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Elective Affinities in the Engineering of Social Control: The Evolution of Electronic Monitoring

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Abstract

Electronic monitoring (EM) is now a widespread practical resource and technique of community supervision/control in corrections. It is argued that an "elective affinity" in the conjuncture of specific political, technological, economic, and ideological forces, conditions, and interests acts to facilitate the institutional integration of EM into American correctional control practices. Pursuing the elective affinity argument the paper describes the converging forces, conditions, and interests enabling the institutional integration of first generation EM technology as a practical resource for correctional control. These systems are currently being deployed primarily to verify curfew compliance. An argument is then made for a convergence of social forces and interests likely to promote the institutional integration of second generation EM technology, accomplishing the social control of offenders through geographical tracking and remote monitoring of physiological states. The paper concludes by briefly exploring how EM might be theoretically located within the sociological study of surveillance.

Since institutional inception in Florida in 1984, remote electronic monitoring (EM) of offender populations has increased significantly in American corrections. This has occurred within county, state, and federal jurisdictions (see Hoshen, Sennott, and Winkler, 1995; Lilly, 1992a, b; Renzema and Skelton, 1990). Evidence of this increase is available from a comparison of EM units over the eight years, 1986-94: Renzema and Skelton (1990: 12) reported 95 monitoring units (daily count) for 1986 (see also Schmidt, 1987, 1988), while eight years later (1994) this rapidly expanding Information Technology (IT) market sector involved a daily count of 17,548 units (Beck, Brown, Gilliard, Snell, Stephon, and Wilson, 1996: 41).

The current first generation of EM technology and its configuration of IT components is restricted to monitoring a single location and is almost exclusively employed to monitor - and therefore verify- compliance with curfew restrictions imposed in programs of house arrest and Intensive Probation Supervision (IPS). It is noteworthy that first generation EM systems provide a narrow and restricted data and information base, largely due to the technical limits imposed by the standard three-component EM configuration (see next section). The upshot for social control is that reliable monitoring only generates data verifying offender presence in the home. The chief design limitation is that the system produces no useful information about offenders' whereabouts beyond the home, except to report that the person is absent. This technically-based limit will disappear over the next few years in the wake of second generation EM systems that are currently undergoing development and testing (see Hoshen et al., 1995; Winkler, 1993; cf. Coffin, Prokoski, and Riedel, 1992). Second generation EM technology will enable pinpoint geographical tracking, a possibility that considerably expands the scope of remote monitoring. In its application in corrections the result will be that spatial or location monitoring can, in principle, occur anywhere an offender moves. Thus, the uncertainty concerning offender whereabouts that is spawned by the functional and design limitations of first generation technology is eradicaded by second generation EM systems (at least in the system described by Hoshen et al., 1995).

First generation monitoring technology has clearly enjoyed extensive commercial and correctional system support as the numbers attest. Corbett and Marx (1992) have referred to a discernable "electronic monitoring movement" in American criminal justice and corrections systems. Blomberg, Waldo, and Burcroff (1987: 169) have called this phenomenon a major program movement... [that] has variously been termed intensive surveillance, house arrest, community control, electronic surveillance, home incarceration or home confinement. These authors were referring to a range of community-based programs, collectively called "intermediate punishments" or "intermediate sanctions" (Petersilia, 1987 ; Rush, 1987; McCarthy, 1987; Byrne, Lurigio, and Petersilia, 1992), that are now widespread in American corrections. While the suggestion has been made that the EM movement within corrections is merely a passing fad, Lilly (1992a) has made the case that EM is now firmly established in the "corrections-commercial complex" (see also Lilly and Knepper, 1993; Christie,
The paper examines this electronic monitoring movement with a particular focus on the political, economic, ideological, and technological conditions, forces, interests, and processes that have enabled its expansion in American criminal justice and corrections. Among the enabling conditions of this new technique of social control in the contemporary correctional complex are: political economies of fiscal crisis and restraint (Flynn 1986; Blomberg, Waldo, and Burcroff, 1987; Scull, 1984); technologies of remote communication and control (Ingraham and Smith, 1970, 1972; Schwitzgebel, 1967, 1968, 1970; Lilly and Ball, 1987; Gable, 1986; Vaughn, 1986; the ideological imperatives in an" era of incapacitation and structured discretion" (O'Leary, 1987; Rush, 1987) and the accumulated systemic consequences of severe prison crowding (Blomberg, Waldo, and Burcroff, 1987; Friel and Vaughn, 1986). The argument is that the electronic monitoring movement has arisen out of and is sustained by a convergence and integration of these forces, conditions, and interests.

Weber's analytical concept of "elective affinity" is useful for deciphering the interpenetrations of" ideas" and the economic and social interests that can usefully be served by those ideas. Weber (1930) proposed that there is an elective affinity between important ideological, economic, and social interests, conditions, forces, and processes constituting the development of rational capitalism. What is being proposed in this paper is that there is a formally similar kind of elective affinity, albeit involving very different social and historical conditions than Weber analyzed.

Gerth and Mills (1946: 62-63) have contrasted Weber's" sociology of ideas and interests" to Marx's (1867/1967) conception of how ideas and interests are related. As Gerth and Mills pointed out,

Weber refuses to conceive of ideas as being 'mere' reflections of psychic or social interests... The decisive conception by which Weber relates ideas and interests is that of 'elective affinity,' rather than 'correspondence,' 'reflection,' or 'expression'... For Marx, ideas 'express' interests... For Weber, there is hardly ever a close connection between the interests or the social origin of the speaker or of his following with the content of the idea during its inception... There is no pre-established correspondence between the content of an idea and the interests of those who follow from the first hour. But, in time, ideas are discredited in the face of history unless they point in the direction of conduct that various interests promote. Ideas, selected and reinterpreted from the original doctrine, do gain an affinity with the interests of certain members of special strata: if they do not gain such an affinity, they are abandoned... Both the ideas and their publics are seen as independent; by a selective process elements in both find their affinities.

