

Electronic Monitoring: Positive Intervention Strategies

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THE SUPERVISED RELEASE of business executive Martha Stewart from Alderson Federal Prison Camp in March, 2005, brought unprecedented attention to the use of electronic monitoring. Ms. Stewart and other CEOs who have been electronically monitored (e.g., Diana Brooks of Sotheby's) are non-violent offenders who appear to present little threat to the community. Electronic monitoring in such cases is not a matter of public safety, nor is such monitoring required to facilitate the integration of these offenders into society. Rather, the monitoring serves as a socially expedient intermediate sanction that is more punitive than traditional probation, but less harsh than incarceration.

The punitive aspect of electronic monitoring (EM) is primarily a result of a more rigorously enforced compliance with the conditions of community supervision. Violations can be more easily documented with EM than with traditional procedures, and sanctions can then be applied. The intention of the designers of the original prototype system was not, however, to enhance compliance but to help offenders gain self-esteem and socially valued skills (Gable, 1986). The present paper is a brief critique of current and future uses of EM as a mobile communication technology.

In 1964, Ralph Schwitzgebel at Harvard University designed and patented (#3,478,344) with William S. Hurd a prototype electronic monitoring system in Cambridge, Massachusetts (*Harvard Law Review*, 1966; Schwitzgebel, Schwitzgebel, Pahnke and Hurd, 1964). ^[1] Juvenile offenders were monitored within prescribed geographical areas where repeater stations were located. When an individual's transceiver activated the repeater station, his location was indicated on a lighted map at the base station. A few years later, Ralph Schwitzgebel's twin brother (Robert Schwitzgebel), a professor at UCLA and later at Claremont Graduate University, licensed an FCC-experimental radio station that supported a modified prototype system capable of sending tactile signals and of permitting two-way coded communication (Schwitzgebel, 1969; Schwitzgebel & Bird, 1970). ^[2] Both of these radio-frequency transmitter/receiver systems were relatively expensive and electronically primitive by contemporary standards. As Mainprize (1996:6) noted, "Schwitzgebel's efforts to promote EM fell upon the shores of economic and technical impracticality."

In 1983, district court judge Jack Love, a former federal public defender, was thinking of a way to keep someone from going to jail and persuaded Michael Goss, a computer salesperson, to

develop a system to monitor five offenders in Albuquerque, New Mexico (Ford & Schmidt, 1985). A second system was implemented by Thomas Moody in Key Largo, Florida. By 1987, 21 states had reportedly begun EM programs, with more than 900 offenders being monitored (Schmidt, 1988).

In the following 15 years, the number of persons in the United States supervised outside jail facilities by EM had greatly increased, with estimates ranging from 12,000 to 75,000 (Cohn, 2003; Sourcebook, 2005). Roughly estimated, about 20 percent of community-based supervision in the United States now involves electronic monitoring, and equipment is provided by approximately 20 private companies. Similarly, in England and Wales, about 20 percent of 50,000 offenders who started pre- or post-release supervision in 2004 were electronically monitored (National Probation Service, 2005); in Sweden approximately 25 percent of 15,000 prisoners were placed on electronic monitoring in 1998 (Hofer, 2000).

Two changes are generally credited with the rapid growth of EM in the 1980s. The first change was the expansion of the prisoner population as a result of mandatory minimal prison terms, especially for low-level drug offenses. This led to prison overcrowding and subsequent judicial mandates to limit prison intake. The second change was expansion of a technological infrastructure for information processing. Analog telephone networks were replaced by digital networks; this replacement permitted easier integration with more powerful and lower-cost microprocessors. In terms of number of units presently deployed, EM can be judged a success. In terms of social benefit, the assessment is less certain.

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Evaluation of Program Effectiveness

The efficacy of EM, as a form of intensive supervision, can be measured in many ways.

The most common outcome variables include recidivism, revocations, and recorded infractions. The appropriate use of any of these variables obviously depends on the reason that the offender originally entered the criminal justice system. EM is most commonly used with the following types of offenses (Lilly, Ball, Curry & McMullen, 1993; Connelly, 1999):

- Drug possession
- DUI
- Driving without a license or with a suspended license
- Assaults and battery involving domestic affairs
- Petty theft, or theft without injury
- Welfare or housing fraud
- Credit card fraud or embezzlement

Selection criteria have, in some studies, also limited EM participants to persons with positive attributes such as strong family support (Roy, 1997) or individuals who are employed or attend school and can pay an income-based fee for participation (e.g., San Mateo County, 2005).

