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ARTICLE: LEFT TO THEIR OWN DEVICES: SHOULD MANUFACTURERS OF OFFENDER MONITORING EQUIPMENT BE LIABLE FOR DESIGN DEFECT?

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LEXISNEXIS SUMMARY:

... Effectiveness of Monitoring Programs Inasmuch as one of the selling points of monitoring has been that the technology will make the public safer, we can reasonably expect some demonstration on the part of manufacturers that their monitoring equipment actually facilitates offender rehabilitation, or, at minimum, does not increase the risk of public harm beyond what would be normally achieved without monitoring. ... A small number of trial and appellate court cases have passed judgment on the liability of manufacturers and supervising officers for injuries occurring under the current (and questionably effective) monitoring programs. ... In order to assure public safety, the diminished civil liberty of probationers and parolees has been justified as a necessary condition for offender rehabilitation. ... Both offenders and victims have claimed that electronic monitoring violates the Fourteenth Amendment's due process clause - namely, by offenders who prefer house arrest to incarceration, and by citizens who have been injured by offenders who violated house arrest rules. ... Hitek Community Control Corporation, the plaintiffs filed an action, under Restatement (Second) and Florida negligence statutes, alleging that "the monitoring device was defectively manufactured because it could be removed by the wearer" and that the Department of Corrections negligently selected the type of monitoring equipment. ... However, this line of reasoning may not be entirely applicable to offender monitoring because monitoring devices are designed specifically for the purpose of preventing criminal behavior by monitored individuals.

TEXT:

[*333] I. Introduction

Freddie Nash's "courtroom conversion" appeared no less genuine than that of many other offenders who promised to change their wayward behavior. n1 "I know that when ... I'm given another chance at a free life, there's no way crime is going to interfere with my future ... my criminal life is over." n2 A few months later, he was arrested after giving a false name to police who were breaking up a street-corner fight. n3 At that time, Nash admitted that he disappeared from his house for twenty days after cutting off his electronic anklet and throwing it away. n4 He was sentenced to sixty days in jail. n5 Two years later, Nash was back in prison for four months after fleeing from police in his car. n6 A condition of his parole was another assignment to electronic house arrest. n7 Nine days after being released from house arrest, Nash was rearrested [*334] and confessed to a fatal shooting outside a tavern. n8

We do not know the sincerity of Mr. Nash's promise to stay out of trouble, but we do know that the best of intentions often go unrealized. The failure to meet stated intentions applies not only to criminal defendants but also to other actors in the criminal justice system. n9 In recent years, legislators and other elected officials have promised that electronically monitored home detention, particularly global positioning satellite ("GPS") surveillance, will provide a safe and effective alternative to incarceration. n10 The general public has tended to endorse the concept of electronic monitoring, and trial court judges are understandably eager to have monitoring as an intermediate sentencing option. In light of these social pressures, the offender monitoring industry has grown rapidly in recent years to over include 130,000 monitoring units being deployed daily in the United States. n11

This Article begins by presenting a brief overview of the origin of electronic monitoring and by describing how contemporary monitoring systems function. Part I also reviews empirical data regarding the impact of monitoring on rates of recidivism. Part II summarizes the current legal status of electronic monitoring, and attempts to demonstrate that case law based on civil rights and negligent tort has not been successful in motivating manufacturers to modify their monitoring systems in a manner that will bring about long-term reduction of criminal acts.

In contrast to civil rights and negligent tort, Part III of this article proposes an alternative legal doctrine (product liability) as a means of improving the safety and effectiveness of the technology. Specifically, attention is focused on issues of product design. This Article argues that an electronic monitoring system should be considered an acceptable product only if the system's benefits can be shown, by a risk-utility assessment, to outweigh the potential public harm of placing medium to high-risk offenders into the community. The conclusion reached is that manufacturers are currently distributing a defective product in light of the availability of a more effective [*335] and economically feasible design. A proactive defense strategy on the part of manufacturers would be to voluntarily establish a monitoring device registry similar to registries now in use for certain types of medical devices.

A. Description of Monitoring Technology

Electronic monitoring technology was originally developed in the 1960s by a small group of researchers at Harvard for the purpose of facilitating the rehabilitation of young adult offenders. n12 The monitoring system consisted of a combination of surplus missile tracking equipment, portable transceivers, battery packs, and radio-frequency relay stations. If a portable transceiver worn by a research participant was within a prescribed geographical area, it would activate a relay station every 30 seconds.

The results of a 1969 study indicated that the participants either adjusted to the monitoring system within the first few days or rejected it. n13 Public reactions to the prototype system were generally negative. n14 The title of a note in the Harvard Law Review, "Anthropotelemetry: Dr. Schwitzgebel's Machine," n15 tended to promote the image of a very intrusive device, a misrepresentation that still persists. n16 Laurence Tribe noted that the inventor "attempted for several years to explore the potential abuses of the technology he was developing, but was rebuffed by virtually every professional organization, foundation, and citizen group to which he turned." n17

Approximately 20 years after the original experiments, electronic monitoring was first judicially approved. n18 In 1983, a New Mexico state district court judge, Jack Love, sentenced five adults to home detention. n19 Judge Love had hoped that 30 days of monitored home detention would [*336] emphasize the severity of the offense but avoid incarcerating certain types of non-violent offenders, such as persons repeatedly convicted of DUI or of issuing fraudulent checks. n20

Shortly thereafter, in 1984, the Controlled Activities Corporation, located in Key Largo, Florida began manufacturing a device invented by Thomas Moody. n21 With the approval of Palm Beach County, Florida, court administrative judge Edward Garrison, the company began an experiment with 12 probationers. n22 In the same year, Digital Products Corporation of Ft. Lauderdale introduced a unique monitoring system that included a personal identification module in the form of a wristlet requiring no batteries. n23 Within six years, at least 16 manufacturers were offering equipment and services. n24

The most common configuration of offender monitoring equipment is a radio-frequency transmitter, capable of detecting tampering or removal, that can be attached to the offender's ankle. The unit sends a uniquely coded signal identifying the offender. This signal is sent every few minutes to a receiving-unit in the offender's residence. n25 Then residential unit forwards the information, either by telephone landline or cellular network, to a service center or a correctional agency office. If the offender is not at the residence during the stipulated times, an alert message is automatically sent to the monitoring center, and relayed to the supervising officer. Similarly, if an offender enters a prohibited area, an alert is generated.

GPS systems have anklets that are similar in design to the radio-frequency anklets, but the offender must also carry a GPS receiver, typically attached to a belt, that is electronically tethered to the ankle unit. n26 Some [*337] system configurations have integrated both the GPS receiver and cell phone functions into the ankle unit. n27 Active GPS allows offenders to be tracked and their movements recorded in near real-time on a digital map. n28 Passive GPS generates the same type of information, but the tracking detail is stored in the portable tracking unit until it is plugged into a home base-station, which then uploads the information to a monitoring center. n29

In urban areas, GPS signals are frequently lost inside commercial buildings or distorted by reflection from tall structures. n30 In many rural areas, cellular coverage is intermittent. n31 Basic commercial GPS location-mapping, when operating in unobstructed outdoor areas, has an accuracy range of three to five meters, but errors up to 200 meters can occur between a recorded GPS position and a roadway map location in an urban area. n32 In contrast to GPS monitoring, audio-frequency monitoring has an established history of being admissible as evidence in probation and parole revocation hearings. n33 As GPS equipment becomes more reliable and the data more accurate, the same acceptance can be expected.

Maintaining an effective monitoring system requires considerable attention. Portable GPS units must be recharged once or twice a day. Offenders frequently tamper with units, intentionally block the signal, or "misplace" part of the equipment. n34 Two-piece GPS systems, which rely on radio frequencies to tether the GPS receiver to the anklet, are particularly vulnerable to alerts, even when there is no intention on the part of the offender to abscond. One study found that only 14 percent of all the GPS alerts received in the course of one year involved legitimate location [*338] violations. n35 Alerts are particularly frequent at the start of a monitoring program, when supervising officers and equipment suppliers are becoming familiar with the type of offender, geographical terrain, and device idiosyncrasies. n36 Later, the frequency of alerts often drops dramatically. n37

Many alerts "self-clear" after a period of time. For example, consider a situation where an offender drives through a prohibited area ("an exclusion zone"). n38 When he or she enters the zone, an alert is sent; when he or she leaves the zone, the alert is cancelled. n39 Alternatively, an offender might temporarily leave an inclusion zone (typically, his or her residence) by walking across the street to meet a delivery truck, and then return to the residence. n40 Such alerts are not false alarms, nor are they necessarily enforceable violations of supervision, but they do require supervising staff's attention until the alert clears.

The use of location-monitoring technology has been integrated into a variety of pretrial, probation, and parole programs. n41 The most common applications are home detention and location surveillance. Home detention (sometimes termed "home incarceration" or "house arrest") typically specifies an inclusion zone of 50 meters from the home-based receiving unit; however, the distance can be reduced for persons living in apartment buildings or other multi-family housing. n42 The offender is required to remain within this inclusion zone except for specifically permitted activities such as employment, job training, or drug treatment classes. n43 Advance permission from a supervising officer is required to be away from home for other activities such as medical appointments, food shopping, or family events. Persons convicted of relatively minor crimes may be restricted to the residence only during evening hours or on weekends. n44

Location surveillance and restriction has become increasingly popular as a result of expanded GPS technical capability. At least 23 states have enacted legislation that mandates exclusion zones for convicted sex offenders that [*339] range from approximately 300 to 750 meters from specified locations. n45 The zones are typically around areas such as schools and public parks, although some cities have ordinances that include daycare facilities and school bus stops. n46 Also, an exclusion zone may also be established around the residence of a potential victim of domestic violence. n47 When the offender enters the potential victim's zone, the GPS ankle transmitter will send an alert signal to the monitoring station, and sound an alarm inside the protected residence. n48 Portable units are also available that can be carried by the potential victim. n49

B. Effectiveness of Monitoring Programs

Inasmuch as one of the selling points of monitoring has been that the technology will make the public safer, n50 we can reasonably expect some demonstration on the part of manufacturers that their monitoring equipment actually facilitates offender rehabilitation, or, at minimum, does not increase the risk of public harm beyond what would be normally achieved without monitoring. During the time that an individual is being actively monitored, serious offenses are probably reduced, though there is some contradictory evidence with respect to the reduction of minor offenses. n51 A large follow-up study of 75,661 offenders placed on home confinement in Florida between 1998 and 2002 found a significant reduction in re-offending, technical violations, and absconding. n52 However, a pilot GPS program in Tennessee, [*340] with 863 sex offenders, concluded "that when the treatment and control groups were statistically compared ... no statistically significant differences were found in the number of violations, new charges, or in the number of days before the first violation." n53 A two-year study in Scotland evaluated a program that gave intense social services to 216 delinquent youth. n54 Sixty-nine of these youths were also placed on monitored "movement restriction." The study found no significant improvement among the monitored youth in terms of incarceration rate, self-reported offending, or social improvement. n55

When surveillance is discontinued, there is often a brief "rebound" or "celebration" effect, followed by a gradual increase in criminal activity over a period of two or three years until the recidivism rate of previously monitored individuals finally matches that of unmonitored individuals. n56 A North Carolina program that enrolled 303 delinquent juveniles in a monitoring program, reported that 25 percent of the individuals were subsequently placed in secure custody during the calendar year. n57 This rate is comparable to a general estimate by the U.S. Department of Justice of a 24 percent one-year rate of re-confinement for juveniles released from state incarceration. n58 Indeed, some lower risk offenders, supervised at an intensive level, may prove to have a higher long-term rate of recidivism than similar offenders supervised at a less intensive level because of resentment or financial hardship caused by the restrictions and monitoring fees. n59

[*341] The most comprehensive and thorough review to date, including 119 empirical studies of recidivism, failed to find any convincing evidence that electronic monitoring by itself was superior to other prison diversion programs when recidivism is measured over a period of 3 years:

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 [electronic monitoring] programs seem akin to giving aspirin to a mixed group of hospital patients and then wondering why their underlying diseases have not been cured If governments continue to use EM as they have for the past 20 years, EM will not reduce demands on parole officers nor will EM make our communities safer. n60

Some offenders are poor candidates for almost any community-based program because they are unwilling or unable to comply with restrictions. Monitoring programs, or any treatment regime, should not be expected to eliminate or even reduce criminal acts of these offenders. An impulsive individual who discounts possible negative consequences can simply cut off the anklet and commit a crime. There are numerous instances of an offender removing the anklet and disappearing for days or weeks. n61 Between 1989 and 2009, there were at least 25 homicides committed by monitored offenders in the United States while the offender was under community supervision. n62

