using the conceptual framework of Clive Norris and Michel Foucault the article will explain the proliferation of CCTV surveillance. The article will further examine the macro and micro-level technological, political, and administrative rationalities for the global spread of CCTV surveillance. Finally, the article will explain the functioning of CCTV surveillance in open and closed spaces.

Keywords: *CCTV, surveillance, biopolitical, gaze, governmentality, big brother, surveillance-industrial complex, dispositiff, globalization, panopticon*

Introduction

Surveillance has become a routine aspect of modern life. The advent of information technology has unleashed the forces of globalization on a planetary scale. Throughout the history of human civilization, human beings have never witnessed the *death of distance* as profoundly as they do in the contemporary era. The concept of a global village has become a reality in terms of information flow, if not in the physical sense. As newer realms of human activities get connected in the circuits of global information flows surveillance is becoming more pervasive. Giddens contends that surveillance has become an integral feature of modern society. David Lyon contended that surveillance has two faces, an enabling and a constraining face (Fuchs, 2010). Conceptually surveillance is a singular term, but functionally it is an assemblage of technological, political, economic, and cultural processes and systems. The research paper will focus on the surveillance modality of closed-circuit television technology commonly known as CCTV. It will trace the genealogical development of CCTV surveillance and explain the proliferating use of the same on a global scale.

Closed-circuit television surveillance

One technology of surveillance that has been normalized in modern society, without being challenged like DNA data bank or fingerprinting, is closed circuit television (CCTV). CCTVs have become a visible symbol of modern city life. CCTVs are found in public and private spaces like roads, government offices and facilities, banks, automated teller machines (ATM), kiosks, hotels, schools, shopping malls, railways, metro stations, and even residential buildings. So much so, an author called CCTV as 'fifth utility' of modern society after water, waste, energy, and telegraphic services which in the developed world are taken for granted as elements of public infrastructure (Graham, 2002).

The developing world is fast catching up with CCTV in the urban landscape due to growing techno, political, and social discourse favoring the indispensability of CCTV. The omnipresence of CCTV in mundane life is compared with Foucault's Panopticon or Orwell's Big Brother metaphors. Such metaphors consider the gaze of CCTV as undifferentiated, disciplinary, intrusive, and threatening. The rapid diffusion of CCTV and its near acceptance as a public utility raises profound questions about the socio-technological understanding of CCTV.

Genealogical origin of CCTV

Visual technologies like photography and television were in use before the introduction of CCTV. Photography as a tool of criminal identification was used from the 19th century along with fingerprinting and anthropometry. CCTV technology, like the Internet, had a close association with the military system. The earliest documented use of CCTV technology was in Germany in

1942. The system was designed by engineer Walter Bruch and it was set up for the monitoring V-2 rockets. Two cameras were used to monitor the launch of V1 and V2 rockets. In 1941, the USA began to use a camera on the GB-4 glide bomb for the US Air Force (Abramson, 2003, pp. 6–8). By 1949, Vericon, a US government contractor began to commercialize CCTVs. The technology was nascent as cameras connected to the monitor were used for live monitoring; data storage know-how did not exist. Later, a reel-to-reel system was developed to store images, but the system was costly and inefficient as huge reels of magnetic tapes had to be stored in safe places. A major technological innovation happened with the development of video cassette recordings (VCRs) as the technology removed the need for people to monitor the screens live and stored images could be retrieved in the future. The technology attracted the attention of law enforcement agencies as well as businesses. The earliest use of CCTV for surveillance was done by the private sector; shops used it to identify shoplifters. The technology proved ineffective as someone had to observe the monitor continuously. Public perception of CCTV was different, as many thought of it as a live camera and would often stand before the camera believing they are on national television (Kroener, 2016, p. 58). Law enforcement agencies turned to CCTV in the 1970s when American society was afflicted by growing crimes, rise of racial tension, etc. Two American towns Hoboken, New Jersey, in 1966, and Mount Vernon, New York, in 1971, installed CCTV in public spaces for crime detection. Several cities followed suit but CCTV based surveillance failed. In Miami Beach, Florida, the system was dismantled due to manpower shortages and criminals used to elude themselves from the camera's range. In Hoboken, only two persons were arrested in four years. There was a reduction in crime rates in Charleston, West Virginia, but it was attributed to the gentrification project rather than CCTV surveillance (Marcus Nieto, 1997). Despite this, there was growth in the use of CCTV surveillance in the 1990s after events like the World Trade Center and Oklahoma City bombings. By 1997, CCTV surveillance was used in 13 cities for street policing (Marcus Nieto, 1997). Post September 11, attacks US tes made massive investment in domestic security apparatus. Laws like *Uniting and Strengthening America by Providing Appropriate Tools Required to Intercept and Obstruct Terrorism Act* of 2001 (USA PATRIOT Act) gave legal sanction for the spread of domestic surveillance. For instance, the Manhattan area in New York alone has 4,000 cameras; Chicago city has more than 10,000 cameras (Proctor, 2013).

