The Tools at Hand: Surveillance Innovations and the Shifting Role of Federal Law Enforcement in Drug Control

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ABSTRACT

Although enforcement is a key aspect of any drug prohibition scheme, changes in enforcement capabilities frequently occur independently of efforts by policymakers to manage the sometimes-conflicting public health and law enforcement components of drug policy. Since the passage of the Controlled Substances Act (“CSA”) in 1970, the surveillance tools available to law enforcement officers investigating narcotics crimes have become exponentially more powerful. By functioning as a force multiplier, these surveillance tools can fundamentally shift the ability of federal law enforcement to enforce drug laws, and consequently further augment the role of federal law enforcement in drug control efforts. However, the role of surveillance innovations in molding federal enforcement of drug laws has not yet been systematically analyzed in the context of the post-CSA policy environment.

In this paper, I explore the relationship between efforts to enforce the regulatory scheme established by the CSA and the development of surveillance infrastructure in the United States over the last fifty years. I pay particular attention to how the role of the federal law enforcement in drug control has been shaped by advancements in law enforcement surveillance capabilities, and argue that efforts to understand the policy changes brought about by the CSA are likely to be incomplete unless they also consider intervening changes in surveillance capabilities. I conclude by discussing the federalism and policy issues raised by this analysis, and describing the implications for future efforts to reform the CSA.

I. INTRODUCTION

Although enforcement is a key aspect of any drug prohibition scheme, changes in enforcement capabilities frequently occur independent of efforts by policymakers

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to manage the sometimes-conflicting public health and law enforcement components of drug policy. This is particularly true in the context of developments in electronic surveillance, which has the potential to greatly impact the efficiency and efficacy of information collection during criminal investigations. Furthermore, these changes may not occur uniformly: some agencies may have more expertise in conducting electronic surveillance or additional resources to purchase expensive equipment, increasing their ability to take advantage of changes in electronic surveillance technology and leading to variation in the effects of this technology across agencies. Unless this variation is accounted for when amending existing drug regulations, reform efforts could create unanticipated consequences.

In this paper, I explore the relationship between efforts to enforce the regulatory scheme established by the CSA and the development of surveillance infrastructure in the United States over the last fifty years. I begin by first briefly describing the law enforcement mechanisms originally intended to enforce the CSA. I then discuss significant trends in electronic surveillance since the passage of the CSA, paying particular attention to the available evidence on how these forms of surveillance have been used in narcotics investigations. Next, I turn to how these surveillance trends are likely to have affected surveillance practices across different categories of agencies in the United States, concluding that, while all agencies are likely to increase their ability to obtain information in the short run, in the long run developments in electronic surveillance technology will likely have disproportionate effects in the context of federal law enforcement, shifting relative investigative capacity toward federal agencies. Finally, I discuss the federalism and policy implications of this analysis and describe potential next steps for amending the CSA in light of my conclusions.

II. THE CONTROLLED SUBSTANCES ACT AND DRUG LAW ENFORCEMENT

Prior to the passage of the Controlled Substances Act, the federal government’s role in enforcement of narcotics laws was somewhat limited and spread across a variety of agencies. While federal law enforcement was heavily involved in policing intoxicating substances in certain contexts, funding available to federal narcotics agencies was limited. Consequently, “[e]nforcement of drug laws was primarily the responsibility of local police” with federal agencies “occasionally assist[ing] with enforcement.”


law enforcement increased the number of law enforcement officers detailed to narcotics enforcement and intensified their enforcement of narcotics crimes.4 While federal drug arrests were relatively flat during this time period, federal narcotics enforcement agencies such as the Federal Bureau of Narcotics played a key role by training state and local narcotics officers.5