This paper employs Weber's concept of elective affinity as a way of conceiving the relationship of ideas and interests pertaining to the integration of EM technology into the practical/technical apparatus of social control. The paper is organized into three parts, with the first section describing the convergent social conditions, forces, interests, and processes which have enabled institutional incorporation of first generation EM technology into correctional control practices. Drawing upon that analysis, the second part of the paper considers the convergence of forces that will legitimize and augment, support, or lead to the institutional absorption of second generation EM technology into correctional and policing practice. The concluding section briefly proposes how EM technology and its use might be theoretically located within the sociological study of surveillance.

**First Generation EM Technology: converging forces enabling institutional integration**

Current first generation EM systems are typically composed of three hardware components that monitor offenders in one location, usually the home. In the most prevalent "continuous signalling" system configuration, one system component, the radio frequency (RF) transmitter bracelet attached to the offender, emits coded RF signals that alert corrections officials as to whether the offender is within range - typically up to five hundred feet - of the home telephone-attached receiver-dialer, a second system component. This is the first level of monitoring in this two-level information processing system. The receiver-dialer detects and time-stamps, then stores and subsequently communicates RF signal status (i.e., presence/absence of RF signal in relation to time). When the receiver-dialer subsequently links to the correctional agency computer (the third system component), the second level of monitoring takes place. The central computer is programmed to compare the incoming digital records from the various receiver-dialers with the curfew schedule specific to each unit, thus verifying curfew compliance, in some cases for thousands of offenders state-wide.

No matter how large or small the scale of future applications of this EM system configuration in corrections, the first twelve years of judicial and correctional use of EM - mainly in house arrest programs in the US (1984-96) - represents one phase of what likely will be a many-phased process of development and utilization in criminal justice. Lilly and Ball (1987: 362) identified three distinct phases of the development and use of EM (as of 1987):

This alternative to imprisonment has thus far undergone three distinct stages covering more than 20 years. The first phase saw advocates of electronic monitoring exploring it as an idea that could radically alter the conventional wisdom of traditional imprisonment. This stage began in the early 1960s and concluded in the mid-1970s; it contained little actual electronic monitoring. The second stage, mid-1970 to 1980s, saw little interest expressed in electronic monitoring. The third stage began in 1983 and witnessed an expanded interest in the merits of electronic monitoring, including experimentation, implementation, the creation of legislative guidelines, and evaluative research.

Close scrutiny of these patterns of EM development and institutional integration yields important clues in regard to changes in the requisite enabling conditions underpinning and constituting the electronic monitoring movement. An important question arises in relation to Lilly and Ball's second stage (approximately 1975-83): after experimental demonstration and vigorous promotion by developers
In the wake of the riot, the state earmarked $40 million for new facilities and a consent decree was prepared to go to in order to change their circumstances. Over $20 million being experienced by prisoners in the intolerable living conditions in their overcrowded prison. It also showed the lengths prisoners were going to in order to change their circumstances. Over $20 million was being experienced by prisoners in the intolerable living conditions in their overcrowded prison. Although overcrowding results in intra-institutional pressures in the form of violence and security problems. These result when prisons are subject to court injunctions requiring reduction of overcrowding.

The evident hiatus - Lilly and Ball's second stage - can be interpreted as indicating that extant economic, technological, and ideological conditions at that time prevented initial institutional integration of EM. There are two main reasons why Dr. Schwitzgebel's machine (Fox, 1987) did not immediately become a surveillance modality in corrections, despite zealous advocacy by this Harvard psychologist. Compared to contemporary technologies, Schwitzgebel's experimental tracking system - a small scale telemetry system incorporating a modified missile tracking device - was crude and limited in application. The available hardware was cumbersome and the observational grid or field was limited to a few city blocks. The ability to cover a larger geographical area such as a large urban region, would have required considerable infrastructure investment, in addition to requiring subjects to wear bulky monitoring devices. The cost to put such a system in place would have been considerable, a matter Schwitzgebel acknowledged at the time (Schwitzgebel, 1970).

While the cost and technical barriers were perhaps the most significant impediments to the programmatic development and institutional integration of EM at this time, we cannot ignore the ideological context of the fallow period of EM development. The ideological shift towards neo-conservative policies in the criminal justice and corrections systems took place over the course of the 1970s. This ideological shift carried with it great scepticism about or outright rejection of rehabilitation as a central or practicable correctional goal (Allen, 1981; Cullen and Gilbert, 1982; Martinson, 1974; Sechrest, White, and Brown, 1979; Zimring and Hawkins, 1995), while at the same time poffering to correctionalists a get-tough, containment and control ideology, backed up by criminal justice reforms - including sentencing reforms - in what was referred to as a" New Justice" (Aaronson, Hoff, Jaszi, Kittrie, and Sarri, 1977). These changes have had a significant effect on probation and parole roles and functions (Moran and Linder, 1985; Messenger and Berecochea, 1991; Christie, 1994).

The intensive probation supervision and EM movements (Clear and Hardyman, 1990; Blomberg et al., 1987; Corbett and Marx, 1992) served to ideologically reconceive the goals of probation, parole, and the community supervision function to be tough on offenders and protective of society. A distinctive feature of these new programs is that they eschew rehabilitation in favor of engineered and technical solutions to the problems of supervision and social control in a community context. Smith (1991: 114) has described this development as it affected parole programs in California.