Most current monitoring programs, with some notable exceptions, n63 fail to produce desired results. n64 One reason for this failure is the absence of interventions using positive incentives (in addition to the usual threat of revocation of probation or parole). Numerous studies indicate that "what works" to reduce recidivism is a program that includes positive incentives as well as punishments. n65 Monitoring has a unique potential capacity to reward [*342] verifiable prosocial behavior as a means of gaining incentive-based compliance. For example, similar to the way GPS monitoring can reveal a sequence of behaviors prior to a crime, GPS can also reveal critical choice-points prior to (or just following) improved social behavior. n66 Small increments of desired behavior can then be reinforced by a variable schedule of incentives. This unrealized - but necessary - application of monitoring technology should prompt an examination of the type of equipment currently being supplied to supervising officers, as well as its accompanying instructions for use. A small number of trial and appellate court cases have passed judgment on the liability of manufacturers and supervising officers for injuries occurring under the current (and questionably effective) monitoring programs. n67

II. Legal Obligations of Electronic Monitoring

A. Affirmative Duty to Rehabilitate Offenders

Probation and parole officers have an obligation to act not just without negligence but to affirmatively promote the rehabilitation of persons in their charge. Early in the 20th century, the U. S. Congress and federal courts began to enunciate the proposition that convicted individuals should be given a chance to reform prior to being incarcerated. n68 Since that time, the opportunity for rehabilitation has been widely accepted as one primary goal of probation. n69

[*343] In order to assure public safety, the diminished civil liberty of probationers and parolees has been justified as a necessary condition for offender rehabilitation. Specifically, the power given to probation or parole officers to recommend revocation of conditioned release is predicated on the officers' efforts to facilitate rehabilitation. This premise was probably most strongly stated in *Gagnon v. Scarpelli*:

Because the probation or parole officer's function is not so much to compel conformance to a strict code of behavior as to supervise a course of rehabilitation, he has been entrusted traditionally with broad discretion to judge the progress of rehabilitation in individual cases, and has been armed with the power to recommend or even to declare revocation. n70

This proposition was reaffirmed in *Griffin v. Wisconsin*, wherein the Supreme Court held that restrictions of constitutionally recognized liberties were justified in order to assure that "probation serves a genuine period of rehabilitation and that the community is not harmed by the probationer's being at large." n71

B. Civil Rights and Negligent Tort Challenges

This Article will now briefly summarize constitutional and common law challenges that have been made to electronic monitoring. The summary will show that offender liberty restrictions have been generally upheld by trial and appellate courts. It will also indicate that innocent citizens who have been harmed by monitored offenders have usually been unsuccessful in receiving redress under doctrines of civil rights or negligent tort.

1. Civil Rights

As previously mentioned, issues of civil rights were raised at the time electronic monitoring was invented. n72 The expanded use of the technology makes an examination of constitutional protections even more appropriate. n73 The Fourth, Eighth, and Fourteenth Amendments are often cited in claims by [*344] monitored individuals.

With respect to the Fourth Amendment, there has been a gradual transformation of an offender's private residence into what might be termed "a quasi-public detention facility," and consequentially, there is considerable ambiguity regarding constitutional guarantees of privacy. In *Green v. Butler*, n74 parole agents failed to comply with the Fourth Amendment knock-and-announce requirement. Although the parolee in this case had signed a monitoring agreement that provided, in part, "my residence is subject to search at any time by parole agents," the parolee had not consented, according to the court, to "parole agents walking into the house without informing anyone of their identity or purpose." n75

Similarly, under the Fourth Amendment, reasonable suspicion and search warrant requirements are not necessarily obviated by a prior electronic monitoring agreement. n76 The degree of intrusion is, however, uncertain. n77 Perhaps the most notable indication of the extent to which the reduction of privacy expectations can justify evidence-gathering occurred in a 2001 Indiana drug-testing case. n78 A probationer on electronic home detention was required to produce a urine sample while being observed by the probation officer. n79 Comparing the probationer's urine collecting procedure to that of student athletes, the court opined: "certainly, the privacy expectations of a person convicted of a crime and sentenced to in-home detention should fall below those of a student athlete who has never been suspected of any wrongdoing whatsoever." n80

Attempts by defendants to avoid electronic monitoring via the Eighth Amendment have generally been unsuccessful. n81 Indeed, there appears to be a [*345] tendency for courts to look favorably on monitoring as a means of extending control, as long as monitoring is seen as a legitimate therapeutic strategy. n82 Pretrial individuals injured by monitoring agencies should presumably seek redress under the Fourteenth, rather than the Eighth Amendment. n83

Both offenders and victims have claimed that electronic monitoring violates the Fourteenth Amendment's due process clause - namely, by offenders who prefer house arrest to incarceration, n84 and by citizens who have been injured by offenders who violated house arrest rules. n85 In cases where a preponderance of evidence indicates a substantial, serious, and inexcusable violation of release conditions by a probationer or parolee, the trial court's revocation is usually conclusive on appeal. n86 In a small number of cases, revocation of a suspended sentence has been reversed if the convicted individual can prove equipment malfunction. n87

With respect to injured third parties, the U.S. Supreme Court held, in *DeShaney v. Winnebago City Social Services Department*, that the Due Process clause does not impose an affirmative obligation on the state to protect its citizens from non-governmental actors unless the state has created a specific danger. n88 Additionally, in a Pennsylvania case, where a monitored parolee [*346] brutally raped and murdered a mother and her daughter, the parole department and a device manufacturer were not held liable because the decedents were not distinguishable from the general public and therefore were not foreseeable victims. n89 Similarly, a district court in Wisconsin found state correction officers not liable in a case where a monitored parolee, with 158 violations of his home detention over a period of seven months, violated his house arrest sentence and killed an innocent bystander. n90 The court reasoned that the bystander's encounter with the parolee that particular night was "totally unforeseen and unpredictable," and that the State, therefore,

did not create an opportunity for the crime to occur. n91 Although the plaintiff's claims were dismissed, the Court did note that the plaintiffs might have a successful claim for negligence under state law. n92

2. Negligent Tort

Claims against monitoring agencies under the theory of negligent tort (or more specifically, negligent supervision) as applied under various state laws, have not significantly improved the rehabilitation potential of electronic monitoring because state employees are commonly shielded by immunity statutes. n93 In a 1994 case, *George v. Hitek Community Control Corporation*, n94 the probationer removed his ankle bracelet, entered the plaintiff's residence, and raped her. The court rejected the plaintiff's claim that the state owed her a duty of care because they believed that the legislature did not intend to establish a duty to protect any particular citizen. n95 The public duty doctrine was also successfully argued by the defendant in *Humphries v. N. C. Dept. of [*347] Corrections*, n96 wherein a probationer routinely left his anklet near the home receiver which allowed him to evade the restrictions of home arrest. n97 On one occasion while allegedly at work, the probationer killed a relative of the plaintiff. The court held that, where no duty is owed, there can be no negligence. n98

In contrast, the plaintiffs in a few exceptional cases have been awarded damages. According to the plaintiff's filing in *Moody v. B.I.*, a monitoring device was removed, without the court's permission, by a monitoring company employee because he thought the criminal suspect would flee with the expensive device. n99 Allegedly, the probationer had between 300 and 400 curfew violations over a period of one year. n100 The monitoring company denied liability for the related homicide but reportedly agreed to a \$ 975,000 settlement. n101

Supervising officers and monitoring companies may become liable for damages if a special relationship develops with a third party, inducing detrimental reliance. This situation is illustrated by a case in which the plaintiff alleged that a sheriff's department falsely assured her safety because the department had stated that an electronic monitoring device would prevent a known potential assailant from leaving his home. n102 The plaintiff's appeal was partly successful, with the court holding that reasonable detrimental reliance might have lulled her into a false sense of security and thereby caused her to relax her own vigilance. n103

Because, with few exceptions, courts have been reluctant or unable (due to immunity statutes) to hold government agencies accountable under civil rights or negligent tort doctrines, manufacturers of electronic monitoring equipment are the most likely source of improved correctional practice. A major advantage of assigning damages to manufacturers is that the cost is borne by those who derive economic benefit from the industry. Furthermore, the design of monitoring devices and the instructions for use are within the unique purview of manufacturers.

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III. Theories of Product Liability

The Restatement of Torts (Second), published in 1965, contained only two sections, 402A & B, that defined the areas of product liability with respect to manufacturing or design defects. n104 Subsequently, the Restatement (Third) expanded the definitions into four categories of product liability: (1) a manufacturing defect, (2) a defect caused by inadequate instruction or warning, (3) misrepresentation of the product's performance, and (4) a defect in product design. n105 Part IV of this Article will sketch a very broad outline of these categories; it does not attempt to account for significant differences in case law, state statutes, or theories of liability among various jurisdictions.

A. Manufacturing Defect

A product "contains a manufacturing defect when the product materially deviates from the manufacturer's intended design or specifications, even though all possible care was exercised in the preparation and marketing of the product." n106 By excluding "all possible care" as a defense for the manufacturer, this formulation moves toward strict liability,

and presumably benefits consumers by allowing "deserving plaintiffs to succeed notwithstanding what would be otherwise difficult or insuperable problems of proof" if the plaintiffs were required to proceed under negligence theory. n107 The plaintiff needs only to show that the product deviated from the manufacturer's intended design or stated function. n108 Nonetheless, obtaining evidence to show that such deviation occurred can be quite burdensome because the plaintiff would ordinarily be required to demonstrate that a manufacturing defect existed when the device left the hands of the manufacturer. n109

In *George v. Hitek Community Control Corporation*, n110 the plaintiffs filed an action, under Restatement (Second) and Florida negligence statutes, alleging that "the [monitoring] device was defectively manufactured because it could be removed by the wearer" and that the Department of Corrections negligently selected the type of monitoring equipment. n111 The record does not show that the court addressed the plaintiff's manufacturing defect claim, but the court did hold that the manufacturer was not liable for damages because, in [*349] part, the determination of the suitability for use of the monitoring device was uniquely within the police power of the state. n112 At this time, the author is not aware of any published cases wherein plaintiffs have successfully made a claim of manufacturing defect.

B. Inadequate Instruction or Warning

Victims who suffer injury or loss at the hands of a monitored individual often assert that they were not given adequate warning regarding the limitations of the monitoring system. n113 Determining what constitutes adequate warning is one of the most challenging and controversial aspects of products liability. n114 Restatement (Third) posits that a product may be judged defective "because of inadequate instructions or warnings when the foreseeable risks of harm posed by the product could have been reduced or avoided by the provision of reasonable instructions or warnings by the seller ... and the omission of the instructions or warnings renders the product not reasonably safe." n115 One important characteristic of an adequate warning is that it be commensurate with the scope and seriousness of the potential danger. n116 Of course, the danger may be extremely high in situations of community supervision of previously violent offenders. n117

The duty to warn includes reasonable efforts to assure that an appropriate warning reaches individuals whose safety depends on having it. n118 When a user is not sophisticated enough to evaluate the information, or when a direct warning to the user is inefficient, ineffective, or not feasible, the warnings must be given to intermediaries. n119 By positioning a supervising officer as a legitimate intermediary, the manufacturer may be able to avoid liability under [*350] the doctrine of "learned intermediaries." This doctrine provides manufacturers with an exception, at least with respect to drugs and medical devices, to their obligation to warn the ultimate consumer. n120 However, a manufacturer who hides risks may lose the benefit of the intermediaries defense. n121 No successful failure-to-warn product liability case against a monitoring manufacturer has come to the author's attention.

C. Misrepresentation

Manufacturers and sellers of devices can be expected to provide reliable equipment that performs as represented. Restatement (Third) formulates misrepresentation in the following manner: "One engaged in the business of selling or otherwise distributing products who, in connection with the sale of a product, makes a fraudulent, negligent, or innocent misrepresentation of material fact concerning the product is subject to liability for harm to persons or property caused by the misrepresentation." n122 This formulation does not require the plaintiff to show that the product was defective at the time of sale or distribution. n123 It does, however, require that the statements made by the manufacturer or distributor be substantially erroneous. Obviously, not every inaccurate statement made in the marketplace is misrepresentation. Representations can be placed on a scale ranging from accurate descriptions, to harmless exaggerations ("puffing"), to intentionally false claims. n124

A federal district court found a manufacturer liable in a case where a monitored probationer murdered his former partner, who relied on misrepresentations that gave her a false sense of security. n125 The misrepresentations were reportedly made on the Internet as well as by the [*351] company's field technician. n126 The court did not find a

manufacturing or design defect because the radio frequency transmitter was not designed to alert authorities when the offender's transmitter was out of range of the victim's receiving unit. n127 Although "justifiable reliance" is not specifically mentioned in Restatement (Third) as an element of misrepresentation claims, it is incorporated by a series of comments. n128 If the plaintiff can prove justifiable reliance, this can serve as a means of establishing causation of the alleged injury, analogous to the element of proximate cause in negligence. n129 The doctrine of misrepresentation has been used to sanction manufacturers for misdeeds even when the end-user was not aware of the misrepresentation. n130

D. Defect in Product Design

In contrast to a manufacturing defect, a design defect may occur even when the product meets the manufacturer's specifications - if its foreseeable risks could have been reduced or avoided by "the adoption of a reasonable alternative design by the seller or other distributor" and "the omission of the alternative design renders the product not reasonably safe." n131 In other words, the injury occurs not as the result of a flaw in a particular unit n132 or group of units, but because the specifications themselves create an unreasonable risk. Contemporary manufacturers of monitoring hardware have built into their products certain assumptions (some true, some erroneous) regarding how the simultaneous goals of public safety and offender rehabilitation are best accomplished. They have generally ignored the availability of certain reasonable alternative designs. Inasmuch as "what works" to permanently reduce crime among moderate-risk offenders involves the use of incentives as well as sanctions, a truly effective community-based monitoring system must [*352] incorporate the capacity to communicate information relevant to the delivery of both incentives and sanctions. Electronic monitoring technology that is presently being used functions almost exclusively as an information system to document rule violations. However, optimal cost-effective compliance can be achieved through "persuasion," rather than "control" for the majority of non-violent, non-career offenders. n133 None of the current and obvious advantages of monitoring (e.g., lower cost than incarceration, surveillance of offender's movement, availability as an alternate sanction, offender's continuation of work or schooling) are sacrificed by the addition of an incentive capacity into monitoring equipment. Nor are the customary rules and sanctions of community supervision necessarily weakened.