This division of labor echoed traditional views of the roles of state and federal governments in investigating and prosecuting crime prior to the 1960s. In the United States, plenary police powers—which include “the suppression of violent crime and vindication of its victims”—are “denied the National Government and reposed in the States.”6 Although states have broad capabilities to enact and enforce criminal statutes,7 the federal government was intended to be minimally involved in defining and managing crime.8 The federal government began to play a broader role in combating crime during the twentieth century, first through the passage of statutes dealing with criminal activities with a close nexus to interstate commerce, such as mail fraud,9 and then transitioning to activities that had customarily been prohibited under state law.10 As part of this trend, Congress began to “enlist federal criminal law in the service of national moral crusades,”11 including efforts to fight use and abuse of narcotic drugs. This expansion of federal involvement in criminal law has not been uncontroversial. A task force assembled by the American Bar Association published a report in 1999 that referred to the increase in federal criminal law as “troubling”,12 noting that “[i]nappropriate federalization strains the fabric of the federal-state system.”13

Against this background, the passage of the Controlled Substances Act in 1970 was meant to mark a move by the federal government away from a punitive approach

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4 Nicholas & Churchill, supra note 2, at 605, 611–12.
5 Nicholas & Churchill, supra note 2, at 612-13. (“[T]he Narcotic Control Act of 1956 created the Federal Bureau of Narcotics Training School where state and local officers received narcotics training. By 1963 it had trained 900 officers...This school helped the FBN improve the ability of state and local governments to enforce their drug laws.”).
10 Ashdown, supra note 7, at 791.
11 Richman, supra note 8, at 384.
12 Baker et al., supra note 9, at 5.
13 Id. at 24.
to social harms caused by drug use and toward an approach that balanced enforcement approaches with therapeutic approaches.\textsuperscript{14} As part of the process of implementing the CSA, in 1973 President Nixon authorized the creation of the Drug Enforcement Agency ("DEA")—a new federal agency to centralize and combine federal drug enforcement efforts previously spread across several entities.\textsuperscript{15} This centralization process was explicitly tied to a perceived need for a more powerful narcotics enforcement agency on the federal level. According to President Nixon, creation of the DEA was necessary because ""the federal government is fighting the war on drug abuse under a distinct handicap, for its efforts are those of a loosely confederated alliance facing a resourceful, elusive, worldwide enemy.""\textsuperscript{16} Narcotics-related intelligence gathering was seen as a critical and necessary function for the newly-founded DEA; the Office of Intelligence was quickly established and tasked with, among other things, ""[i]ncreas[ing] the efficiency in the reporting, analysis, storage, retrieval, and exchange"" of narcotics-related intelligence.\textsuperscript{17}

Use of the narcotics enforcement infrastructure developed after the passage of the CSA has changed over the years in response to changing federal priorities and approaches to addressing drug use in the United States. Specifically, the Reagan-era shift toward increased reliance on enforcement mechanisms to manage substance use saw an expansion of DEA authority to include more direct oversight for practitioners who were registered to prescribe scheduled controlled substances. Simultaneously, more sophisticated use of data processing tools further facilitated communication with the myriad of agencies involved with narcotics regulation across the United States.\textsuperscript{18}

However, even as the role of federal agencies in enforcing narcotics laws has expanded over the years, ""[m]ost drug arrests are made by state and local law enforcement, and most of these arrests are for possession rather than sale or manufacturing.""\textsuperscript{19} In part, the difference between the number of federal and state drug arrests may be attributable to differences in the availability of police manpower.

\textsuperscript{14} ""This law represents a transition between reliance on law enforcement with severe penalties and a therapeutic approach — even a tolerance for at least some previously forbidden drug use."" DAVID F. MUSTO, THE AMERICAN DISEASE: ORIGINS OF NARCOTIC CONTROL 255 (1999). See also H. R. REP. 91-11 (1970) (""This legislation is designed to deal in a comprehensive fashion with the growing menace of drug abuse in the United States (1) through providing authority for increased efforts in drug abuse prevention and rehabilitation of users, (2) through providing a more effective means for law enforcement aspects of drug abuse prevention and control, and (3) by providing for an overall balanced scheme of criminal penalties for offenses involving drugs.").

\textsuperscript{15} Sacco, supra note 3, at 5–6.


\textsuperscript{17} Id.

\textsuperscript{18} Id. at 56–57.