Despite the common assertion that EM is primarily used with offenders who would otherwise be imprisoned, evidence suggests that there has been “net-widening” to include low-risk offenders who would not normally be incarcerated (Bonta, Wallace-Capretta and Rooney, 1999; Jackson, DeKeijser and Michon, 1995; John Howard Society, 2000). Thus, the low recidivism rate of some programs is not a result of the deterrent power of EM, but merely a reflection of the low-risk profile of the participants—a “Martha Stewart” effect.

Because the risk profiles of offender participants differ, as well as the variables measured and the nature of the supervision accompanying EM, no clear and consistent pattern of benefit has emerged. For example, a qualitative assessment of a home-confinement program in Florida concluded that, despite some technical problems, EM was “generally successful” as an alternative to incarceration (Papy and Nimer, 1991). A study of 126 monitored drug offenders in Los Angeles compared to a matched group of 200 drug offenders who were not monitored showed

significantly fewer major violations for the monitored group during monitoring as well as 90 days subsequent to monitoring (Glaser and Watts, 1992). A study of a home detention program in Indiana by Roy (1997) reported that about 75 percent of the offenders did not recidivate after one year.

In contrast, Finn and Muirhead-Steves (2002) found no significant difference in the number of rearrests after three years between electronically monitored offenders and a control group. No significant differences were observed in a one-year evaluation by Petersilia and Turner (1992) between probationers in an EM program and probationers in an intensive supervision program. Similarly, a two-year comparison of the reconviction rate of regular probationers in the U.K. with 261 offenders under electronic house arrest found no difference between the two groups (Sugg, Moore and Howard, 2001).

A carefully designed one-year follow-up study in Canada that compared 262 male offenders in EM programs with unmonitored inmates and probationers concluded that, after controlling for offender risk and needs, “EM does not have a post-program impact on criminal behaviour” (Bonta, Wallace-Capretta, and Rooney, 1999:25). A comprehensive meta-analysis of 381 articles and abstracts on the effectiveness of EM with moderate to high-risk offenders has been published by Renzema and Mayo-Wilson (2005). They found no convincing evidence that EM is more effective in reducing the rate of offending than other prison diversion programs. These reviewers concluded that:

It is hardly surprising that recidivism has not been reliably reduced by an intervention that is typically quite short, applied in a standard fashion, and applied to a diverse group of offenders for whom it may or may not have any relevance to their motives for offending. Extant EM programs seem akin to giving aspirin to a mixed group of hospital patients and then wondering why their underlying diseases have not been cured. (Renzema & Mayo-Wilson, 2005:[in press])

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Monitoring with Graduated Sanctions

Electronic monitoring would appear, at least initially, to be a technology well suited for correctional interventions that apply sanctions of gradually increasing severity. Such graduated sanctions are typically administered as a structured, incremental response to non-compliant behavior of a parolee or probationer. As an integral part of this strategy, a comprehensive classification system was developed for assessing the probability of re-offending by adjudicated youth (Wilson and Howell, 1993). The classification system is accompanied by a conceptual matrix that guides agencies in making disposition decisions. Suggested sanctions include brief work assignments, daily attendance at self-help groups, curfew restrictions, more frequent drug testing, short jail stays, as well as home confinement with monitoring.

The sanctions are aversive events intended to punish and eliminate unwanted behavior. Behavioral scientists have carefully studied the effects of punishment for more than 35 years (e.g., Skinner, 1969), and the basic principles are firmly established. Laboratory experiments have demonstrated that the most effective aversive stimuli are certain, severe, and immediately related to the unwanted behavior. Community EM programs that are designed to maximize the specific deterrent effects of punishment generally attempt to follow these principles. However, two practical and persistent difficulties limit effectiveness:

1) Technical constraints. Technical problems with EM are inevitable, particularly in a commercial market where equipment suppliers try to get a competitive edge by equipment innovations. A possible violation in the form of an “alert” or “exception event” can be triggered by equipment malfunctions such as a telephone’s advanced calling features being activated by a family member, failure of a field monitoring unit to pick up a transmitter signal, or a computer crash. Other system glitches can occur when a backlog develops in the process of verifying exception events by the monitoring center, or when a staff member fails to enter into the

computer an approved change in an offender's schedule.