Until systems are produced that allow supervising officers to implement a program of incentive-based compliance, innocent citizens will continue to be unnecessarily harmed. In order to motivate manufacturers to improve the efficacy of their products, manufacturers and distributors should be held liable for harm caused by monitored individuals whose harmful acts could have been reasonably prevented by monitoring systems that encourage officer-offender interaction known to be necessary to promote and sustain public safety. At least three issues are likely to arise when addressing the applicability of a reasonable alternative design to an occasion of injury: (1) burden of proof, (2) proximate cause, (3) and risk-utility balancing.

1. Burden of Proof

Logic suggests that the burden of proof should rest first with the plaintiff. In order to establish a prima facie case of design defect, the Restatement (Third) requires that, with some exceptions, the plaintiff "prove the availability of a technologically feasible and practical alternative design that would have reduced or prevented the plaintiff's harm." n134 Numerous factors (e.g., probability of harm, cost, and consumer expectations) can be introduced into assessing the reasonableness of an alternative design. n135 In order to minimize the evidentiary burden when establishing a prima facie case, the plaintiff is not [*353] required to develop a detailed cost-benefit analysis of an alternative design. n136 A manufacturer will likely point to common industry practice in order to support the proposition that no practical reasonable alternative design was available at the time of the sale. Nonetheless, most people will understand that "carrots and sticks" are the best way to change offender behavior, and that the present monitoring systems are missing the "carrot" (positive incentive) component. This component can be added without great burden, n137 but the precise manner in which the incentives should be applied is less obvious and often counter-intuitive. n138

In passing, it should be noted that injured plaintiffs who have made claims under contract law have not fared well. A defendant manufacturer can assert that it did not have a legally binding partnership with the monitoring agency, and

hence, was not responsible for the manner in which the product was used. n139 Unless there is a close and on-going relationship between the manufacturer and the correctional agency, the causal link can be broken. n140 Even if a valid contractual relationship does exist, the plaintiff may not be an intended beneficiary. n141

Product liability, at least as formulated in the Restatement (Third), presents a different approach. It is less concerned with the buyer-seller [*354] relationship and specific third parties than with how the products affect society at large. For example, medical devices are required, prior to marketing, to have presented scientific or clinical evidence that the devices are "safe and effective," not just for a single individual, but for an identifiable population of patients to be benefited. n142

Offender monitoring technology has been promoted as a means of making the public "safer." n143 However, as previously mentioned in this Article, there is no substantial evidence that currently marketed monitoring devices have resulted in a sustained reduction of violent behavior. n144 Individual electronic monitoring cases that have come before trial courts are, in terms of overall probability, simply exemplars of the product's general ineffectiveness. All individuals who have been harmed by a monitored offender have, to some extent, been denied a promised benefit. A defendant manufacturer will want to argue that correctional officers are primarily responsible for the harm that has occurred, but this is less than persuasive because the equipment itself lacks the capacity to be used in a manner that can reduce foreseeable harm. n145

2. Proximate Cause

In order to establish a legal cause, the plaintiff must show that the alleged defect existed at the time the product left the hands of the manufacturer. The burden of this requirement was not met in *Turner v. iSecureTrac*. n146 *Turner*, a probationer in a monitoring program, entered a prohibited area and seriously injured his wife. n147 He was not wearing a monitoring anklet at the time because a defective device had not been promptly replaced by the manufacturer. n148 The state district appellate court denied the plaintiff's claim, holding, in part, that the trial record did not support the plaintiff's argument that the GPS device was defective when it left the manufacturer because it could have been damaged in shipment, storage, or while being used by a previous offender. n149 Furthermore, even if the probationer had been wearing [*355] the passive GPS device at the time of the attack, the information about his movements would not have been known until after the device was plugged into his home monitoring unit. n150 Therefore, the court reasoned, the manufacturer could not have taken action to prevent the attack, so no legal cause was established. n151

The harmful actions of a monitored offender will always be a matter of possible contention because they may constitute a superseding cause, and break a causal connection between the manufacturer and the plaintiff. n152 A manufacturer may assert that the conscious violent acts of an offender are clearly distinguishable from harms caused by inanimate devices where product design can more predictably control foreseeable harms. n153 However, this line of reasoning may not be entirely applicable to offender monitoring because monitoring devices are designed specifically for the purpose of preventing criminal behavior by monitored individuals.

An even greater challenge to establishing a causal link is presented by the fact that most of the violent acts of offenders occur after monitoring is terminated. n154 Hence, the plaintiff must show that the previous (allegedly inadequate) monitoring, which only temporarily suppressed criminal behavior, was the proximate cause of the injury. Here, an analogy might be helpful: consider the time delay in situations where there is inadequate treatment of an infection by antibiotic therapy. An improper choice of an antibiotic or an insufficient dosage will allow injurious organisms to persist, but the unfortunate medical result will only be known after a delay of days or weeks. Similarly, an improper choice of sanctions and incentives for offenders, resulting in inadequate rehabilitation, may become evident only after weeks or months. An obvious physical link between the defendant's acts or omissions [*356] and the plaintiff's injury is not always necessary; circumstantial evidence may be sufficient to establish the manufacturer's act or failure to act as a contributing cause. n155

3. Risk-Utility Balancing Test

As a matter of public policy, the use of an unavoidably unsafe product is permissible if the dangerous attributes of a product can be outweighed by its social or other benefits. These products include a wide range of items such as step ladders, cardiac implant devices, snow mobiles, power lawn mowers, alcohol, trampolines, prescription drugs, and electric kitchen knives. The standard for judging whether such a product is not an unreasonably unsafe product is, according to the Restatement (Third), a "risk-utility balancing test." n156 Basically, such a test examines (1) the probability and magnitude of harm that is off-set by the utility of the product, and (2) whether it is possible and economically feasible to make the product safer. Once a plaintiff's burden of showing a prima facie case of design defect is satisfied by a preponderance of the evidence, the manufacturer will want to show that the product is not defective or that the benefits outweigh the risks. n157 The rationale for this shift is that manufacturers have more or should have more knowledge about risks and benefits. n158

The greatest source of divergent opinion regarding risk-utility balancing involves the broad range of factors that can make an alternative design [*357] "reasonable" or more desirable. n159 The weighing of various factors was apparent in *Henry v. Philadelphia Adult Probation*. n160 In *Henry*, the plaintiffs claimed that the radio-frequency monitoring equipment was unreasonably dangerous because a safer design (i.e., GPS) was available and the manufacturer could eliminate the unsafe characteristic of their product without impairing its usefulness. n161 The court agreed with these two claims; however, beneficial factors in the risk-utility test weighed against the plaintiffs. n162 Although the plaintiffs had alleged that the anklet was designed in a manner that allowed it to be too easily removed, they did not present evidence as to how the probationer had actually (and "too easily") removed his anklet transmitter. n163 Furthermore, the court observed that the plaintiffs presented no evidence that the product itself failed to function as designed, nor did the plaintiffs' experts testify that the equipment was unsafe or defective. n164

Finally, the court set a very low standard for the defendant manufacturer to meet regarding the intended function of the equipment. The court referenced the testimony of a county sheriff who "explicitly explained that there is no expectation that the electronic monitoring unit will do any more to protect the public safety than provide information to law enforcement agencies." n165 Accordingly, the court concluded that plaintiffs' evidence was insufficient, as a matter of law, to demonstrate any actionable design defect. n166

The benefits necessary to balance public risk should not stop at the supervising officer's desk. If all that monitoring accomplished was simply to provide a log of offender movements or to make the process of supervision easier, n167 the public and the courts would probably not support the technology. n168 Hence, to permit a manufacturer to escape liability for a design defect because there is no expectation that monitoring "will do any more to [*358] protect public safety than provide information to law enforcement agencies" n169 seems short-sighted and politically unsustainable. Manufacturers and elected officials have promised increased public safety. n170 Note - there is no assertion here that manufacturers must produce an "ideal" or "perfect" device. Rather, the devices are defective because they do not prevent avoidable harm that would improve public safety.

Understandably, even in cases of egregious injury or death, courts may be hesitant to punish manufacturers for fear of crippling an industry that provides an appealing option to incarceration. The social goal of a risk-utility balancing test should be to improve the efficacy and safety of the devices, not to drive manufacturers out of business or to make the equipment excessively expensive. n171

"Industry standards" may differ from "state of the art" or technical knowledge. A general lack of a "state-of-the-art" product in the marketplace should not, in itself, justify a manufacturer's continuing distribution of an inferior product. n172 An entire industry, particularly one as small as offender monitoring, might be making an inferior product if product developers make incorrect assumptions about intermediary (supervising officers) or end-user (offender) needs. n173

[*359] In contrast to medical devices that have extensive pre-market testing, surveillance equipment is almost exclusively tested in the criminal justice marketplace. Understandably, manufacturers of electronic monitoring

equipment have no strong economic incentive to provide the substantial resources that would be needed for a comprehensive study of monitoring effectiveness. Therefore, in addition to injured citizens, a natural source of motivation for equipment improvement will come from probation and parole agencies. Unreliable equipment is very frustrating when a supervising officer, for example, must drive miles to a probationer's residence and physically inspect the monitoring device because the unit's battery has unexpectedly discharged. Equally frustrating are false error messages on a properly functioning machine or when the unit reports a violation that did not actually occur. In 2008, as the result of faulty GPS equipment, a high profile case of false arrest for alleged parole violation led to serious questioning of the vendor's equipment as well as the viability of the State of Connecticut's sex offender tracking program. n174 Political fallout as well as product liability claims may get the attention of manufacturers, but a more systematic and efficacious approach to improvement would involve a device-specific registry.

IV. Development of a Device-specific Registry

Whatever harm occurs from the ongoing criminal behavior of thousands of monitored offenders is dispersed over a large number of people. Such widespread injury does not get adequate attention when litigated on a case-by-case basis because most injured individuals do not have the incentive or resources to bring a claim. In contrast, a regulatory or voluntary oversight system has the economics of scale and the capacity to aggregate information from separate cases of similar harm.

One method of gathering relevant data would be the voluntary establishment of an offender monitoring device registry. The proposed registry could be established by a manufacturer or group of manufacturers as a proactive risk management strategy that would limit the use of the monitoring devices to offenders falling within certain acceptable risk categories. n175 Such a collection of reports of device-related incidents might be similar to registries [*360] now in place for certain types of medical devices. n176 A common error of probation and parole programs is using the ankle to restrain repeat offenders who have an established record of violent behaviors. n177 An opposite error is monitoring one-time offenders who have committed an impulsive crime. n178 Therefore, determining the most salient parameters of an appropriately monitored offender population is a critical step in reducing the public's exposure to harm. n179

Manufacturers using the registry would provide training for supervising officers, and require that electronic data forms be completed for each offender using its equipment. n180 The registry would likely reduce the common tendency to overrate a product's capabilities or to make claims that are very subjective. Data in the registry should include positive outcomes as well as adverse events. The inclusion of a limited number of important positive outcomes (e.g., offender employment, reduced arrests) is necessary so that manufacturers have sufficient "real world" data for a risk/benefit balancing test.

A device registry would create a more direct link between a manufacturer's design process and the community-based monitoring programs that use the manufacturer's products. The existence of a feedback link of this type could demonstrate a manufacturer's commitment to functionality and public safety which, in turn, should benefit the manufacturer in the marketplace. Ideally, the registry would be operated by an independent third party. n181 Participation in the registry process could become an accepted part of a legitimate defense in common law claims against manufacturers. Indeed, there may be a presumption of a good-faith effort on the part of the manufacturer to provide a safe and effective product. n182

[*361] Certain technical improvements to electronic monitoring are easily predictable. Extending battery life is probably the most urgent because some systems require that anklets be recharged by plugging the unit into a wall outlet for one to two hours. n183 Detachable or swappable batteries are being developed for newer systems. n184 More effective antenna and better cell phone networks are also obvious directions of improvement.