In the late '70s there was a shift in California parole's role from rehabilitation and service to control and enforcement. This was driven by changes in public attitudes and in the law defining the role of prison and parole to be punitive rather than rehabilitative. Further, there was a serious attempt to statutorily abolish parole. It became clear that if parole was to survive, it would have to take a more aggressive approach.

This shift in emphasis from rehabilitation to control, with the "dominance of the crime control model" (Lilly and Ball, 1990: 87), represents a significant change in correctionalists' understanding of their role, function, and philosophy. It also marked a significant change from Schwitzgebel's earlier emphasis on the rehabilitative purposes of remote communication. His communication design was interactive, with the melding of technology and social practice being aimed at two-way communication - between a therapist and the subject offender - in order to achieve the goal of rehabilitation. Unlike current applications of EM technology, in Schwitzgebel's system the observer was conceived as a therapist, not a surveillance, control, or monitoring agent. Indeed, he stated his belief that remote monitoring would not be therapeutic if its sole function was one-way monitoring and not two-way communication (Schwitzgebel, 1970). But how could remote monitoring achieve what interpersonal relations by way of counselling, therapy, etc., could not? While Schwitzgebel demonstrated that remote monitoring was possible, he failed to show any clear therapeutic possibilities for his "behavioral rehabilitation system", a circumstance that could only reinforce the conclusion of rehabilitation sceptics of the time that" nothing works" (Martinson, 1974). In effect, Schwitzgebel gave his behavioral electronics system an ideological casting at odds with the retributive "New Justice" ideology that was diffusing into judicial and correctional policy and programming at about the time he was promoting his patented behavioral rehabilitation system (Schwitzgebel, 1969c).

According to Friell and Vaughn (1986: 3), "it was not until the prison overcrowding problem created an unprecedented demand for diversion that market conditions were attractive enough to encourage the private sector to make the technology commercially available." By the early 1980s the criminal justice reforms enacted during the previous decade resulted in stiffer sentencing policies that in turn generated prison overcrowding on a scale hitherto not witnessed (Zimring and Hawkins, 1991, 1995; Christie, 1994). This outcome, of course, meant fiscal and political pressures to build yet more prisons. Further legal pressure was added for a speedy resolution of the crowding crisis when growing numbers of prisons were subject to court injunctions requiring reduction of overcrowding.

Overcrowding results in intra-institutional pressures in the form of violence and security problems. These result when prisons significantly exceed their architecturally designed-for and stipulated population size. The bloody riot and massacre of thirty-three segregated prisoners in 1980 at the New Mexico state prison in Santa Fe is symptomatic of the levels of anger, frustration, and rage being experienced by prisoners in the intolerable living conditions in their overcrowded prison. It also showed the lengths prisoners were prepared to go to in order to change their circumstances. Over $20 million was required to repair the riot damage. A subsequent judicial consent decree provides strict prison management guidelines that are judicially enforceable in regard to prison population size, food quality, and due process in the treatment of prisoners. In the wake of the riot, the state earmarked $40 million for new facilities and consent decree-required changes in prison operations. All of these strains on corrections resulted in substantial pressure for change that could not be ignored.
However useful or innovative Schwitzgebel's telemetry system may have been, its failure to lead to program development/institutional integration reflects its technological limitations, costliness, and ideological incompatibility with the influential neo-conservative New Justice discourse emphasizing punishment, control, and just deserts (van den Haag, 1975; Wilson, 1975). By the early 1980s, an entirely new conjuncture of social forces had taken shape, the principle effect of which was to discount rehabilitation as an important correctional objective. Where Schwitzgebel conceived the surveillance technology as enabling remote, uni-directional communication between therapist and client, the later correctional and commercial advocates of community-based programs lauded the EM surveillance technology as a powerful uni-directional means of offender monitoring and control. This is an important ideological shift in how the surveillance technology was eventually to be conceived, as well as the correctional objectives advocates recommended it be directed to achieving. In this ideological climate, EM is a symbol of "toughness" for probation agencies under attack for what was perceived as inadequate community supervision and control (Corbett and Marx, 1992; Clear and Hardyman, 1990). Thus, ideas supporting institutional integration of EM fall in line with the crime control model, reflecting an elective affinity of "ideas and interests."

EM surveillance technology was touted as a prospective remedy for prison crowding, a problem that demanded correctionalists' immediate and concerted attention (Conrad, 1985; Schwitzgebel, 1970; Vaughn, 1987; Johnson, Haugen, Maness, and Ross, 1989). While Schwitzgebel's EM system provided questionable therapeutic efficacy (as noted previously), more crucially there existed no comparable institutional crisis for which his behavior rehabilitation system offered to provide a solution. In this circumstance, it is not surprising that the major impetus for the eventual development and testing of EM - early in 1983 - came from within the correctional system itself and not from a university-based academic psychologist (see Gable, 1986).

By the early 1980s, the technological infrastructure necessary for remote monitoring was substantially developed or in place. Communications webs and resources had proliferated enormously in the previous decade, enabling automated communication between computers and remotely placed receiving and microprocessor units. Digital telephone networks allowing data to be exchanged between computers had replaced earlier analogue systems. At this time the costs for computer microprocessors had decreased significantly, allowing their broad social diffusion in the form of powerful desktop computers. Furthermore, computer and other types of hardware used in electronic monitoring had undergone continuous improvement as high-technology vendors sought to compete for the EM market in corrections. "[B]y 1983, workable active monitors had been developed by Michael Goss in Albuquerque, New Mexico, and Thomas Moody in Key Largo, Florida" (Ford and Schmidt, 1985: 2).