The CCTV's journey in the United Kingdom was somewhat similar to that in the United States. In 1947, BBC did live coverage of the royal wedding of Princess Elizabeth and Lieutenant Philip Mountbatten. The Metropolitan Police requested BBC to allow it to monitor live coverage for the sake of deploying security efficiently. The request was turned down by BBC but the Metropolitan police was impressed by the technology. The Association of Chief Police Officers, a powerful organization with direct contact with the Home Office, and senior bureaucrats, favored the use of technology to prevent crime (Williams, 2003).In 1960, two cameras were installed in Trafalgar Square to monitor the crowd coming to watch the Thai royal family. Later, the Liverpool police began the covert use of CCTV for identifying criminals. Several buildings in central business districts were mounted with CCTVs. The Liverpool police anticipating an angry reaction from the public about the covert use of CCTVs began to run publicity campaigns to highlight the role of CCTV in catching criminals. The Home Office report did not corroborate the claims of Liverpool police (Williams, 2003). Yet, the rationalities about the efficiency of CCTVs gained 'truth' value. The police department believed more cameras could cut down the need for manpower and organizational integration can be achieved. Subsequently, CCTVs were installed in London metros and central London streets to monitor traffic and crowd. In 1985, when a seaside town hosted the annual Conservative Party meeting, CCTV was extensively used by the police. The rationale given was the fear of attacks by the IRA who had, a year earlier, attempted to assassinate then Prime Minister Margaret Thatcher. However, the public was, by and large, indifferent to the use of CCTV technology. The Public responded when in 1993, a toddler, Jamie Bulger, was killed and his body was dragged away by two killers (both were 10 years old). CCTV cameras of a mall captured the images of the innocent toddler. The images were continuously beamed by TV channels, thus, creating panic in society about rising crime rates. A day before the body of the toddler was recovered the mother of the child felt reassured about the safety of her son. She was reposing faith in CCTV images shown on the TV. The government due to the public and media uproar that followed this incident responded to the situation by announcing funding for the CCTV project. The Home Office sanctioned two million pounds for installing CCTVs in public spaces. In the same year Irish Republic Army detonated bombs in London that led to increased reliance on CCTV surveillance of public spaces and government buildings. Political discourse was building up in favor of CCTV surveillance. In March 1996, the Home Office published a white paper stating the role of CCTV in crime prevention (Kroener, 2016, pp. 64–65).

CCTV surveillance got impetus after September 11, when the Anti-terrorism, Crime, and Security Act was passed in 2001. The Act was modified further as the Prevention of Terrorism Act, 2005 (Kroener, 2016, p. 68). The act gave powers to the police to conduct electronic surveillance on a large scale.

In the developing world, China has a well-developed infrastructure for CCTV surveillance. More than seven hundred million CCTVs scan the public landscape of China. The system is known as Skynet. The CCTV apparatus in China is integrated with the social credit system which gives numerical score to the Chinese citizen for complying with the public legal code. The social credit system can affect access to public utilities like driving, shopping, working etc (Earle, 2024). India known for its functional democracy has an estimated six hundred million CCTVs. Delhi, Hyderabad, Chennai, Mumbai, and Indore rank among the top 10 — in the world outside of China, based on the number of cameras per square mile (Jose, 2024).