Other functional enhancements, such as the inclusion of two-way voice and text messaging, might be used in novel ways. With the installation of a network of inexpensive transceivers in a neighborhood, certain urban areas could become "electronically enriched" in a manner that will allow supervising officers to reward pro-social behavior in real

time during a probationer's decision-making process. n185 For instance, a critical choice point for a probationer might be a bus stop where one bus takes the probationer toward home and another bus takes the probationer toward a barber shop where illicit drugs are sold. Gradually, the probationer should practice making difficult decisions along a digital pathway without the aid of monitoring. Software could be designed to chart, over time, improvement of an individual offender's behavior (e.g., attendance at drug treatment). At present, no commercial monitoring systems provide this service. Other innovative features might include GPS cell phones, with web-access and voice recognition, to permit linking into approved location-based educational experiences. n186

Location monitoring of offenders is here to stay. Energetic and creative manufacturing companies supply products that have won general support of the public, legislatures, and the judiciary. This innovation needs to now mature into a safer, less punitive, and sustainable product - one that will embody the most humane and effective means of bringing offenders safely back into their communities. Manufacturers who view product development as "persuasive technology" rather than "security engineering" will have an edge in the correctional business of the future.

[*362]

V. Conclusion

In order to reduce jail and prison populations, an increasing number of individuals who would otherwise be incarcerated are being released into the community. Electronic monitoring is a sentencing option that promises to mitigate the resulting increase of risk of public harm, while simultaneously promoting offender rehabilitation. Although no community-based method of supervision can be expected to prevent all acts of violence, much of the public harm that now occurs is a foreseeable and avoidable consequence of the failure of manufacturers to incorporate into their devices the capacity to deliver more responsive sanctions and incentives. Decisional law based on theories of civil rights and of negligent supervision has not rectified this unfortunate situation.

An alternative strategy for motivating manufacturers to provide a more effective technology is to seek redress under the products liability doctrine of defective design. Electronic monitoring equipment should only be allowed in the marketplace if a risk-utility balancing test shows that:

(1) public risk of harm is reduced (along with other benefits such as reduction of prison population), and

(2) a feasible safer design is not available.

There is, at this time, no convincing evidence that monitoring actually reduces long-term offender recidivism (and the associated harm to innocent citizens). A safer design that allows supervising officers to send and record positively-oriented communications to offenders is technically and economically feasible. Therefore, manufacturers who fail to design a "positive incentive" component into their products can be held liable under the theory of design defect.

An initial proactive risk management strategy for manufacturers would be their voluntary establishment of an offender monitoring device registry, similar to registries now in existence for medical devices. The registry would include brief documentation of positive offender achievements as well as adverse events. Such information would provide direct feedback into a manufacturer's design process and provide evidence of a good faith effort on the part of the manufacturer to reduce avoidable harm.

Legal Topics:

For related research and practice materials, see the following legal topics:
Criminal Law & Procedure Sentencing Alternatives Home Detention Criminal Law &
Procedure Sentencing Guidelines Adjustments & Enhancements Criminal History Three Strikes Torts Products
Liability Design Defects

FOOTNOTES:

n1. George A. Mitchell & David Dodenhoff, *The Truth About Sentencing in Wisconsin*, Wis. Pol'y Res. Inst. Rep., Mar. 1998, at 1, 24, available at <http://www.wpri.org/Reports/Volume11/Vol11no2.pdf>.

n2. *Id.* at 24. See also *State v. Nash*, No. 2006AP429-CR, 2006 WL 3842181, at P 1 (Wis. App. Dec. 28, 2006) (affirming defendant's conviction by the trial court for first-degree reckless homicide and possession of a firearm by a felon, as well as denying his post-conviction motion).

n3. Mitchell & Dodenoff, *supra* note 1, at 25.

n4. *Id.* at 25.

n5. *Id.*

n6. *Id.*

n7. *Id.*

n8. *Id.*

n9. See, e.g., Anti-Drug Abuse Amendments Act of 1988, 21 U.S.C. § 1504 (repealed Sept. 30, 1997 by Pub. L. 105-20) ("declared policy of the U.S. Government [is] to create a Drug Free America by 1995.").

n10. See, e.g., Cal. Penal Code § 3010.9[e] (West 2005) ("The Legislature finds that continuous electronic monitoring has proven to be an effective risk management tool for supervising high-risk persons on parole who are likely to re-offend where prevention and knowledge of their whereabouts is a high priority for maintaining public safety."); Carter Henderson, *House Arrest*, *New Miami* 43, 43 (Sept. 1988) ("The bracelet security system works with the same uncanny effectiveness of 'white collar' prisons without walls, such as the one at Eglin Air Force Base."); Elise Castelli, *Global Positioning to Track Sex Offenders*, *Boston Globe*, Sept. 21, 2004, available at <http://www.boston.com/news/local/articles/2004/09/21/global-positioning-to-track-sex-offenders> ("This [GPS program] is an ongoing effort. We will not rest until we know that every child, every citizen in our Commonwealth feels that they can be safe from dangerous sex crimes." (quoting Massachusetts governor Mitt Romney)); Todd Richmond, *AP Centerpiece: Budget Dumps Lifetime Sex Offender GPS Tracking*, *Associated Press*, Feb. 14, 2007, available at <http://sentencing.nj.gov/downloads/pdf/articles/2007/Mar2007/news09.pdf> (In support of a lifetime GPS sex offender monitoring bill, Wisconsin state representative, Scott Suder, stated that this "bill is to make certain we know where these monsters are every second of every day.").

n11. E-mail from Peggy Conway, Remote Supervision Technology Consultant and Editor of the *J. Offender Monitoring* to Robert S. Gable, Emeritus Professor of Psychology, Claremont Graduate University (Aug. 29, 2007) (on file with author).

n12. See U.S. Patent No. 3,478,344 (filed June 21, 1965) (designing a system for analyzing and supervising certain individuals); Ralph K. Schwitzgebel, Robert L. Schwitzgebel, Walter N. Pahnke & William S. Hurd, *A Program of Research in Behavioral Electronics*, 9 *Behav. Sci.* 233 (1964) (analyzing the use of technology on human behavior); Robert Schwitzgebel, *A Remote System for Behavior Modification: Preliminary Report*, *Advances in Behav. Therapy*, 1,1-9 (Cyril Franks & Richard D. Rubin eds., 1969) (reporting the "designing and field testing of a prototype electronic communication system for use with adolescent delinquents in natural settings").

n13. Ralph K. Schwitzgebel, *Development of an Electronic Rehabilitation System for Parolees*, 2 *Law & Computer Tech.* 9, 11 (1969).

n14. See, e.g., Samuel Chavkin, *The Mind Stealers: Psychosurgery and Mind Control* 96 (Houghton Mifflin Company Boston 1978); Alan W. Schefflin & Edward M. Opton, *The Mind Manipulators: A Non-Fiction Account* 35-53 (Paddington Press 1978); Gordon Thomas, *Journey into Madness: Mind Control and Medical Abuse* 275 (Bantam Books 1989).

n15. See, *Anthropotelemetry: Dr. Schwitzgebel's Machine*, 80 *Harv. L. Rev.* 403, 403 & n.1 (1966)

(acknowledging that Schwitzgebel "disapproves" of the note's title).

n16. Schwitzgebel Machine, <http://everything2.com/title/Schwitzgebel+Machine> (last visited Oct. 22, 2009) ("The Schwitzgebel Machine used brain implants to sense and report a variety of physical and neurological data, which could be monitored at a distance of up to a quarter mile, and utilized modified missile tracking technology to report the location of its wearer.").

n17. Laurence Tribe, Channeling Technology Through Law 331-32 (The Bracton Press 1973).

n18. Joe Cassidy, District Judge Tests Electronic Monitor, Albuquerque J., Mar. 18, 1983, at A1, A3 (reporting that the monitoring was conducted by National Incarceration Monitor and Control Systems Inc., a company founded by a former Honeywell computer marketing representative, Michael T. Goss).

n19. Ralph Kirkland Gable & Robert S. Gable, Electronic Monitoring: Positive Intervention Strategies, 69 Fed. Prob. 21, 21 (2005).

n20. See Robert S. Gable & Kirkland R. Gable, The Practical Limitations and Positive Potential of Electronic Monitoring, 32 Corrections Compendium 6, 6 (2007) (documenting that Judge Love initially selected only non-violent offenders). However, there has never been a consistent policy regarding the risk profile of monitored individuals. Cf., State v. Hooker, 00-0751 (La. App. 4 Cir. 5/17/02); 763 So. 2d 738, 748 (holding that an individual accused of 2nd degree murder was not a proper candidate for pretrial home incarceration); and State v. Fuller, 947 P.2d 1281, 1282-84 (Wash. Ct. App. 1997) (denying home detention for individual convicted of third degree assault despite his medical condition) with Office of Program Policy Analysis & Government Accountability, Electronic Monitoring Should Be Better Targeted to the Most Dangerous Offenders, Rep. 05-19, at 5 (Fla. 2005) ("To make the most efficient use of the state's limited electronic monitoring resources, this technology should be targeted to those offenders who are the greatest risk to the public.").

n21. Jon Nordheimer, Jail Moves to Probationer's Home, N.Y. Times, Feb. 15, 1985, at A16.

n22. Avie Schneider, Big Brother? Computer System may Solve Jail Overcrowding, but Some not Sure, The Ledger, Feb. 17, 1985, at A1, A18.

n23. Digital Products Corporation, On Guard System (1984) (on file with author) (explaining in this pamphlet that when the wristlet was inserted into a "verifier unit" at the probationer's home, a phone call was generated at a supervisor's office).

n24. Index to Current Manufacturers, 3 J. Offender Monitoring 30 (1990).

n25. See generally National Law Enforcement and Corrections Technology Center Bulletin, Oct. 1999 available at <http://www.justnet.org/Lists/JUSTNET%20Resources/Attachments/859/Elec-Monit.pdf> (discussing different types of electronic monitoring programs). Under a somewhat less stringent arrangement, the offender wears a monitoring bracelet on his or her ankle or wrist, and receives several daily random telephone calls at home. At that time, the offender must answer the telephone, respond appropriately to a few identifying questions, and insert the bracelet into the home-based unit. The information is sent to the monitoring center by telephone landline. Id.

n26. See Tracy M. L. Brown et al., Global Positioning System (GPS) Technology for Community Supervision: Lessons Learned, Noblis Technical Report NTR-2007-#012, 1-4 (2007) available at <http://www.ncjrs.gov/pdffiles1/nij/grants/219376.pdf> (describing the different types of GPS systems used in offender supervision).

n27. Primetime: Eyes in the Sky: GPS System Monitors Parolees 24/7, (ABC News Television broadcast May 5, 2002), <http://abcnews.go.com/Primetime/story?id=132116&page=1> [hereinafter Eyes in the Sky].

n28. Marcus Nieto & David Jung, The Impact of Residency Restrictions on Sex Offenders and Correctional Management Practices: A Literature Review 40 (Cal. Research Bureau) (2006); Brown, supra note 26, at 4-10.

n29. Eyes in the Sky, supra note 27, at 4-10; Brown, supra note 26, at 4-10.

n30. Brown, supra note 26, at 2-14.

n31. Id.

n32. Kindra Serr, Thomas Windholz & Keith Weber, Comparing GPS Receivers: A Field Study, 18 URISA J. 19, 22-23 (2006) (reporting outdoor error); USGS Science for a Changing World, Rocky Mountain Mapping Center, Questions and Answers Regarding GPS, http://rockyweb.cr.usgs.gov/outreach/gps/gps_questions_and_answers.html (last visited Sept. 15, 2009). See M. Neuland & T. Kurner, Analysis of the Impact of Map-Matching on the Accuracy of Propagation Models, 5 Advances in Radio Sci. 367, 367 (2007) (reporting map error). For a comprehensive and extremely useful report on a full range of issues regarding the implementation of GPS monitoring, see Brown, *supra* note 26 (documenting GPS testing and performance).

n33. See *State v. Rivers*, 945 P.2d 367, 367 (Ariz. Ct. App. 1997) (holding that jurors could reasonably conclude that monitoring equipment functioned properly when it indicated that defendant violated curfew); *Ly v. State*, 908 S.W.2d 598, 600 (Tex. Crim. App. 1995) (affirming that print-outs are sufficient to prove by preponderance of evidence appellant's violation of curfew). But see *J.J.C. v. State*, 792 N.E.2d 85, 88 (Ind. Ct. App. 2003) (concluding that State failed to establish reliability of monitoring equipment).