While house arrest had been employed on a limited basis in juvenile corrections in the early 1970s (Ball, Huff, and Lilly, 1988), by the late 1970s and early 1980s, as the consequences of get-tough sentencing policies began to register their overcrowding effects in corrections, the reform direction of policy became clear: control and punishment would continue in new programs of house arrest and intensive probation supervision in the community. The arrival of EM in 1983 (in New Mexico and Florida) generated considerable interest within corrections since it promised an intensification of surveillance. Ideologically, this was significant because, with EM, corrections agencies could offset the public perception that community-based sanctions - like traditional forms of probation and parole that lacked effective community supervision - failed to be punitive to offenders and protective of the public. A program using EM carried the prospect that correctionalists could alter the public perception that community supervision was inadequate and, in the process, legitimize the fledgling community-based programs by promising close monitoring and control of offenders.

Thus, EM underwent institutional integration into corrections, beginning in 1984, because of its compatibility with containment and control objectives in existing and evolving community-based punishment/control programs. More importantly perhaps, EM has considerable ideological utility in the management of correctional reform, inasmuch as it serves to legitimize the community-based punishment programming direction taken - tough on criminals and protective of the community. The correctional discourse of electronically mediated surveillance presented the enticing prospect of reinforcing New Justice precepts, while also accomplishing organizational efficiencies and privatization of social control functions. Furthermore, proponents framed EM and IPS programs as both a punitive and humane treatment of offenders - punitive because both EM and IPS programs assist in boosting the intensity of supervision (and therefore control), and humane because offenders are (allegedly) diverted from overcrowded and potentially dangerous institutions that serve inadvertently to reinforce criminal skills and identities.

Correctional reform advocates - in both commercial and corrections sectors - reflected their common interests in regard to the new intermediate punishment programs. They did this via ideological consensus around the themes of continued toughness on crime (retribution, punishment, crime control, containment), humanitarianism (emphasis on personal responsibility, reducing crimogenic influences, jobs and families stay intact), and the economic rewards claimed for reforms (cost effectiveness, privatization, user-pay). And as noted above, the early assumption was that intensification of community supervision, as with EM, would help to reduce the crowding problem (Conrad, 1985; Flynn, 1986). Here, it seemed, was a social control technique that could be all things to all people.

The events, circumstances, and processes described above reflect the social interests, forces, and conditions enabling EM technology to become institutionalized and thereby embedded within, or integrated into, the practices of social control. This embedding process of instruments and other technical resources of remote supervision serves the generalized objective of control. With EM, control agents are able to remotely produce certainty about the offenders in their charge; especially certainty about their location and physical condition status (e.g., alcohol/substance abuse monitoring). The central basis for accomplishing this certainty is the availability of remote, electronically mediated information.8

Schwitzgebel's efforts to promote EM fell upon the shores of economic and technical impracticality. Further technical and Information Technology infrastructure improvements were necessary before economies of scale for information production and management became available (early 1980s) and practicable for the tasks of correctional control. Furthermore, by about this time prison crowding, itself the result of get-tough criminal justice policies enacted from the mid-1970s onward, reached crisis proportions. Clearly, the ideological climate was ripe for development and use of these kinds of instruments of social control because crowding and the prospect
of court-controlled prisons (through judicial consent decrees) gave correctional policy-makers little choice but to expand alternatives that would help them to manage the immediate, acute problems of prison crowding and give breathing room as new rounds of prison construction were undertaken. A condition of this development, as we have seen, seemed to be making probation and other community supervision functions more punitive and stringently controlling. Prison crowding is a key condition and force that drives the search for alternatives to incarceration, while economic pressures simultaneously demand efficiencies in resource utilization - mete out sanctions, but do it cheaper - which in some cases has meant the privatization of monitoring and control functions.

In contrast to Schwitzgebel's formulation of EM as a therapeutic tool, the contemporary ideological and discursive recasting of EM as a punitive instrument of automated remote observation and control reflects an elective affinity among economic (costs of control) and material (technology) interests and the commercial-correctional discourses that legitimize EM as a rational response in the light of loud calls for harsher and more retributive punishment/control. Thus, for prison crowding EM is ameliorative; within the framework of fiscal crisis and tight budget pressures, EM is a good economy of penalty; within the containment/control ideology of the New Justice, EM is a technologically relentless and punitive supervisor.

Second Generation EM Technology: community threat from dangerous offenders

The further diffusion of EM into corrections and policing is likely to follow the pattern evident in the integration of first generation EM technology: the informational and communicative possibilities made available through IT will be absorbed into policing and correctional control practices where political pressures combine with economic rationalization - under the banner of "correctional reform" - to recommend IT as a technical solution to systemic problems of social control.

Second generation EM system designs will overcome the inherent monitoring limitations imposed by first generation systems: once the offender leaves the home, ostensibly to go to work or to some other approved activity (e.g., school, therapy, etc.), uncertainty about offender whereabouts is reintroduced. Within current programs of house arrest this uncertainty about offenders' whereabouts beyond the home is typically addressed "manually" by control agents through random spot checks or by otherwise attempting to confirm away-from-home activities (e.g., by doing telephone checks). Proposed second generation EM technology, as noted at the outset, will enable offender tracking, something that permits corrections officials to remotely verify an offender's specific geographical location at any time. Technically, the IT developments that will create second generation EM systems will produce a more comprehensive and dynamic processing of offender-generated data and information via remote monitoring of his/her subject-target attributes (e.g., real-time or near real-time tracking, precise physical location verification, verification of specific physiological parameters).

Hoshen et al. (1995: 29) indicate that with present technology, position-fixing - pinpointing an offender's location - may be established in two main ways:

One method uses the locator as a receiver, to process inputs from many sources, such as Global Positioning System (GPS) satellites, with position data sent back to a monitoring station through a return data link. The second uses the locator as a transmitter, whose signal is used by several remote receiving sites to calculate its place of origin by measuring the phase, time of arrival, roundtrip range, or bearing angle of the signal.