Receivers are sometimes placed in a residence in order to warn a potential crime victim (who is typically involved in a domestic violence situation) that an offender has come within a defined and prohibited geographical radius. Such false alarms are troublesome for potential victims as well as police and offenders. Erez and Ibarra (2004:18) noted that false alarms in an EM program initially caused unnecessary fear among potential victims. Later, when the alarms "became routine," irritation was expressed.

2) Judgments made by program staff. Even if EM technology were infallible, immediate and unequivocal sanctions could not be reasonably applied. Consider, for example, the very common situation of a parolee associating with ex-convicts. Will an immediate sanction actually be administered? Or, if an offender fails to show up for an appointment, will a severe sanction be automatically applied? Probably not, at least for the first few times, because we know that some degree of relapse is almost inevitable. Assuming that the program staff agrees on a grace period after an exception event, will the offender be told in advance or be left to guess and gossip about it? Issuing threats without follow-through sends a mixed message that mitigates the effectiveness of punishment routines.

On the other hand, a program that unerringly punishes offenders for technical violations cannot be expected to reduce recidivism rates because EM is likely to identify more violations than traditional supervision (Crowe et al., 2002). Imposing the punishment trilogy of "certainty," "severity," "immediacy" on the normal ebb and flow of human relationships is simply unrealistic and negates the common-sense judgment of program staff.

An essential tenet of learning theory is that *punishment does not change behavior; it temporarily suppresses it*. A person may conform to rules to avoid punishment, but once the threat of punishment is removed, the original behavior is likely to reoccur. Drivers typically slow down when they observe a police car behind them; they resume their previous speed when the police car turns onto a different road. Similarly, a higher rate of criminal activity has been observed when intensive supervision is ended (MacKenzie and De Li, 2002). Erwin (1990:72) reported that among probationers who completed the electronic monitoring program "there is a pattern of return to drugs and crime among a significant number of cases soon after they are transferred off the ISP [intensive supervision program] caseload to regular probation supervision." In a meta-analysis involving 66,500 offenders receiving intermediate sanctions (e.g., EM, fines, restitution), Smith, Goggin and Gendreau (2002) found no reduction in recidivism after completing a minimum of six months of supervision.

The process of applying increasingly severe sanctions, if empirically-established behavioral principles are followed, may also have undesirable side-effects. It prompts anger and resentment. When offenders are released from a correctional facility, they want "freedom," and typically view (perhaps unreasonably) parole conditions that include sanctions or mandatory treatment as more hoops, hurdles, and hassles to overcome. The degree of frustration and hostility expressed by offenders varies, but a visit from a probation officer is seldom a welcomed occasion. A first-hand account of the work of an EM officer in England (Jones, 2005:585) suggests that his job lacks the glamour that a corrections professional might want:

Getting a PID [personal identification device] to register can simply mean waiting outside the property from perhaps the relative safety of the vehicle. However, even this can have an element of risk, for instance, having personally had my car (a company vehicle) attacked on many occasions, including, urinated on from upstairs windows, youths surrounding the car on mass, tyres been let down, as well as even on numerous occasions being approached in my vehicle by local prostitutes touting for business.

Punishment *does* have a legitimate role in rehabilitation, but only as a *temporary* means of suppressing behavior that is dangerous to self or others. While the dangerous behavior is being suppressed, or immediately thereafter, desired behavior should be rewarded. Monitoring appears

to reduce recidivism only when it is paired with a treatment program (cf., Bonta, et al., 1999). Without a treatment-only control group, the possibility that the treatment itself might account for any observed improvement cannot be ruled out. Indeed, it could be that the coercive nature of EM with sanctions might actually reduce whatever treatment effectiveness existed. In summary, a substantial and creditable body of knowledge indicates that a program having *sanctions-only* will result in high compliance in the short term but does not improve compliance in the long term.

Few, if any, programs have used EM *primarily or exclusively* as a positive reinforcement tool. The following section of this paper outlines what we believe can be the effective use of electronic monitoring without (or with only minimal) negative sanctions.