n34. An equipment evaluation project found that one particular configuration of GPS units could be easily disabled by an offender wrapping the unit in aluminum foil and losing a GPS signal until a cellular phone tower triggered an alert. The report asserted that "any system that can be so easily defeated should not be considered for use on high risk [sexual] predators." New Mexico Corr. Dep't, N.M. Evaluation of S.T.O.P. Equipment 1 (2006); See generally Joe Russo, One-piece vs. Two-piece: Which Offender Tracking System Is Right for Your Agency?, 32 Perspectives 12 (2008) (presenting a detailed and authoritative analysis of equipment alternatives).

n35. Tenn. Bd. of Prob. and Parole, Monitoring Tennessee's Sex Offenders Using Global Position Systems: A Project Evaluation 20 (2007), <http://state.tn.us/bopp/Press%20Releases/2007%20BOPP-MTSU%20GPS%20Program%20Evaluation.pdf> [hereinafter Tenn. Bd. of Prob. and Parole].

n36. See Keith Gotts & Marya Forster, Global Positioning System (GPS) Supervision of Adult Sex Offenders Pilot Project 10 (Orange County [Cal.] Probation Dep't) (2007) (noting that California pilot project had 18.9 alerts per offender per day six months after start-up).

n37. See Jesse Jannetta, Report on the Results of the CDCR Two-piece GPS System Field Test 8 (Center for Evidence-Based Corrections, Univ. California Irvine) (2007) (noting field study comparing one-piece and two-piece GPS units finding on average, one alert per offender every three days).

n38. Id. at 3, 16.

n39. Id.

n40. Id.

n41. See Nieto, *supra* note 28 at 4-5 (discussing the use of electronic and GPS monitoring for sex offenders).

n42. See William D. Burrell & Robert S. Gable, From B.F. Skinner to Spiderman to Martha Stewart: The Past, Present and Future of Electronic Monitoring of Offenders, 46 *J. Offender Rehabilitation* 101, 105 (2008) (noting that GPS monitors lost signals at distances greater than approximately 150 feet or 45 meters).

n43. See Jannetta, *supra* note 37, at 3 (stating that an inclusion zone for parolees can be set to monitor time-related activities).

n44. See *id.* at 3 (elaborating the fact that inclusion zones can be set for particular times of the day).

n45. See Nieto, *supra* note 28, at 15. Monitoring has generally received strong public support. In California, the voters overwhelmingly passed a constitutional amendment (Proposition 83) in 2006 requiring lifetime GPS monitoring of felony sex offenders. Cal. Const. Proposition 83 (2006). See generally The Field Poll, <http://www.field.com/fieldpollonline/subscribers/RLS2208.pdf> (last visited Oct. 22, 2009) (discussing how the yes vote to Proposition 83 was ahead in the polls).

n46. See e.g., Ely City Council, Iowa, Proposed Ordinance 182 To Prohibit Sex Offenders from Residing within 2,000 Feet of a Public Park, Public Playground or Public Library (Sept. 12, 2005) available at http://elyiowa.com/min_September_12_2_005.html ("Discussion on this topic includes: adding protected zones around other facilities like school bus stops, and including schools and daycare facilities in the City Ordinance."). Although Ely, with a population of less than 1500, did not have a school or day care center, the proposed exclusion zones of 2,000 feet around bus stops would geographically cover almost all of the city. See generally City of Ely, Iowa, http://www.elyiowa.com/ELY_MAP%2011x17B%26W%20%281%29.pdf (last

visited Oct. 22, 2009) (map of Ely to scale); Relo Home Search, <http://www.relohomesearch.com/NorthAmericaCity/IA/Ely.aspx> (last visited Oct. 22, 2009).

n47. See Ariana Green, *More States Use GPS to Track Abusers*, N.Y. Times, May 9, 2009, at A10 (discussing how thirteen states use GPS monitoring to protect domestic violence victims from their abusers).

n48. *Id.*

n49. *Id.*

n50. In promulgating the image of safety, some officials have referred to the application of electronic monitoring as an "electronic jail" or "electronic prison." See, e.g., *Commonwealth v. Chiappini*, 782 A.2d 490, 497 (Pa. 2001) (citing Lackawanna County Prison authorities describing monitoring participant's residence as a "jail without bars."); Janice Morse, *Fox: GPS Can Track Offenders*, Cincinnati Enquirer, Apr. 8, 2005, available at http://www.questguard.com/?i=GPS_tracking&GPS=1096 ("With this thing [GPS unit], you can build an 'electronic jail' for a person... . You just plug in the coordinates of the places they're allowed to go and the places they're not allowed to go." (quoting Butler County [Ohio] Commissioner, Mike Fox)). See also *supra* note 10 (discussing the use of GPS units to promise safety).

n51. See Kathy D. Padgett, William D. Bales & Thomas G. Blomberg, *Under Surveillance: An Empirical Test of the Effectiveness and Consequences of Electronic Monitoring*, 5 *Criminology & Pub. Pol'y.* 61, 79 (2006) (finding a significant reduction in minor offenses). But see *Tenn. Bd. of Prob. and Parole*, *supra* note 35 at 3 (finding no statistically significant reduction in minor offenses).

n52. Padgett, et. al, *supra* note 51, at 79.

n53. *Tenn. Bd. of Prob. and Parole*, *supra* note 35, at 4.

n54. Furzana Kahn & Malcolm Hill, Glasgow School of Social Work, Univ. of Strathclyde, *Evaluation of Includem's Intensive Support Services* (2007), available at <http://www.strath.ac.uk/gssw/staff/gsswstaff/hillprofmalcolm/publications-profmalcolmhill/>.

n55. *Id.* at 9. Reportedly, the intensive social service component (including almost daily contact with social workers) was "far more important in terms of effecting positive change than the 'tag' [monitoring device]." *Id.* at 144.

n56. Office of Program Policy Analysis & Government Accountability, *Redirection as Effective as Residential Delinquency Programs*, Rep. 06-34, at 6 (Fla. 2006) (reporting that youth were less likely to commit crime while being monitored, but "were more likely to commit a new offense during the following month when the monitor was taken off."). Overall, monitoring had no effect on reducing arrests compared to a control group. See, e.g., *State v. Nash*, 727 N.W.2d 374 (Wis. Ct. App. 2006) (documenting first degree homicide nine days after removal of bracelet); *Eyes in the Sky*, *supra* note 27, at 1 (reporting that parolee abducted a 6-year-old boy one month after moving to less restrictive monitoring); Department of Corrections, State of Pennsylvania, *Report to the Legislature* 2, 4 (2007) (reporting that for approximately 10,000 electronically monitored parolees, a two-year follow-up showed a 46 percent failure rate that included absconds, technical violations and new sentences). Generally, two-year re-conviction rates for federal offenders are slightly below 50 percent in the U.S. and Canada. James Bonta, Tanya Gugge & Mia Dauvergne, *Public Safety Canada, Recidivism Rate of Federal Offenders 2003-02* 3 (2003) (noting that two-year recidivism rate hovers in the 40% to 50% range with significant variation).

n57. Department of Corrections, State of North Carolina, *Legislative Report on Electronic Monitoring of Juveniles* 3 (2005) (noting that electronic monitoring is considered successful if the juvenile was not placed in secure custody while being monitored. Thus, 75% of the released juveniles were considered successful).

n58. Office of Juvenile Justice and Delinquency Prevention, U.S. Department of Justice, *Juvenile Offenders and Victims: 2006 National Report* 234 (2006) (stating that about one-quarter of juveniles who offended at ages 16-17 also offended as adults at ages 18-19); see also James Bonta, Suzanne Wallace-Capretta & Jennifer Rooney, Solicitor General's Office, *Electronic Monitoring in Canada* 4 (1999) ("The longer term impact of EM [electronic monitoring] was evaluated using one year, post-conviction information. Comparisons...found that EM had no effect on recidivism.").

n59. See Kahn & Hill, *supra* note 54, at 10 (reporting that monitored youth showed a deteriorated ability to manage anger); see generally Christopher T. Lowenkamp & Edward J. Latessa, *Understanding the Risk Principle: How and Why Correctional Interventions Can Harm Low-risk Offenders*, *Topics in Community Corrections: Assessment Issues for Managers* 3 (2004) (discussing research into the impact of different correctional interventions on high and low risk offenders).

n60. Marc Renzema & Evan Mayo-Wilson, Can Electronic Monitoring Reduce Crime for Moderate to High-risk Offenders? 1 J. of Experimental Criminology 1, 18 (2005).

n61. See, e.g., *State v. Archie*, 943 P.2d 537 (N.M. Ct. App. 1977) (affirming sentence of defendant who removed device and threw it into field); *Boyd v. State*, 53 S.W.3d. 432 (Tex. Crim. App. 2001) (affirming sentence of defendant who removed device for more than 10 days, and mailed it back to probation officer); *Estate of Brown v. Barian*, 43 F. Supp. 2d 1008 (E.D. Wis. 1999) (finding that monitoring system was disconnected for more than one month prior to probationer's committing a homicide).

n62. Because of the diverse sources and private nature of knowledge surrounding these cases, the author and the journal have chosen not to publish the list of these references. They are on file with author.

n63. Padgett, et. al., *supra* note 51, at 61 (finding a significant reduction in re-offending, technical violations, and absconding).

n64. See *Tenn. Bd. of Prob. and Parole*, *supra* note 35, at 4 (stating that when treatment groups were compared with control groups "no statistically significant differences were found in the number of violations, new charges, or in the number of days before the first violation.").

n65. See Faye S. Taxman, Eric S. Shepardson & James M. Byrne, *Nat'l Inst of Corrections, Tools of the Trade: A Guide to Incorporating Science into Practice* 64 (2004) ("While staff may be accustomed to relaxing or removing restrictions as a positive reinforcement of behavior, the delivery of affirmative rewards for compliance and progress must become a more widely used tool. Using proper rewards and using them consistently and effectively will motivate offenders to change, and ultimately reduce recidivism and enhance public safety."); Douglas B. Marlow, *Strategies for Administering Rewards and Sanctions*, in *Drug Courts: A New Approach to Treatment and Rehabilitation* 317, 318 (James E. Lessenger & Glade F. Roper eds., 2007) (stating that without a variety of positive and negative reinforcements lasting gains are unlikely). Cognitive-behavioral strategies of behavior change such as social learning theory, operant conditioning, motivational interviewing, and community reinforcement approach are the best-documented treatment interventions. However, punishment remains the most popular method of control (whether applied to an individual, group, or nation) because it immediately rewards the punisher by temporarily suppressing unwanted behavior. The general public and some correctional personnel are resistant to allowing any interventions that can be characterized as "rewarding criminals."

n66. See Kirkland R. Gable & Robert S. Gable, *Electronic Monitoring: Positive Intervention Strategies*, 69 *Fed. Probation* 21, 21-24 (2005) (discussing how intervention early in a sequence of intended criminal behavior

is more effective than intervention later in the sequence).

n67. See *supra* notes 61-62 (providing cases that discuss liability for a monitoring company and a sheriff's department).

n68. See, e.g., Federal Probation Act, 18 U.S.C. § 3651 (1925) (authorizing federal courts to suspend imposition of sentences); *United States v. Murray*, 275 U.S. 347, 357 (1928) (noting that the Federal Probation Act stated that its purpose was to provide "an amelioration of the sentence by delaying actual execution or providing a suspension so that the stigma might be withheld and an opportunity for reform and repentance granted before actual imprisonment should stain the life of the convict.").

n69. See *United States v. Hill*, 967 F.2d 902, 908-09 (3rd Cir. 1992) (noting that probation is both a form of punishment and rehabilitation); *United States v. Consuelo-Gonzalez*, 521 F.2d 259, 263 n.5 (9th Cir. 1975) (observing that in the amendments to the Federal Probation Act, subsequent to its passage in 1925, the rehabilitative purpose of probation had never been rejected, and, in fact, the amendments seemed to emphasize the "rehabilitative theme."); *State v. Rivera*, 82 P.3d 939, 944 (N.M. 2004) (noting that probation statutes give the sentencing court broad powers in order to ensure that the goal of rehabilitation is achieved). See generally Francis T. Cullen & Paul Gendreau, *Assessing Correctional Rehabilitation: Policy, Practice, and Prospects*, 3 *Criminal Justice* 109 (2000) (noting that rehabilitative ideals inspired the implementation of probation systems). The rehabilitation rationale for adult probationers has been extended to parolees and juveniles. See *Kent v. United States*, 383 U.S. 541, 545 (1966) (identifying rehabilitation as a goal in juvenile sentencing). What constitutes "rehabilitation" in monitoring programs has been very broadly defined. Appellate courts have upheld placing juveniles back into their home, under electronically monitored detention, where one juvenile had previously bitten his father's arm and "ripped the telephone cord from the wall and started choking his mother," and another juvenile where he had stabbed his mother in the neck with a kitchen knife. *In re Rodney H.*, No. E034867, 2004 WL 1432927 (Cal. Ct. App. 4th 2004) (stabbing mother); *In re Steven R.*, No. F037585, 2001 WL 1420522 at 1 (Cal. Ct. App. 5th 2001) (biting father).

n70. 411 U.S. 778, 784 (1973).