Many technical problems in the development process have yet to be resolved (Hoshen et al., 1995). Pilot testing will be needed to assess reliability within corrections and policing work. Furthermore, the new, more extensive monitoring capability available through second generation technology will pose some key questions to correctional policy-makers and program designers. First, are offenders who have been monitored by first generation technology - up until dissemination of second generation systems - to be shifted to the more comprehensive monitoring? One argument against this policy would be that second generation EM technology would be unnecessarily excessive for the generally low risk offenders who constitute existing home confinement program case loads and that remote curfew verification and substance abuse testing is sufficient for these kinds of offenders.

More decisively perhaps for initial future deployment, the newer technology will, in the beginning phases of correctional and policing use, be more expensive than first generation systems and this will likely lead to a rationalization of use" only for those offenders who require it." For practical purposes, this will mean a differentiation of more dangerous or risky offenders who warrant the added attention and cost. It is unlikely that most of the current sorts of home confinement offenders will be shifted to more expensive and comprehensive geographical monitoring when it becomes available. However, this could change as the cost of information continues to go down and storage, processing, and transmission capacities continue to increase (i.e., according to Moore's law - see Hutcheson and Hutcheson, 1996).

One central public policy question here will be, what kinds of offenders would be considered appropriate for this sort of comprehensive geographical monitoring/tracking? Hoshen et al. consider a number of different types of offender, all of which fit into the higher risk/more dangerous category: stalkers, child molesters, drug felons, and sexual offenders where another adult is victimized. Such offenders can be subject to "exclusion zone" rules, which can in turn be verified by second generation EM systems.

The question of appropriate offenders for EM tracking systems also leads to the further question, and the theme of this paper, namely what social forces will lie behind and support the integration of second generation EM systems into correctional programming and practice? It is the author's prediction that the next generation of EM technology will become integrated into correctional, policing, and criminal justice sectors as these institutional systems respond to political and ideological pressures from various social constituencies lobbying for criminal justice and correctional/policing system reforms. Grass roots and populist movements are organizing around these types of offenses - violence, criminal harassment, sexual offenses - and their related issues of public safety, community protection, victim's rights, and "just punishment" for offenders (Viano, 1987; Smith and Huff, 1992).
Whereas prison crowding was, as a social condition, the main driving force for the institutional incorporation of first generation EM technology, the chief driving force promoting incorporation of second generation EM technology into correctional and policing practices will be a new set of converging social forces. Chief among which will be community mobilizations and popular pressures from citizens' grass-roots reform groups whose aim is to change public policy in the criminal justice system, including sentencing and correctional control policy. Smith and Huff (1992: 212) contend that “the victims' rights movement promises to be a prominent force in the reshaping of American criminal justice in the 1990s.” The expanding ranks of victim activists” has served to highlight the general importance of 'victims' as an effective political symbol and as a rallying point for a variety of grievances, dissatisfaction, and political agendas” (Viano, 1987: 440).

Moreover, the growing mobilizations of crime victims tends to focus on specific crimes, victims, and crime control policies (Viano, 1987). If, as Smith and Huff (1992: 444) argue, the expanding populist victims' rights movement” has been co-opted by that of the supporters of the crime control model of criminal justice,” then it is likely that public policy reform will continue to reflect the neo-conservative themes of containment and control.

The coming into existence (early 1980s) and continued growth of the conservative-based victims' rights movement reflects a sense of public threat or danger experienced in association with offenders who pose a perceived public danger and who constitute cases where existing criminal justice and social control policies have failed or are failing, e.g., offenders who persist in violating restraining orders (i.e., stalkers, see Cordes, 1993) and unrehabilitated, predatory sexual offenders who have served their sentence and who, by statute, must be released back into the community. The latter offenders are increasingly being subject to sex offender registration and community notification laws (Lieb, Maki, and Slavick, 1996), both of which represent an intensification of offender monitoring and control. Sexual offenders are also subject to pressures to enter treatment programs (where they are available), but as Furby, Weinrott, and Blackshaw's (1989: 25) review of methodologically sound recidivism studies indicates, recent efforts in psychological treatment of sex offenders provides “no evidence that treatment effectively reduces sex offense recidivism.” Clearly, many uncertainties remain in regard to the efficacy of rehabilitation and control of sex offenders.

Assuming that the currently failing policies continue to be inadequate in managing and controlling stalkers and sexual predators, reform pressures can only increase over time as successions of violent tragedies build an institutional base of pressure from populist victims' rights groups advocating criminal justice and correctional system reforms. Given the failure of preceding control policies and no effective public policy remediation of the underlying causes of these kinds of criminality, the cumulative effect of populist pressures will be to challenge current policies and pressure criminal justice system planners to develop solutions to the problems of social control presented by these offenders. Increasingly, the response by state officials is to develop engineered solutions to these problems of social control (Marx, 1995).