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Positive Monitoring

Electronic monitoring should place public safety as a priority. Because incapacitation and punishment are short-term solutions to a long-term problem, public safety will substantially improve if decision-makers devise policies based on non-incarceration strategies such as positive reinforcement. The 678-page report of the Re-Entry Policy Council (2004:398) recommended that “community supervision officials should develop a system of graduated positive reinforcements that help to imprint pro-social behaviors and attitudes.” Outlined below are a few well-established incentive-oriented principles that can be used with EM. *Reward small steps.* Offenders want and deserve recognition for improvements, even if their present behavior is only a small improvement and does not meet a normally expected standard. When a child is learning to walk, or an adult learning to play a musical instrument, he or she is given praise for what—by adult or professional standards—would be a very inadequate performance. As the behavior improves, the standard is raised. The reason for the reward should be made clear to the recipient, and it should occur relatively rapidly and frequently at the outset of the rehabilitation program.

Vary the value of the incentives. Positive consequences should vary in economic or symbolic value. Possible options include letters of commendation, verbal praise, reduction of fines, complimentary tickets to sports or music events, and sobriety anniversary celebrations. The more unexpected and specific the consequence is to the individual’s personal interests, the better. An inexpensive gift that shows that the offender was recognized as a human struggling to “make it” in a seemingly indifferent or hostile world is better than a group-oriented formality. One of the most dramatic surprises given to a probationer during the original EM project in Cambridge (MA) was being driven to his work (as a gas station attendant) for two days in a donated limousine. He was the “big man” of the neighborhood. Financial limitations and agency rules mean that correctional personnel must be creative in designing appropriate incentives. Tangible rewards might be distributed at a day reporting center where activities such as drug testing—clearly distinguished from any EM program—normally take place.

Behavioral contracts are not an effective way to shape or maintain behavior. There are at least two reasons to avoid contracts or promises as a type of incentive. First, contracts give the offender the option of breaking the contract, possibly in a moment of impulsive anger that everyone later regrets. Second, if the conditions of the contract cannot be fulfilled for legitimate reasons, the corrections agent must either ignore the violation or punish the offender. Neither of these reactions is satisfactory because it justifies the offender’s predisposition to view correctional authorities as malicious, arbitrary, duplicitous, or simply inept.

Vary the timing of the incentives. The element of surprise is helpful. Routines may be desirable in matters of maintenance (e.g., paychecks, dinner time), but fixed schedules are not the most effective way to motivate behavior. Consider the example of a virtually useless behavior-change gratuity—the Christmas bonus. Because Christmas bonuses are usually given during the same week every year, the gift is no longer a surprise. In fact, employees occasionally complain that they did not get as large a bonus as they expected. Employee motivation and goodwill would be better fostered if the same expenditure, in goods or money, were spent over the course of the

entire year, immediately contingent on desirable employee performance.

In terms of social learning theory (cf., Akers and Sellers, 2004), incentives should be given on a “variable ratio/variable ratio schedule” (differing amounts / differing times). The initial EM project used variable schedules of reinforcement to shape prompt attendance of delinquent youth at paid tape-recorded interviews. At the beginning, the youth would arrive as much as 3 hours late or 3 hours early, occasionally resulting in potential violence between gangs or ethnic groups. An interviewee might receive a \$5 bonus for being “only” 45 minutes late, then no bonus for being 5 minutes early, followed by a pair of highly-desired base-ball tickets when he was 10 minutes late but gave a good interview (Schwitzgebel, 1965). The timing, contingency, and value of the bonuses were unpredictable, but always given in a manner that would not diminish the self-respect of the recipient or make him feel obligated to accept.

The typical shelf-life of a positive EM intervention should be less than one year, excluding aftercare. This follows the general treatment guidelines of Cullen and Gendreau (1989), who recommended interventions of at least 100 hours over a 3- to 4-month period ending in one year. Frequent interaction at the beginning of supervision should be tapered off toward the end as the behavior becomes maintained by more natural, long-term incentives. A monitoring transmitter might be conceptualized as a “social prosthetic device” similar to a walker that is downgraded to a crutch, then to a cane, and finally abandoned.