Reasons for the proliferation of CCTVs

The global proliferation of CCTV surveillance can be explained at the macro and micro levels. The macro-level explanation is necessary to understand the massive growth and diffusion of CCTVs in contemporary society. Technology played an important

role in the diffusion of CCTV in the 1990s. In the 1970s, CCTV was in its infancy and was a comparatively primitive technology, and consequently, police were not enthused by it. The development of the VCR in the 1970s made CCTV popular for commercial applications as it would record images that could be retrieved and played in the future. Further, multiplexing technology allows the watching of several CCTV camera images on a single monitoring screen (Longdin, 2014). The capacity of CCTV was augmented by digital video recorders (DVR) and network video recorders (NVR) as it allowed private and public actors to control cameras located at a distance and live streaming, processing and storage of data is possible with minimum costs (Longdin, 2014).

Clive Norris explains the process of diffusion of CCTV in society through four stages. First, is private diffusion when the CCTV market witnessed tremendous growth in private sectors like banks, malls, small shops, hotels, and restaurants. Second, CCTV flourished in public spaces like metros, railways, and government offices. Third, certain localities developed CCTV surveillance due to community initiatives for reasons such as the prevention of crime and it become part of plural policing whereby residential communities partake policing responsibility and coordinate with city police. Fourth, the local networks of CCTV got integrated into the wider circuits of the security apparatus (Norris et al., 2002). Foucault's concepts of governmentality and space provide better answer for understanding the growth of CCTV. CCTV surveillance is part of biopolitical security because its gaze sweeps over the multitude. Governmentality is the conduct of conduct, it is the technology of power that orients, directs, and changes the perceptions, attitudes, behavior and action of individuals, groups, or masses. Space is the milieu where the biopolitical process takes place. Space is not merely physical; it can be celestial, sacred, imaginary, dark, solid, fluid and virtual (Foucault, 2008, p. 16). However, the fluidity of virtual space cannot be mistaken as utopian (spaces of unrestrained freedom) or dystopian (totalizing discipline is enforced). The functioning of CCTV as an element of security *dispositif* depends on the government deploying certain forms of knowledge in its support. Again, governmentalities is form of power which is not absolute when it concerns space. Much depends on the interplay of power-knowledge-space. CCTV as a technology of surveillance has to be understood at the level of intention and application. At the level of intention, it is necessary to examine the macro-level processes like technological innovation, societal changes, and political discourses which together constitute spatial and discursive practices making CCTV technology a popular and acceptable truth machine in contemporary society. Next, the actual operation of CCTV can be examined to understand whether its surveillance brings disciplinary effect through its panoptic gaze or works as a biopolitical security apparatus allowing circulation of bodies using risk assessment and actuarial practices.

The fundamental reason for the popularity of CCTV is the associated rise of visual and electronic media in the 1990s. The two dimensions of globalization, namely, the death of distance (temporal compression) and the spread of visual technologies (tele-surveillance*)* were taking root in western society in the early 1990s. CCTV belonged to the genre of visual technology and its spread in society took place alongside other technologies like cable television and the Internet (Virilio, 2020, p. 13).

The media has given credence to the utility of CCTV in different ways. Both print and electronic media cover crime stories supplemented by visual images that come from mobile phone cameras or CCTVs. In India, Ajmal Kasab who was involved in the Mumbai terror attack (November 26, 2008) became a household name as the media continuously played the CCTV images of Kasab firing on innocent people. Such images create moral panic among the citizens and they begin to perceive CCTV as a truth machine and antidote against terrorism and crime (Virilio, 2020, p. 12). The Americans were also perplexed by the images of the Tsarnaev brothers who were responsible for Boston bomb blast which happened on April 15, 2013. Media raised questions about how the innocent-looking teenagers who socialize in the American lifestyle carried out the heinous act by camouflaging their bodies in anonymous urban spaces. The oblique answer was the need for surveillance to sniff out such elements through predictive policing. It was argued that only CCTV through its panoptic gaze can augment the policing powers of the security agencies (Dailey, 2013).