A problem of governance faced by the contemporary state - in the service of its legitimacy - is that its agencies of criminal justice, corrections, and policing, represent the public policy actions they take as responsive to popular demands for better public safety, toughness on crime, and more effective supervision/control of offenders. The public policy discourse representing EM programming depicts it as the implementation of rational planning that employs innovative technical means to effect the projects of control it is mandated to develop, implement, and maintain; this being accomplished in the context of tight budgets, crowded prisons where operations are controlled by consent decrees, and where community supervision caseloads among probation officers exceed the limits of effective supervision. The remote monitoring of offenders through the deployment of EM systems offers the possibility of an engineered solution for offender populations that present special problems for corrections and police systems of surveillance/control. Grass roots and popular pressures for criminal justice system reforms constitutes an important spur - and one might say, a foil for state-sponsored action - for system reforms affecting existing institutional components. Presently the EM movement has considerable support from within the criminal justice and corrections systems, as well as in the high-technology manufacturing and related service sectors (Lilly, 1992a, b; Lilly and Knepper, 1993; Christie, 1994). These institutionally-based sources of power offer practical, juridical, economic, moral, and ideological support for continued and expanded use of EM technology in policing and correctional control. As was the case with first generation technology, the next generation of EM technology will be legitimated mainly via claims of community protection through reliable and effective control of offenders in the community. Related to the latter, the most important legitimating basis for the next generation technology will be its claimed efficacy in controlling high risk offenders (e.g., stalkers and sexual predators).

Legitimacy and support for second generation EM technology will likely feature an emphasis on technical issues and problems that imperil the reliability of EM systems. Technical problems that now compromise the reliability of first generation systems will undoubtedly be encountered in practical applications of second generation EM technology. While technical difficulties with first generation systems have been noted among analysts of programs (e.g., Friel, Vaughn, and de Carmen, 1987; Ball, Huff, and Li ily, 1988, Jolin 1987), routine technical problems do not pose significant public security threats given that “low risk” offenders make up the great majority of EM offender caseloads. What remains to be seen is how specific sorts of technical anomalies will affect the continuous monitoring of offenders using second generation technology. Given the prediction that potentially dangerous classes of offender will be earmarked for second generation tracking systems, what threat to public security will attach to technical anomalies and lack of reliability in second generation EM system functioning? The legitimacy of second generation EM systems will hinge on their demonstrable reliability and a planned response to potential threats to public safety given the obvious possibilities of intended (e.g., sabotage via hacking) and unintended technical problems cropping up.

Geographical tracking systems will promise to solve the current problems of location verification that limit the uses of first generation EM technology to a curfew compliance monitoring function. Second generation EM technology will claim to remove uncertainty about the precise whereabouts of riskier classes of offender, with a reliability sufficient to render their control both comprehensive and effective. This will be the promise, at least. Only the future use of tracking technology will provide the true test of its effectiveness as a means of controlling these types of offender.
Conclusions

This paper has described the historical convergence and elective affinity of the main social forces, conditions, interests, and processes associated with the integration of EM technology into social control practices. It is clear that underlying the public policy and institutional reforms this has entailed - or, as predicted, will entail - is a fundamental shift in conceptualization of the business of corrections and, more generally, the aims of social control practices in relation to criminals and criminality. It would appear that a necessary prerequisite in eschewing labour-intensive rehabilitation in favour of technology-intensive control is the denigration of the former, while simultaneously espousing the virtues of Information Technology to provide informational certainty about, and therefore control over, offenders. This involves a focus on factors associated with offenders that can be measured and documented without regard for the vagaries of human will that are necessarily engaged - or not, as the case may be - in the rehabilitation model for achieving compliance, conformity, normalization, etc. EM does not calibrate offenders’ intentions, but data processing and hardware configurations of EM systems do inform control agents about relevant violations of monitoring directives that restrict movement or prescribe particular behaviors.

It is evident from its social control uses that EM is both a commodity and a resource (Schiller, 1988). EM is a resource by virtue of its deployment in corrections and policing as a technique of monitoring and social control. The technologically provided ability of (microprocessor-controlled) remote communication also reflects the key elements that make EM a commodity. EM has a use value which resides in its informational product: the certainty and verifiability provided by information - that offenders are complying with monitoring directives. The exchange value of EM is the cost to produce that data and information-mediated certainty.

The question remains, though, how can sociological theory be brought to bear on the phenomenon of EM in corrections? While the sociological study of surveillance is itself relatively new, Lyon and Zureik (1996: 5-6) identify three principal theoretical perspectives currently being employed that may be summed up in terms of their leading motifs: capitalism, rationalization, and power. These motifs will be evident in the following discussion. The aim of this brief discussion is to propose some theoretical avenues for locating EM that emphasize the use of the new Information Technologies to accomplish surveillance (Lyon, 1994; Lyon and Zureik, 1996; Gandy, 1989, 1993; Dandeker, 1990; Giddens, 1985).

Critical theory and political economy approaches offer fruitful theoretical avenues for assessing the significance of the deployment of IT for the purposes of social control. The use of first generation EM technology described previously suggests the relative autonomy of specific institutional and ideological forces and interests whose conjunction yields the legitimacy and hegemony of state power to govern and regulate society at the behest of capital. As Lyon (1994: 25) observes, “for Karl Marx, surveillance was located within struggles between labour and capital in the business enterprise and the capitalist system.” Following from this, as a practical condition for effective social control in capitalist societies, state agencies engage in elaborate activities of surveillance, constructing as they do an extensive organizational mechanism for enforcing production/consumption relations within their populations (Dandeker, 1990; Gandy, 1993; Giddens, 1985). Where EM is concerned, this organizational mechanism is constituted in the institutional sectors of the corrections-commercial complex (Lilly and Knapper, 1993; Lilly and Deflem, 1996).

Webster and Robins (1989: 332) argue that the “history of capitalist industry... has been a matter of the deepening and extension of information gathering and surveillance to the combined end of planning and controlling the production process, and it is into this context that the new communications and information technologies of the 1980s are inserting themselves.” The guiding framework of “plan and control” decision-making is provided by scientific management and Taylorist principles and these are applied to the organizational rationalization of production. Of course, the planning and controlling of consumption is subject to similar principles (Robins and Webster, 1988; Gandy, 1989, 1993; Beniger, 1986).