Develop two-way communication. Mobile technologies have the capacity to allow program staff to give incentives based on real-time documented behavior such as attendance at a drug treatment class. The 1969 tactile EM system referenced previously allowed program staff to contact offenders unobtrusively while they were in a GED (general educational development) class. Some of the two-way signaling at that time was little more than high-tech frivolity, but it was enjoyed by both parties. Messages should be brief and sporadic as well as unpredictable.

Contemporary embodiments of communication technology, such as cell phones and laptops, have become very important to young adult friendships and social identity. These should be used as a medium for reinforcing behavior. A London-based educational project has used pocket PCs and cell phones with picture messaging to send reminders and instructions to at-risk youth (Attewell and Savill-Smith, 2004). When a communication tool becomes the source of unexpected rewards of sufficiently high perceived value, the device seldom gets inexplicably “lost.”

Actively intervene. Careful observation of an individual’s criminal pattern often reveals a unique sequence of preparatory behaviors. Intervening early in the sequence of intended criminal behavior (e.g., when an offender gets on the bus to go downtown) is more effective than later in the sequence (e.g., when the offender enters the game arcade). House detention can, of course, prevent the entire sequence of behavior, but it is overly restrictive and does not allow common social activities such as grocery shopping or going to a movie at night. If the offender has a bad feeling about what is going to happen, this is the time for the offender to contact program personnel or a sponsor. Twelve-step programs, for example, often encourage participants to contact their sponsors in advance of a potential setback.

Rewarding desired behavior *before* unwanted behavior occurs is critical to success. The probationer will not make contact if he or she will be punished. To the contrary, EM participants should be able to signal staff when they are doing something unusually “good.” Of course, these reports need to be checked for accuracy, but verifying positive reports or the “tall tales” of offenders is much more appealing to staff than checking-out violations.

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Conclusion

The basic proposition of this paper is that electronic monitoring and other mobile technologies should be used to positively reinforce pro-social behavior. Unfortunately, during the past four decades electronic monitoring migrated into programs that are generally sanction-oriented and of

questionable long-term value. Missing from the formal structure of most electronic monitoring programs are concepts such as “networks of support,” “humor,” “affection,” and “hope.”

The past does not have to determine the future. Advances in context-aware technology (e.g., global positioning systems, sensor-enabled telephones) will certainly provide opportunities for increased surveillance and information acquisition. As program designers, we can drift toward a callous authoritarianism in which individuals are motivated by fear, or we can design cooperative groups that are motivated by surprisingly pleasant experiences. The criminal justice system may be the least likely place to develop an inspiring pro-social communication network. But it is also the place where unexpected generosity can most easily change lives.

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[Families and Children](#)

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- ¹ Family name, “Schwitzgebel,” legally changed to “Gable” in 1982.
- ² The licensed radio system (KA2XYS-Los Angeles) had two 12-watt base stations operating at a frequency of 165.395 MHz and four 1-watt belt units operating at 164.980 MHz. A 6x3x2-inch transceiver was housed in a leather belt that also contained an antenna and a 3.4-inch vibrating coil.

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Families and Children

An earlier version of sections of this chapter appeared in the introductory essay of Travis and Waul (2003).

- ¹ This is a single-day prevalence and does not take into account minor children whose parents were previously incarcerated; it accounts only for those who are currently incarcerated in state and federal prisons in 2002.
- ² Public Law 105-89.
- ³ Figures do not total 100 percent because some prisoners had children living with multiple care-givers.
- ⁴ Elizabeth Gaynes, conversation with the author, June 22, 2004. Cited with permission.
- ⁵ The Michigan restrictions were challenged in court as unconstitutional because they violated the Fourteenth Amendment’s guarantee of due process, the First Amendment’s guarantee of free association, and the Eighth Amendment’s prohibition against cruel and unusual punishment. The Supreme Court upheld the regulations, finding that the restrictions “bear a rational relation to the [department of correction’s] valid interests in maintaining internal security and protecting child visitors from exposure to sexual or other misconduct or from accidental injury.... To reduce the number of child visitors, a line must be drawn, and the categories set out by these regulations are reasonable” (Overton v. Bazzetta, 539 U.S. 94 [2003]).
- ⁶ The definition of who can visit or take children to visit is an even bigger problem in light of cultural traditions, i.e., the extended family network and fictive kin arrangements that exist in many African-American families. Family duties and responsibilities are shared among a group of