n71. 483 U.S. 868, 875 (1987).

n72. See *Anthropotelemetry*, *supra* note 15, at 403 (noting concerns over the intrusive image of monitoring devices); *Tribe*, *supra* note 17, at 331-32 (commenting on ethical concerns and privacy implications of such devices).

n73. Probation and parole are authorized solely by federal or state statute, but once the privilege is granted, the administration of the statute is subject to judicial review. See *Gagnon v. Scarpelli*, 411 U.S. 778, 782 n.4 (1973) ("It is clear at least after *Morrissey v. Brewer*, 408 U.S. 471 (1972), that a probationer can no longer be denied due process"); *United States v. Mele*, 117 F.3d 73, 74 (2d Cir. 1997) (affirming that power to grant probation based solely on statute).

n74. *Green v. Butler*, 420 F.3d 689, 691 (7th Cir. 2005).

n75. *Id.* at 691, 697-98.

n76. See *United States v. Francis*, 183 F.3d 450, 452 (5th Cir. 1999) (holding that a monitoring contract does not obviate the need for search warrant when defendant consented to a search only after threats by police officers); see also *United States v. Freeman*, 479 F.3d 743, 749 (10th Cir. 2007) (finding that search of monitored parolee's residence not lawful because person who made initial entry was a representative of a private monitoring agency, not a special enforcement officer); *Knox v. Smith*, 342 F.3d 651, 659 (7th Cir. 2003) (holding that a reasonable suspicion was necessary but sufficient to seize the person of an uncooperative parolee who refused to have monitoring equipment installed in his home).

n77. *Megel v. Commonwealth*, 524 S.E.2d 139, 143 (Va. Ct. App. 2000) ("A probationer or parolee generally enjoys freedom of movement; an EIP [Electronic Incarceration Program] participant enjoys no such right. Thus, participation in the EIP is more analogous to a person serving time in a jail or prison. The participant's home is the functional equivalent of a jail or prison cell."). *Megel* was, however, overruled and remanded by the Virginia Supreme Court, which held that the EIP agreement permitted "random visits" but did not allow a residence to be "fully searched." *Megel v. Commonwealth*, 551 S.E.2d 638-39 (Va. 2001). See also *Ilchuk v. Attorney General*, 434 F.3d 618, 623 (3rd Cir. 2006) ("House arrest with electronic monitoring is 'imprisonment' for the purposes of 8 U.S.C. § 1227(a)(2)(A)."). But see *United States v. Phipps*, 68 F.3d 159, 162 (7th Cir. 1995) (finding that for purposes of the United States Federal Sentencing Guidelines, home confinement or house arrest does not constitute "imprisonment").

n78. *Kopkey v. State*, 743 N.E.2d 331 (Ind. Ct. App. 2001).

n79. *Id.* at 334, 338.

n80. *Id.* at 337-38. Furthermore, the court noted that the probationer "was permitted to produce the samples in the relative comfort of his own home, not in a public restroom." *Id.* at 338.

n81. See, e.g., *Nelson v. Henderson*, No. 99-2301, 2000 WL 1531828, at 1 (10th Cir. Oct. 17, 2000) (holding that failure of preexisting ankle injury to heal due to electronic anklet was not a violation of Eighth Amendment); *State v. Kelly*, 644 A.2d 454, 456 (Me. 1994) (affirming revocation of probation for refusing to submit to monitoring); *State v. Voss*, Nos. 2004AP3106-CR, 2004AP3107-CR, slip op. at 5 (Wis. Ct. App. June 2, 2005) (denying defendant's claim that monitoring prevented getting necessary treatment for alcoholism and mental illness).

n82. See Erin Murphy, *Paradigms of Restraint*, 57 *Duke L.J.* 1321, 1346-64, 1407-09 (2008) (noting lack of judicial scrutiny of "technological restraints" such as electronic monitoring, and also advocating that courts should demand empirical evidence that a restraint achieves its stated purpose).

n83. See *Wilson v. Zielke*, No. 06-2450, 2006 WL 2372230, at 3 (E.D. Pa. Aug. 15, 2006) (finding that claim for medical injury from inappropriately applied anklet cannot be brought under Eighth Amendment; instead, pretrial plaintiffs suffering injury from their detainment should bring a substantive due process claim under the Fourteenth Amendment).

n84. *Hacker v. Saffle*, No. 90-7091, 1991 WL 196096, at 3 (10th Cir. Oct. 01, 1991) ("Plaintiffs alleged that their... Fourteenth Amendment rights were violated when the defendants eliminated the house arrest program.").

n85. *Henry v. Philadelphia Adult Prob. and Parole Dep't*, No. 05-4809, 2007 WL 2670140, at 6-7 (E.D. Pa. Sept. 6, 2007) (filing a § 1983 claim against the city alleging the police's use of electronic monitoring device violated the victim's substantive due process rights under the Fourteenth Amendment).

n86. The standard for a trial court's abuse of discretion was set low in *Kansas v. Gumfory*, 135 P.3d 1191, 1193 (Kan. 2006) ("Judicial discretion is abused when no reasonable person would have taken the position taken by the trial court."). But trial court discretion was constrained in *United States v. Thomas*, 135 F.3d 873, 874-76 (2d Cir. 1998) (vacating the district court's conviction for a probation violation after the defendant cut off her monitoring bracelet allegedly because she could not afford pantsuits to hide the device at work).

n87. See, e.g., *J.J.C. v. State*, 792 N.E.2d 85, 87-89 (Ind. Ct. App. 2003) (reversing probation revocation due to inadequate evidence of equipment reliability); *Long v. State*, 717 N.E.2d 1238, 1241 (Ind. Ct. App. 1999) (reversing and remanding revocation of community sentence for failure of the State to give adequate written notice to parolee of his alleged violation as a result of his repair of broken ankle transmitter); *State v. Byrd*, No. M1999-00456-CCA-R3-CD, 2000 WL 1277361, at 4 (Tenn. Crim. App. Aug. 31, 2000) (denying State's request for revocation of community sentence because State did not prove that failure to maintain telephone service was willful act of defendant).

n88. *DeShaney v. Winnebago City Social Servs. Dept.*, 489 U.S. 189, 196-200 (1989). This case involved a Wisconsin social services department that failed to act to protect the health of a child, despite reports of possible injury caused by the child's father. *Id.* The Court concluded: "The people of Wisconsin may well prefer a system of liability which would place upon the State and its officials the responsibility for failure to act in situations such as the present one. They may create such a system, if they do not have it already, by changing the tort law of the State in accordance with the regular law-making process. But they should not have it thrust upon them by this Court's expansion of the Due Process Clause of the Fourteenth Amendment." *Id.* at 203. See also *Castle Rock v. Gonzales*, 545 U.S. 748, 768 (2005) (limiting due process claim against local government for failure to enforce restraining order in a domestic dispute).

n89. *Henry*, 2007 WL 2670140, at 8.

n90. *Estate of Brown v. Barian*, 43 F. Supp. 2d 1008, 1019 (E.D. Wis. 1999).

n91. *Id.* at 1019 (describing state-created danger and distinguishing it from "unforeseen, random acts of violence").

n92. *Id.*

n93. See e.g., Wis. Stat. Ann. § 893.80-82 (West 2007) which includes procedural barriers such as a 120 or 180 day notice-of-claim requirement and a \$ 50,000 limitation of damages. A detailed description of an on-going process of dealing with the financial costs of immunity waivers in Washington State has been described in Michael Tardif & Rob McKenna, *Washington State's 45-year Experiment in Governmental Liability*, 29 U. Seattle L. Rev. 1 (2005). See also *Bartunek v. State*, 666 N.W.2d 435, 440 (Neb. 2003) (affirming a public duty exception only "where the police have expressly promised to protect specific

individuals from precise harm"). See generally Michael L. Rustard & Thomas H. Koenig, Taming the Tort Monster: The American Civil Justice System as a Battleground for Social Theory, 68 Brook. L. Rev. 1 (2002) (surveying the political nature and development of neo-conservative tort law in American society and explaining the general character of tort law as a battleground of social theory); Interstate Commission for Adult Offender Supervision, Bench Book for Judges and Court Personnel 88 (2007) (listing cases that have found and not found liability for negligent supervision by supervising officers; the list does not, however, include monitoring cases).

n94. 639 So. 2d 661 (Fla. 4th Dist. Ct. App. 1994). Although no liability was found in this case, the Florida Department of Corrections reportedly "believes that electronic monitoring is a high liability program" and has not requested statutory authorization for department revocation of probation for offenders who break rules. Office of Program Pol'y Analysis & Gov't Accountability, Fla. Legislature, No. 07-42, Electronic Monitoring Expanded to Target Communities' More Dangerous Offenders 3 (2007) [hereinafter Fla. Legislature].

n95. George, 639 So. 2d at 663.

n96. 479 S.E.2d 27 (N.C. Ct. App. 1996).

n97. Most anklets are now designed to be tamper-proof and to send an alert signal. See Fla. Legislature, supra note 94 (noting that as of June 30, 2007, 89% of anklets used are active GPS systems, which are tamper-proof and send an alert signal). The record is not clear as to the design of the equipment in this case. Humphries, 479 S.E.2d at 27.

n98. Humphries, 479 S.E.2d at 28. For a different rationale with the same result, see Bartunek, 666 N.W.2d at 442 (holding that a duty does not exist unless there is a custodial situation involving "round-the-clock visual supervision," not simply 24-hour community-based electronic monitoring).

n99. Moody v. B.I., Inc., No. 02-CP-39-1893 (Pickens County [S.C.] Ct. Com. Pl.), as reported by Michael Dayton, Electronic Monitoring Firm Settles for Murder by House Arrest Detainee, S.C. Laws.' Wkly. (Jan. 24, 2005), available at <http://lawyersweeklyusa.com/subscriber/archives.cfm?page=s c/04/ 802042.htm>.

n100. Id.

n101. Id.

n102. *Hanna v. St. Lawrence County*, 825 N.Y.S.2d 798, 800-01 (N.Y. App. Div. 2006).

n103. Id.; See also *Kirby v. B.I.*, Civ. A. 4:98-CV-1136-Y, 2003 WL 22227694 at 9 (N.D. Tex. 2003) (holding that a victim justifiably relied on company misrepresentations; therefore, denying summary judgment for defendants).

n104. Restatement (Second) of Torts §§402A-402B (1965).

n105. Restatement (Third) of Torts: Products Liability § 2 (1998). The order of presentation of categories of liability varies in the present Article from the Restatement (Third). Conceptual elements of some of the formulations in Restatement (Third) can be traced back to the original 1938 Restatement. E.g., Restatement (First) of Torts § 540 (1938) (describing liability for fraudulent misrepresentation in business transactions).

n106. Restatement (Third) of Torts § 2(a).

n107. Id. § 2 cmt. a.

n108. Id. § 2(a).

n109. Id. at § 2 cmt. c.

n110. 639 So.2d 661 (Fla. 4th Dist. Ct. App. 1994); see also *supra* text accompanying note 61 (describing the number of homicides committed by offenders while they were under community supervision).

n111. *Id.* at 662-63. The record does not make clear whether the allegation was based on a flaw in the particular unit or in all units of that type.

n112. *Id.* at 663-64.

n113. See, e.g., *Bartunek v. State*, 666 N.W. 2d 435 (Neb. 2003) (reporting assertion by plaintiff that she was promised that electronic monitoring would confine offender).

n114. See 2005-2006 State Warnings Liability Survey, <http://www.abanet.org/litigation/committees/products/compendium.html> (last visited Sept. 1, 2009); Product liability Cases and the Duty to Warn (National Defense Institute CD-ROM, Charles A. Stewart ed., 2007); Drug and Medical Device Product Liability Deskbook (James Beck & Anthony Vale eds., 2004, with updates).

n115. Restatement (Third) of Torts: Products Liability § 2(c) (1998). See also *id.* at cmt. 1 ("warnings are not ... a substitute for the provision of a reasonably safe design"). Presumably, as a matter of public policy, safety is better served by relying on the inventiveness of manufacturers than on the diligence of users.

n116. See, e.g., *Martin v. Hacker*, 83 N.E.2d 1308, 1315 (N.Y. 1993) (holding that a manufacturer of a prescription drug should portray risks with "sufficient intensity"); *House v. Armor of America*, 886 P.2d 542, 555 (Utah Ct. App. 1994) (holding that an issue of fact existed as to whether the label on body armor was sufficient in an instance where a law enforcement officer was killed). See generally Margaret A. Berger & Aaron D. Twerski, *Uncertainty and Informed Choice: Unmasking Daubert*, 104 Mich. L. Rev. 257, 278 (2005) (proposing that a court must only decide "whether the signs of risk and their potential gravity were sufficiently strong to require a drug manufacturer to alert physicians so that they in turn can provide information to patients that will enable them to make a meaningful choice.").