The relevance of the plan and control edict for formal mechanisms of social control is that the problem populations (Spitzer, 1975, 1979) created by contradictions and structural disorder in late 20th century capitalism are rationalized according to system-level decision-making. This has meant privileging control over other more costly (i.e., labor-intensive) methods for producing behavioral compliance with social norms. With the addition of the control-oriented intermediate punishments the differentiation of the criminal justice sanction has created a larger set of correctional control options which present a number of apparent utilities: allowing for the economic rationalization of punishment, establishing more intensive control of offenders in the community, and affording greater flexibility in managing a diverse offender population.

Another fruitful avenue toward a theoretically integrated approach is in terms of the legacy of Foucault, particularly through studies of governmentality (Burchell, Gordon, and Miller, 1991), use of the strategical-relational model of power (Dreyfus and Rabinow, 1983) and descriptive analysis of the “infinitesimal mechanisms” that constitute the techniques, tactics, and instruments of discipline, control, and normalization in historically emergent disciplinary societies (Foucault, 1979, 1983). Here EM surveillance technology represents technically-based organization and administration discourse/practices arising in liberal and neo-liberal rationalities of government (cf. Poster 1996; Barry, Osborne, and Rose, 1996). The use of EM for purposes of formal control is symptomatic of the wider societal deployment of IT as a tactic of governance, i.e., bio-politics of regulation and social control at individual and aggregate levels (Dreyfus and Rabinow, 1983).

As IT further diffuses into everyday life and comes increasingly to make up the conditions and contexts of work, leisure, entertainment, social experience, etc. (Bogard, 1996), as one of its many effects it introduces a new possibility into technical systems that enables remote observation and monitoring: what Zuboff (1988) refers to as “informating” (i.e., to informate). Informating occurs in computer-mediated and controlled environments. A human subject's actions are recorded and stored as an integral part of the operation of the IT systems whose functional operation constitutes the work context. Thus, the performance of data entry and telephone reservation workers' customer service calls are measured, encoded/encoded, evaluated, and communicated, a process whose outcome is intended to
reinforce and extend the relations of power, control, and discipline in the workplace (Clement, 1988). The electronic "footprints" that are produced by microprocessor technologies when an individual is made a part of the information processing system - as with EM - constitutes the fundamental basis for this means of "remote control." The significance of informing for disciplinary power is that it forms the technical basis for these new forms of social control and discipline by adding an entirely new possibility to the social control mix: information, transmitted automatically from remote locations according to forms of coded programming control, accomplishing offenders' simulated presence and visibility (Bogard, 1996).

The correctional and policing use of EM is but a more concentrated form of the remote monitoring and control technologies manifested throughout the social order of late 20th century American society, as professional, bureaucratic, governmental, workplace, and ordinary social activities are increasingly becoming mediated by informing" smart machine" technologies. Panopticism, the rationalization of the design of social control, is the generalized model of domination and control (Foucault, 1979). This rationalization of crime control emphasizes supervision, deterrence, enforcement, incapacitation, and control. As we have seen, it tends to either ignore - therefore making invisible - or delegitimates rehabilitation as an important correctional objective. What is constituted with EM is a "relationship of power" (Foucault, 1983) where the monitoring system provides the informational basis for possible intervention and physical incapacitation should violation(s) of monitoring restrictions be detected/communicated by the technology.

This reality is consistent with Foucault's (1983: 220, emphasis added) assertion that "what defines a relationship of power is that it is a mode of action which does not act directly and immediately on others. Instead it acts upon their actions: an action upon an action, on existing actions or on those which may arise in the present or the future." EM is used to do this by the simulation of physical presence as a means to control an actual body, a phenomenon Bogard (1996: 4) has termed "hypersurveillant control" or "hypercontrol." The latter is accomplished when surveillance and "simulation technology" (1996: 4) are wedded together. "Simulation technology is just another way of dealing with limits imposed by time and space, energy, the human body, limits of perception, limits of memory, limits of communication, all problems for which it offers up fantastic, technically imaginative solutions" (1996: 16).

Techniques of simulation, enabled by microprocessor technologies that combine with communications networks, accomplish revolutionary extensions of surveillance by way of a transmutation of atoms (physical presence) into bits (digital data/information) (Negroponte, 1995). As Bogard points out, this virtualization process has a logic and imperative of its own that operates to reduce the gap between a 'passing present' (the actual) and a 'past as preserved' (the virtual)" (Bogard, 1996: 15). With current and projected EM systems the cybernetic mechanism of feedback control is clearly evident: "some form of coded information (sign-image) anticipates an actual event in order to control its outcome" (1996: 20). This is the situation of offenders, who are embedded in an information circuit that, for practical purposes, accomplishes the operation of a powerful feedback mechanism permitting this new kind of control. It is monitored offenders' comprehension of the basic "surveillance capacity" (Rule, 1973) of this panoptic system that constitutes EM's tactical potential to control their bodies by remote means. This, of course, occurs through the discipline of offenders' self-monitoring - offenders become the" bearers of their own surveillance" (Lyon, 1994: 133; Foucault, 1979).

As the present century comes to a close many changes are occurring in institutionalized practices of social control. In the context of a discussion of private security and control, Shearing and Stenning (1985) make a cogent observation, one that is relevant to the present discussion of EM and the changes in the operation of disciplinary power with which it is associated. They note a distinctive shift from a moral to an instrumental focus in practices of discipline and social control. They state that "from the point of view of the evolution of discipline, perhaps the most important consequence of the shift to an instrumental focus has been the move away from a concern with individual reformation to the control of the opportunities that permit breaches of order to occur" (1985: 340). Current use of EM reflects this basic shift as it skirts the practical techniques associated with moral reformation (rehabilitation) in favor of the instrumentalities of automated and programmable remote monitoring, with its ensuing panoptic control of targeted offenders. The proliferation of EM technology suggests a bright future for informing and its resulting" hypercontrol," a powerful new control technique in the strategic arsenal of the social engineers of the corrections-commercial complex.