Another dimension of entertainment media is transforming the gaze of CCTV into a pleasure machine. Reality TV shows like Indian Idol, Big Boss, and Road Roadies make ample use of cameras for entertaining the watchers. All these shows originated in the United States and were exported across the world. Shows like Big Boss uses CCTV cameras for inducing pleasure and not for disciplining the watchers. CCTV is no longer portrayed as Big Brother watching but as Big Brother entertaining the viewers. Mark Andrejevic called it the 'kinder, gentler gaze of surveillance' (Andrejevic, 2004, pp. 95–96).

The surveillance industrial complex has played a significant role in the spread of global surveillance. In 1961 former President Eisenhower warned the American public of the unwarranted influence of the military-industrial complex endangering the liberty and democratic processes. Today, the military-industrial complex has been reincarnated as a surveillance industrial complex. Transnational security processes, the war on terror, the growing commercialization of surveillance products, etc., have made surveillance industry a profitable business. It has successfully managed to disguise its non-democratic character by wearing the facade of security providers to society. According to the *market and market* estimate the global video surveillance market is valued at around fifty-four billion US dollars (*What Are the Major Driving Factors and Opportunities in the Video Surveillance Market?*, n.d.). Privacy International claimed that global surveillance industries mostly located in western countries have sold surveillance technologies to 'the world's worst human rights abusers' (*The Global Surveillance Industry*, 2018).

Finally, the character of urban centers across the world is changing. Policing in urban areas has drawn techniques, norms, and strategies from the military. The growing military-style policing of urban centers has brought battlefield surveillance technologies in the cities. The wars fought in the mountains of Afghanistan, cities of Iraq, Libya and Syria have changed the orientation of Western military strategies. Military notions like asymmetric warfare and full spectrum dominance are used for policing the cities. Surveillance has become integral part of such policing practices. The American military used drones

extensively in Afghanistan and Iraq and the same are used by western police. Stephen Graham rightly notes, 'The crossover between the military and the civilian applications of advanced technology - between the surveillance and control of everyday life in Western cities and the prosecution of aggressive colonial and resource wars - is at the heart of a much broader set of trends that characterize the new military urbanism (Graham, 2011, p. viii).

Having highlighted the macro reasons for the diffusion of CCTV, it is equally important to understand the interface of CCTV in society. Empirical studies argue that CCTVs do not function like a panopticon machine. Lynsey Dubbeld in her empirical work examined the technical agency's role in the operation of CCTV surveillance. She looked into the material design and technological infrastructure of CCTVs used for monitoring railway stations in the Netherlands. She found one central room monitoring fifteen railway stations using one thousand cameras. The centralized monitoring station operated multiple screens simultaneously. Although the gaze of the camera is perpetual the operator's span of attention over different screens was limited. Different technical standards of the CCTV infrastructure disrupted the flow of communication between the operators and police (Dubbeld, 2005).

Hille Koskela examined the relationship between urban spaces and CCTV, concludes that the panopticon metaphor cannot apply to urban spaces. Cities, unlike prisons, are open spaces with multiple flows of people. Control in open spaces is contextual and not uniform. Surveillance in public parks and metro stations would vary in degree and nature. In cities, several actors such as traffic police, intelligence agencies, private security, local level community, etc., are involved in the process of surveillance. All CCTVs are not necessarily connected to central monitoring agencies like police headquarters. The technical efficiency of the cameras also influences the panoptic potential of CCTV surveillance. Since the city is a site of endless encounters, urban space is less fathomable and less controllable. CCTVs cannot bring entire urban spaces under absolute control, because all nooks and corners of the city cannot be brought under the gaze of cameras (Koskela, 2002, pp. 302–306)

Conclusion

In conclusion, CCTV surveillance is comparatively more effective in enforcing discipline in closed spaces where level of mobility is low. In open spaces, the surveillance techniques are based on risk assessment, actuarial practices, and differentiated gaze. The CCTV gaze in biopolitical surveillance allows the smooth movement of a multitude by identifying threats based on statistical techniques like age groups, racial and ethnic categories, gender, etc. Empirical observations show CCTV surveillance does not bring into practice Orwellian state or even Orwellian enclaves. Like the expansive horizon of CCTV, cyber surveillance functions on a global scale.

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