n117. See, e.g., *Hanna v. St. Lawrence County*, 825 N.Y.S.2d 798, 799 (N.Y. App. Div. 2006) (describing situation where a defendant with numerous previous charges and under electronic monitoring broke into his girlfriend's house and shot her twice before shooting himself).

n118. American Law of Products Liability pt. 9, § 33:19-22 (3d ed. 2006).

n119. *Id.* § 33:22. See also Restatement (Third) of Torts: Products Liability § 2 cmt. i (199) (explaining that commercial sellers may be required to give warnings and instructions to intermediaries in position to mitigate harm).

n120. See Restatement (Third) of Torts: Products Liability § 6 cmt. b (1998) (requiring that "learned intermediaries" be given warnings and instructions, as they are in the best position to understand the risks for each patient).

n121. An Illinois appellate court upheld a jury verdict against a drug manufacturer when the manufacturer withheld knowledge of adverse events from prescribing physicians. The court wrote that "doctors who have not been sufficiently warned of the harmful effects of a drug, cannot be considered "learned intermediaries." *Proctor v. Davis*, 682 N.E.2d 1203, 1215 (Ill. App. Ct. 1997).

n122. Restatement (Third) of Torts: Product Liability § 9 (1998).

n123. *Id.* at cmt. d.

n124. Where would the following representations be placed on such a scale? Press release, E-Cell, Inc., *E-Cell: Save Your Cells* (Jan. 2008) ("E-cell, Inc., works closely with the courts to ensure the offender successfully completes the house arrest program ... With our state of the art monitoring center, we do not allow the offender any room to fail."); Press release, Echopass, *Echopass and SecureAlert Make Society More Safe and Secure through Electronic Monitoring and Tracking* (Aug. 15, 2006) ("SecureAlert is a prime example of how we deliver our promise of guaranteed, always-on-service... We fully understand that their monitoring center operators deal with life and death situations and the safety of citizens, which is why we're so engrained in their business, their technology and hosting their infrastructure."); Company brochure, Peter Michel, *iSECUREtrac, Corp., Electronic Monitoring: Short Circuit or Enabling Tool for Behavior Modification* (Feb. 2007) ("In the short term, it always takes more work to learn something new ... But, the effort will significantly increase the officer's effectiveness in enabling their "clients' to more permanently re-enter the community as socially responsible residents."); Company brochure, *GPS Teen Tracking* (Mar. 2006) ("GPS tracking technologies give us an excellent new tool to help keep our teens safe, to know where they have been, and where they are now!").

n125. See *Kirby v. B.I.*, Civ. A. 4:98-CV-1136-Y, 2003 WL 22227694 at 9 (N.D. Tex. 2003) (allowing recovery based on Restatement (Second) § 402).

n126. Id.

n127. The court found that "B.I. [defendant company] did not like to discuss range questions with the victim because they were afraid this information would be passed along to the offender and allow the offender to more easily defeat the system." Id. at 5 A contemporary GPS system would normally avoid this situation by sending an alert to the monitoring station and the potential victim.

n128. See Restatement (Third) of Torts: Products Liability § 9 cmt. b, n. 1 (1998) (referencing comments in Restatement (Second) of Torts § 402(B) (1965)).

n129. *Webster v. Pacesetter, Inc.*, 259 F. Supp. 2d 27, 38 (D.D.C. 2003) (requiring plaintiff to show reliance under District of Columbia law); *Freeman v. Hoffman-La Roche, Inc.*, 618 N.W. 2d 827, 840-41 (Neb. 2000) (holding that misrepresentation was adequately pled, based on physician's reliance on alleged misrepresentation).

n130. E.g., *Westlye v. Look Sports, Inc.*, 22 Cal. Rptr. 2d 781 (Cal. Ct. App. 1993), aff'd. 22 Cal. App. 4th 781, 803 (holding that the manufacture of ski bindings was liable despite the fact that the injured plaintiff was not aware of the manufacturer's fraudulent statements).

n131. Restatement (Third) of Torts: Products Liability § 2(b) (1998).

n132. An action in tort, based on negligence, might be brought when a plaintiff claims that a specific monitoring unit or system was defective and therefore dangerous. For example, the plaintiffs in *Trout v. General Security Services*, 8 S.W.3d 126, 131 (Mo. Ct. App. 1999), claimed that the supplier of the monitoring equipment was negligent by supplying a dangerous instrumentality as defined in Restatement (Second) of Torts § 392 (1965). Although the parolee's home transmitter had previously malfunctioned by generating numerous false alarms, in this particular instance the alert was accurate, so the court denied the claim and succinctly summarized its view of the facts: "The device itself was not the dangerous instrumentality, but [the parolee] may well have been." *General Security Services*, 8 S.W.3d at 131.

n133. See *Marlow*, supra note 65, at 327-328 (arguing that using proper rewards and using them consistently and effectively will motivate offenders to change). See generally, B. J. Fogg & Dean Eckles, Persuasive Technology Lab, Stanford University, *Mobile Persuasion: 20 Perspectives on the Future of Behavior*

Change (2007) (describing persuasive mobile technology).

n134. Restatement (Third) of Torts: Products Liability § 2, cmt. f (1998).

n135. *Id.* Restatement (Third) does not recognize the doctrine of "consumer expectations" as a separate test that would allow recovery. See Douglas A. Kysar, *The Expectations of Consumers*, 103 *Colum. L. Rev.* 1690, 1736 (2003) (analyzing this doctrine compared to a cost-benefit or risk-utility test as a means of developing a coherent framework for products liability actions). See also Frank J. Vandall & Joshua F. Vandall, *A Call for an Accurate Restatement (Third) of Torts: Design Defect*, 33 *U. Mem. L. Rev.* 909, 923 (2003) (arguing that in almost every case the plaintiff's attorney must hire an expert or create a model of a reasonable alternative design before the plaintiff can go to court); but see James A. Henderson & Aaron D. Twerski, *Achieving Consensus on Defective Product Design*, 83 *Cornell L. Rev.* 867, 905 (arguing that the Restatement revision is the best compromise among various interested parties). See also Henderson and Twerski *infra* note 159 (arguing that factors such as the effects of the product design on product longevity, maintenance, repair, and aesthetics may also be taken into account in deciding whether the product violates risk-utility norms).

n136. Restatement (Third) of Torts: Products Liability § 2, cmt. f.

n137. For example, in 2009, two-way voice communication was used in SecureAlert's TrackerPAL,™ and both two-way voice and text messaging was available for STOP's (Satellite Tracking of People, LLC) BluTag[su'(R)'] when it was coupled with the BluFone™ accessory. TrackerPAL I product details, <http://www.securealert.com/Products/TrackerPAL%20I.php> (last visited Sept. 15, 2009); BluTag product details, <http://www.stopllc.com/en/cms/?23> (last visited Sept. 15, 2009); BluFone product details, <http://www.stopllc.com/blufone> (last visited Sept. 15, 2009).

n138. See William D. Burrell & Robert S. Gable, *From B.F. Skinner to Spiderman to Martha Stewart: The Past, Present and Future of Electronic Monitoring of Offenders*, 46 *J. Offender Rehabilitation* 101, 101 (2008) (discussing the lack of strong empirical evidence that offender monitoring achieves public safety goals, while suggesting a new approach to offender monitoring that includes interventions). For example, an unwanted behavior cannot become voluntarily inhibited (or extinguished) if there is no opportunity to express it. Thus, strict house arrest followed directly by very lenient release does not provide an opportunity for disciplined practice of "self-control." See also Brad Boque, Jennifer Diebel & Tom O'Connor, *Combining Officer Supervision Skills*, 32 *Perspectives* 30 (2008) (detailing procedures of contingency management appropriate for supervising officers).

n139. See, e.g., *Henry v. Philadelphia*, CA No. 05-4809, 2007 WL 2670140, at 14 n.9 (E.D. Pa., Sept. 6, 2007) (finding that there was no "clear mutual assent to form a legally binding partnership").

n140. Regardless of any specific contractual arrangement, leasing or selling monitoring devices is seldom a hands-off affair similar to selling an automobile or a gun to a correctional agency. Most manufacturing companies or their vendors routinely furnish officer training, software upgrades, and equipment repair on a continuing basis to the supervising agency. Some companies even provide 24-hour on-site technical service. See, e.g., Dan Skahill, *Sentinel Offender Services, County Decides to Let Experts: [sic] Sentinel Offender Services to Handle Monitoring Center Activities* (2008) at 2, http://www.sentrak.com/files/CaseHistory_TippecanoeIN.pdf ("We provide Tippecanoe County with an On-Site Sentinel Offender Services Field Technician responsible for the installation and removal of equipment, inventory control, offender enrollment, schedule changes, and daily reports to supervising officers By placing a field technician on-site in Tippecanoe County, Indiana, Sentinel Offender Services has increased the efficiency of the public agency while introducing a level of partnership few vendors will ever match.").

n141. See, e.g., *Turner v. iSecureTrac Corp.*, No. 03CA70, 2004 WL 944386 at 7-8 (Ohio Ct. App. Apr. 28, 2004), (denying claim of plaintiff injured by an offender on basis that plaintiff was an "incidental" rather than an "intended" beneficiary of the contract between the monitoring company and the county's probation and sheriff departments); *Trout v. Gen. Sec. Servs. Corp.*, 8 S.W.3d 126, 132 (Mo. Ct. App. 1999) (holding that plaintiffs could not sue for the death of their decedent as third party beneficiaries under agreement of contracting parties when decedent was only an incidental beneficiary of that contract).

n142. See 21 C.F.R. § 820.30(g) (2009) (authorizing the Food and Drug Administration to require risk analysis for medical devices). See also William Meadow & Cass R. Sunstein, *Causation in Tort: General Populations vs. Individual Cases* (U. Chi. Pub. Law & Legal Theory Working Papers, Working Paper No. 179, 2007), available at <http://www.law.uchicago.edu/files/files/360.pdf> (arguing that risk reduction across a large population may be a sufficient standard for determining causation if optimal deterrence is the goal of a court); John Wade, *On the Nature of Strict Tort Liability for Products*, 44 *Miss L.J.* 825, 837 (1973) (listing the following item as the first factor in a balancing test: "The usefulness and desirability of the product - its utility to the user and to the public as a whole" (emphasis added)).

n143. See, e.g., *B.I., Inc., With B.I. HomeGuard™ 200, Home Confinement Monitoring Means a Safer Community* (2002) ("We are focused on helping corrections agencies break the cycle of recidivism and improve community public safety.").

n144. See discussion *supra* Part I.B (discussing studies determining low success rates for violent crime prevention).

n145. We would not blame a surgeon for a botched appendectomy if the only tool available was a pocket knife. On the other hand, there is a tendency of users to blame a product when the failure is the result of their own negligence or improper use.

n146. See Turner, 2004 WL 944386 at P 45 (noting a lack of evidence showing that the monitoring device was defective when it left the manufacturer).

n147. Id. at P 7.

n148. Id. at P 6.

n149. Id. at P 39.

n150. Id. at P 39. See Russo, *supra* note 34 and related text for technical information regarding "passive" versus "active" GPS units. A few agencies have chosen passive rather than active units in order to reduce costs and avoid tort liability. Some degree of intentional ignorance may be appropriate for community corrections, particularly if the goal is rehabilitation rather than enforcing rules.

n151. Turner, 2004 WL 944386 at PP 41, 46, 47. In a curious literal interpretation, the court also held that product defect was not proven because it did not meet the "consumer expectation" standard. Id. at P 45. This standard requires that the product be in use when the injury occurs. Inasmuch as the probationer was not wearing his monitoring device at the time of the attack, it was not "in use." Id. There is little doubt that an anklet should have been in use, and its absence was not due to any action on the part of the offender. The failure of the manufacturer to promptly supply a properly functioning replacement appears to have been a contributing factor to the injury.

n152. Restatement (Second) of Torts § 440 (1965) (defining a superseding cause as "an act of a third person or other force which by its intervention prevents the actor from being liable for the harm to another which his antecedent negligence is a substantial factor in bringing about."); *Wagner v. Clark Equip. Co.*, 700 A.2d 38, 45-47 (Conn. 1997) (showing a nuanced approach to the causation element). The court distinguished the concept

of a "concurring cause" from a "superseding cause," stating that "[a] concurrent cause is contemporaneous and coexistent with the defendant's wrongful conduct and actively cooperates with the defendant's conduct to bring about the injury." *Id.* at 47. In contrast, a superseding cause entirely supersedes the operation of the defendant's negligence. *Id.*

n153. A case in point is the rejection by an Illinois court of a product liability claim by a security guard for gunshot injuries when his two-way radio failed to function properly. *Williams v. RCA Corp.*, 376 N.E.2d 37 (Ill. App. Ct. 1978). The decision in favor of the defendant manufacturer was based primarily on the unforeseeability of actions of the robbers, and the fact that the radios were not designed to prevent criminal attacks. *Id.* at 39.

n154. See *supra* note 56 and accompanying text (regarding the "celebration effect").