References


under uncertainty... that consumes the resources of the 'information activity'... Human capacity for handling information is limited but can
knowledge of alternatives... It is the growth of uncertainty that drives the growth of information work, and the problems of managing
information defined in relation to decisions, it has the characteristics of an intentional concept: the standing of any message, record or report
one's uncertainty, and hence the more information is needed to render prediction accurate or control effective. Since information is
involving alternative actions or judgments. The greater the variety of the system that one is attempting to predict or control, the greater is
Newman and Newman
and Wagnalls Encyclopedia, 1994). Following cybernetics, Ashby (1956) refers to
the" interdisciplinary science dealing with communication and control systems in living organisms, machines, and organizations" (Funk
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Endnotes

1. For purposes of this analysis the term electronic monitoring or EM refers to electronic data communication that permits representation/verification of target-offender attributes, e.g., geographical location and physiological state. Remotely communicated data is made meaningful according to the social control purposes being sought, which of course takes place through specific hardware configurations and applications software designs. Software programs essentially render the data into information-meaningful knowledge that is useful in the practice of correctional and policing control. In this context information is both a resource and a commodity (Schiller, 1988: 32-5). Inasmuch as system designs provide for remote measurement of target-offender attributes, EM systems absorb the offender, making him or her a component of the information system that is EM. The most common informational function that first generation EM performs is to automate the process of remotely verifying curfew compliance (see endnote #8). Though this paper focusses on this most common kind of EM, it has to be acknowledged that other kinds of remote monitoring are currently diffusing into community correctional programs. For example, remote drug and alcohol monitoring systems are being added to some house arrest and IPS programs (Christie, 1994).

2. Beck et al. (1996) give this figure for federal and state programs. County-level programs would increase this number, but by how much is not clear. Furthermore, there is evidence that some (many?) programs considerably underutilize EM equipment (Lilly, 1992b), however it would be an unwarranted assumption to make that the 22% and 25% equipment-shelved rates reported for Florida are generally applicable across all states with programs (in excess of 430 programs, according to Lilly's 1992 report). If a 25% underutilization rate is assumed to hold across programs, then EM units still exceed 13,000 in number. This means that from 1986 (95 EM units), until 1994 (eight years later, with an estimated 13,161 units in use), this market sector is now one hundred and thirty-eight times larger than eight years previously.

3. Since the early 1980s, and mainly in response to prison crowding, these programs of community-based supervision/social control have proliferated and become absorbed into existing correctional system(s) at federal, state, and local levels. This dramatic program expansion constitutes a" widening of the net" in the sense that this also refers to an overall enlargement or expansion of the" social networks" of formal, state-sponsored control (Mainprize, 1992).

4. "Dr Schwitzgebel's Machine", as it has been called (Harvard Law Review, 1966; Fox, 1987) is modeled on the medically-based use of a telemetry system. Schwitzgebel's vision expanded the spatial parameters of remote monitoring and tracking beyond the corridors and rooms of the hospital. Between 1966 and 1970 Schwitzgebel designed, experimented with (using volunteers) and patented a telemetry system that covered two city blocks (in Boston & Cambridge, Mass.).

5. In fact, typical profiles for IPS and EM offenders indicate they are generally non-violent/low risk, which means that in reality, community-supervised offenders pose no significant danger to others (Clear and Byrne, 1992). Therefore, the necessity of this kind of technological incapacitation as a credible means of" community protection" has greater ideological significance as compared with its practical validity and efficacy.

6. Blomberg et al. (1987: 171) assert:" [i]t is from this context of extremes--prison and jail overcrowding, growing fiscal crisis, and a simultaneous acceleration in the public's mandate to get tough on criminals and reduce taxes--that home confinement and electronic surveillance programs have emerged".

7. This figure is drawn from the PBS Frontline documentary entitled," Shakedown in Santa Fe" (Aired Feb. 23, 1988).

8. Since we are in the arena of" systems" it is appropriate to employ a definition of" information" from cybernetics. Cybernetics refers to the" interdisciplinary science dealing with communication and control systems in living organisms, machines, and organizations" (Funk and Wagnalls Encyclopedia, 1994). Following cybernetics, Ashby (1956) refers to information as that which reduces uncertainty. Newman and Newman (1985: 503-04) elaborate on the importance of uncertainty:" uncertainty exists when there is a decision problem involving alternative actions or judgments. The greater the variety of the system that one is attempting to predict or control, the greater is one's uncertainty, and hence the more information is needed to render prediction accurate or control effective. Since information is defined in relation to decisions, it has the characteristics of an intentional concept: the standing of any message, record or report as information depends upon the knowledge and purposes of those who receive it. The selection-power of information depends upon knowledge of alternatives... It is the growth of uncertainty that drives the growth of information work, and the problems of managing under uncertainty... that consumes the resources of the 'information activity'... Human capacity for handling information is limited but can
be extended by institutions, by knowledge and by technology. The usefulness of the latter prosthesis is dependent on the first two.

Gandy (1993) introduces the notion of the "panoptic sort," which is a generalized mechanism of social control accomplished via IT. Gandy sees the "panoptic sort as a kind of high-tech, cybernetic triage through which individuals and groups of people are being sorted according to their presumed economic or political value" (1995: 1-2) One might say that the "political value" of offenders who are subjected to EM is the risk they represent as well as the legitimacy their control confers upon governing officials. The economy of punishment cedes an economic value when punishment and control can be accomplished in a "cost effective" manner.

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