n155. See Restatement (Third) of Torts: Products Liability § 2 cmt. b (1998) ("Section 3 provides that when circumstantial evidence supports the conclusion that the defect was a contributing cause of the harm ... it is unnecessary to identify the specific nature of the defect and meet the requisites of § 2. Section 3 frees the plaintiff from the strictures of § 2 in circumstances in which common experience teaches that an inference of defect may be warranted under the specific facts, including the failure of the product to perform its manifestly intended function.").

n156. *Id.* at cmt. d. Some courts may permit the plaintiff to establish a prima facie case without the requirement of demonstrating a balance between risks and utility if the availability of a safer product is proven. See, e.g., *Lewis v. Am. Cyanamid Co.*, 715 A.2d 967, 980 (N.J. 1998) ("A plaintiff must prove either that the product's risks outweighed its utility or that the product could have been designed in an alternative manner so as to minimize or eliminate the risk of harm.") (emphasis added). Except for strict liability for manufacturing defects, Restatement (Third) does not mention negligence or strict liability as applicable doctrines because, as the reporters reasoned, there was no difference between the doctrines when deciding whether a design is defective. See Aaron D. Twerski, *Chasing the Illusory Pot of Gold at the End of the Rainbow: Negligence and Strict Liability in Design Defect Litigation*, 90 Marq. L. Rev. 7, 12 (2006) ("If risk-utility tradeoffs are to be utilized to decide whether a design is defective, then there is no difference between negligence and strict liability In both, a fact-finder must determine whether a reasonable person would find that the product did not meet the reasonableness standard. That hypothetical reasonable person stands in judgment of the manufacturer in negligence cases and decides not whether a 'reasonable manufacturer' would have adopted the proposed design alternative, but whether a 'reasonable person' reflecting the values of society would have adopted the alternative design.") (emphasis added).

n157. See, e.g., *Shanks v. Upjohn Co.*, 835 P.2d 1189, 1196 (Alaska 1992) (requiring the trier of fact to decide "whether a defendant has met the burden of proving that the benefits of the design outweigh the risk"); *Soule v. Gen. Motors Corp.*, 882 P.2d 298, 311 n.8 (Cal. 1994) (reaffirming shift of burden to defendant);

Barker v. Lull Eng'g Co., 573 P.2d 443, 455 (Cal. 1978) ("Once the plaintiff makes a prima facie showing that the injury was proximately caused by the product's design, the burden should appropriately shift to the defendant to prove, in light of the relevant factors, that the product is not defective.").

n158. See Barker, 573 P.2d at 455 (stressing that the manufacturer is in the best position to know the technical matters of the product).

n159. See James A. Henderson, Jr. & Aaron D. Twerski, Product Design Liability in Oregon and the New Restatement, 78 Or. L. Rev. 1, 12 (1999) ("Factors such as the effects of the product design on product longevity, maintenance, repair, and aesthetics, together with the range of consumer choice among products, may also be taken into account in deciding whether the product violates risk-utility norms.").

n160. Henry v. Phila. Adult Prob., No. 05-4809, 2007 WL 2670140, at 12 (E.D. Pa. Sept. 6, 2007).

n161. Id. at 13.

n162. Id.

n163. Id. at 14 n.10.

n164. Id. at 13-14.

n165. Id. at 14.

n166. Id.

n167. It is questionable whether monitoring actually makes an agency's task easier. See *Monitoring Tennessee's Sex Offenders Using Global Position Systems*, supra note 35 (citing a study that found only 14 percent of all the GPS alerts received in the course of one year involved legitimate location violations). Depending on workload, officers can become so inundated by monitoring data that implicit or explicit rules of triage become necessary. See *id.* (noting a "significant" amount of offender data must be reviewed daily, and that in the fiscal year 2007-08, the state of Tennessee added 46 positions, at a cost of \$ 1,890,900, to its budget to fund the operational cost of the GPS system). After a Texas parolee abducted a minor, a subsequent investigation revealed that the parolee had a total of 444 violations while being monitored. *Eyes in the Sky*, supra note 27. The person in charge of the Texas Parole Division's GPS monitoring program at the time reportedly claimed that the agency's policy was "not to pursue the GPS tracking violations because it might lead to parolees being returned to prison which would make the system look like a failure on paper." *Id.* (quoting Allison Taylor).

n168. Merely adding a monitoring condition to low-risk probationers or to customarily released parolees does not accomplish the primary economic benefit of monitoring (i.e., reduction of jail and prison populations). See supra note 12 (regarding the recommended release of high-risk offenders).

n169. *Henry*, 2007 WL 2670140, at 15.

n170. See, e.g., Senate Transportation Committee, New York State Senate, *Drunk Driving in New York State: Action for Prevention 28* (2005) ("Electronic monitoring provides assurance of an offender's presence within an assigned area."); supra notes 20 and 50 (regarding promises of safety).

n171. See Dave Young, *Where Have All the Batons Gone?* PoliceOne.Com (April 1, 2005), available at <http://www.policeone.com/police-products/less-lethal/batons/articles/99726> (last visited Sept. 15, 2009) (describing history of product improvement); Shaun H. Kedir, *Stunning Trends in Shocking Crimes: A Comprehensive Analysis of Taser Weapons*, 20 *J. Law & Health* 357 (2006-2007) (same). Manufacturers of law enforcement devices such as stun guns, aerosol sprays, pyrotechnic grenades, and collapsible batons have been redesigning and improving their products for several decades under the pressure of product liability claims. *Id.* A substantial series of successful defenses by Taser International (Scottsdale, AZ) was temporarily stalled with a jury award of \$ 5.2 million in punitive damages, plus \$ 1,021,000 compensatory damages for the death of a man subjected to multiple taser shocks. *Heston v. City of Salinas*, No. C 05-03658, 2009 U.S. Dist. LEXIS 10096 (N.D. CA. 2009). On appeal, the punitive damages were eliminated and the compensatory award was reduced to \$ 183,000 for the surviving family. *Id.* However, despite these modest compensatory damages, subsequent post-trial motion proceedings granted plaintiff attorney fees of over \$ 1,400,000 against TASER. *Order Granting Attorney Fees; Denying Salinas' Motion for Costs* at 12, *Heston v. City of Salinas*, No. C 05-03658 (N.D. CA. 2008) (Doc. 401).

n172. Restatement (Third) of Torts: Product Liability § 2 cmt. d (2009) ("If the plaintiff introduces expert testimony to establish that a reasonable alternative design could practically have been adopted, a trier of fact may conclude that the product was defective notwithstanding that such a design was not adopted by any manufacturer, or even considered for commercial use, at the time of sale.").

n173. Notable professional efforts have been undertaken to provide guidance to monitoring programs. American Correctional Association, Standards for Electronic Monitoring Programs (1995) (including a brief section on equipment purchasing); Matthew DeMichele & Brian Payne, Offender Supervision with Electronic Technology: Community Corrections Resource (2nd ed. 2009), available at http://www.appa-net.org/eweb/docs/APPA/pubs/OSET_2.pdf. A few individual jurisdictions have established standards for functionality and use of monitoring equipment. See, e.g., Ohio Admin. Code § 109:5-1-02 (2008), available at <http://codes.ohio.gov/oac/109:5-1> (last visited Sept. 15, 2009) (requiring that monitoring equipment be certified by superintendent of Bureau of Criminal Identification and Investigation); Minn. Stat. § 629.72 (Subd. 2a) (2007) (prohibiting electronic monitoring as a condition of pretrial release in cases of domestic abuse until data become available "to evaluate and to aid in the development of standards for the use of devices to protect victims of domestic abuse."). See also National Law Enforcement and Corrections Technology Center - Rocky Mountain Region, Electronic Monitoring Resource Center <http://www.justnet.org/Pages/emrc.aspx> (last visited Oct. 22, 2009) (providing up-to-date information).

n174. Douglas S. Malan & Paul Sussman, False Alarms Common with GPS Monitoring, Connecticut Law Tribune, Sept. 22, 2008 at 1, available at <http://www.ctlawtribune.com/getarticle.aspx?ID=31533> (last visited Oct. 22, 2009). GPS data point "drift" incorrectly indicated that the parolee left his assigned residence for 15 minutes. *Id.* ("Gov. M. Jodi Rell and other Connecticut officials seemed shocked to learn that global positioning system devices used to monitor movement of a released serial rapist and other sex offenders could give faulty readings."). State Changes Rapist's Faulty GPS: GPS Signal Lost 194 Times in 4 Months, Officials Say, WFSB News, Jan. 16, 2009, (describing replacement of previous system); Christian Nolan, GPS Tracking Gets Cautious Endorsement, Connecticut Law Tribune, Nov. 25, 2008, available at <http://www.law.com/jsp/legaltechnology/pubArticleLT.jsp?id=1202426262438> (questioning performance of Pro Tech Monitoring which has a \$ 950,000 per year contract with Connecticut's Judicial Branch).

n175. See, e.g., Patricia M. Harris, What Community Supervision Officers Need to Know about Actuarial Risk Assessment and Clinical Judgment, 70 Fed. Probation 8-14 (2006) (suggesting that initially, the use of a screening test, such as the Level of Service Inventory - Screening Version (LSI-SV), could assign offenders to a recidivism risk category).

n176. See FDA, Managing the Risks from Medical Product Use (1999), available at <http://www.fda.gov/tfrm/Part3.html> (exemplifying such reports). The FDA conducts post-marketing risk assessment of devices by requiring manufacturers and some user facilities (e.g., hospitals and nursing homes) to report device-related adverse events. *Id.* Reports are entered into the Manufacturer and User Device Experience ("MAUDE") database. *Id.*

n177. See discussion *supra* Part I.B (discussing studies determining low success rates for violent crime prevention).

n178. See Kahn & Hill, *supra* note 54, at 13 (suggesting that monitoring is not desirable because excessive temporary restraint may increase recidivism); see generally Lowenkamp & Latessa, *supra* note 59, at 3 (suggesting intensive treatment and supervision of low-risk offenders may increase recidivism).

n179. The unhappy truth is that there are very few systematic descriptions of offender characteristics statistically linked to monitoring conditions when rates of recidivism are reported. See Marc Renzema, *Strategies for the Evaluation of Impact of GPS on High Risk Offenders in the USA*, presented at 5th European Conference on Electronic Monitoring (May 10-12, 2007), available at http://www.cep-probation.org/uploaded_files/pres%20EM%2007%20renzema.pdf (giving an authoritative and pull-no-punches summary of what is needed to improve monitoring and reduce recidivism).

n180. The entire range of tasks of supervising officers (e.g., installing equipment, examining GPS maps, responding to alerts, maintaining inventory, filing reports) should be examined in an effort to minimize workload and to maximize options for timely incentive-based interventions with offenders.

n181. See, e.g., Aaron Moskowitz, *BREF and Leading Medical Institutions Announce Medical Device Registry to Help Improve Patient Care*, BREF News, Oct. 24, 2006, <http://www.brefnet.org/news/article/12> (reporting that the Biomedical Research & Education Foundation has initiated an effort to develop a national medical device registry focusing on orthopedic devices, with The University of Pennsylvania School of Medicine and the Cleveland Clinic Foundation as founding partners).

n182. See, e.g., *Riegel v. Medtronic, Inc.*, 128 S. Ct. 999 (2008). A possible, though extreme, example is the protection that the Supreme Court has provided to makers of medical devices who adhere to rigorous FDA standards. *Id.* at 1008-11 (holding that because the FDA's pre-market approval process established federal requirements, a patient's state common-law claims of negligence, strict liability, and implied warranty against medical device manufacturer were preempted).

n183. Jim McKay, *False Promises*, *Gov't Tech.*, Feb. 2009, at 14, 18-19, available at http://digitalmag.govtech.com/GT/GT_Mag_Feb09.pdf; George B. Drake, *Nat'l Law Enforcement and Corr. Tech. Ctr., A Review of the GPS Program of Connecticut's Court Support Services Division 13* (2008), reprinted

in Memorandum from Thomas A. Siconolfi, Executive Dir., Office of the Chief Court Adm'r, State of Conn., Judicial Branch, to Judge Quinn, Chief Court Adm'r, Office of the Chief Court Adm'r, State of Conn., Judicial Branch, and Judge Carroll, Deputy Chief Court Adm'r, Office of the Chief Court Adm'r, State of Conn., Judicial Branch, app. at 20 (Nov. 17, 2008) <http://www.jud.ct.gov/external/news/GPSReviewFinal111708.pdf>.

n184. Drake, *supra* note 183, at 13.

n185. See Robert S. Gable, *Electronic Monitoring of Offenders: Can a Wayward Technology Be Redeemed?*, 4744 *Lectures in Computer Sci.* 100, 103 (2007) (discussing the hypothetical in the following two sentences).

n186. See generally Steve Benford, *Future Location-Based Experiences* (2005), <http://www.jisc.ac.uk/whatwedo/services/techwatch/reports/horizonscanning/hs0501.aspx> (discussing a wide range of potential applications of location-enabled services and devices).