\textsuperscript{19} Sacco, supra note 3, at 21.
at the federal and state/local level. As of 2016, there were about 130,000 full-time officers at federal law enforcement agencies, about 80,000 of whom were engaged in criminal investigation roles.\footnote{Connor Brooks, U.S. Dep’t of Just., 251922, Federal Law Enforcement Officers, 2016—Statistical Tables 6 (2019).} In that same year, there were about 650,000 sworn state and local law enforcement officers.\footnote{Fed. Bureau of Investigation, 2016 Crime in the United States Table 25, https://perma.cc/WU2V-5WB9 (last visited Apr. 28, 2020).} The difference between drug enforcement arrests made at the federal and state level is also likely attributable to long-standing differences in enforcement strategies across different levels of government. Federal enforcement efforts tend to be more heavily focused on importation and high-level distribution acts within the United States,\footnote{Peter Reuter & Mark A. R. Kleiman, Risks and Prices: An Economic Analysis of Drug Enforcement, 7 Crime & Just. 289, 290 (1986).} while state and local enforcement efforts are more heavily focused on lower-level distribution acts and users.

III. DEVELOPMENTS IN ELECTRONIC SURVEILLANCE, 1970–2020 AND BEYOND

While narcotics policing practices at both the federal and state level have undoubtedly been shaped by shifts in legislative priorities and resource constraints, these are not the only factors contributing to changes in enforcement practices since the enactment of the CSA. The past fifty years has also seen enormous innovation in the surveillance tools available to law enforcement officers. In this section, I explain the state of electronic and technological surveillance tools at the time the CSA was passed, describe several major trends in the development of these tools over the last fifty years and discuss how these trends may be expected to continue in the future. Wherever possible, I supplement this discussion with data on use of electronic surveillance, particularly in the context of narcotics-related investigations.

A. Electronic and Technological Surveillance, circa 1970

Law enforcement officers have long had technological means at their disposal to obtain the contents of communications. Wiretapping—the interception of telephonic or electronic communications—has been used by law enforcement since at least the 1890s.\footnote{Samuel Dash et al., The Eavesdroppers 25 (Rutgers U. Press. 1959).} By the time the CSA was passed in 1970, wiretapping was a highly salient but infrequently used tool in law enforcement officers’ investigative toolkit. According to annual Report on Applications for Orders Authorizing or Approving the Interception of Wire or Oral Communications, 597 authorized requests for wiretaps were reported to the Administrative Office of the United States Courts in 1970, including 183 authorized by federal judges and 414 authorized by...
state judges. Although wiretaps were most commonly used during investigations of gambling and bookmaking offenses, narcotics-related crimes comprised a substantial proportion (approximately 21%) of the major offenses underlying wiretap authorizations on both the federal and state level.

In addition to obtaining the contents of communications by electronic eavesdropping, law enforcement also had tools available to allow them to conduct electronic location tracking, although these instruments did not provide detailed information and required extensive human intervention. For example, at the time the CSA was written, law enforcement officers could use radio-transmitting beepers to follow the location of an item or vehicle. After secretly placing a beeper on the object to be tracked, law enforcement officers could track the object as it moved by following in a car outfitted with multiple antennas and a device that measured the strength of the radio signal emitted from the beeper. Use of a radio transmitting beeper had several advantages over tracking an object’s location by surreptitiously following in a police car. Tracking beepers lowered the cost of surveillance since fewer officers needed to be involved in the process. Additionally, tracking beepers allowed surveillance to be conducted from a greater distance, making it less likely that the officers would lose contact with the object they were tracking and minimizing safety risks inherent in close vehicle pursuits. This process provided relatively imprecise information about the location of the beeper relative to the receiver, required the surveilling officers to remain in-range of the beeper, and did not create any record of the process that could be presented in court independent of the testimony of the investigating officers.

Finally, at the time the CSA was written, law enforcement officers were also able to utilize information from both commercial and state-run databases during criminal investigations. However, the computational systems for storing and


25 Id.


27 Id. at 15.


accessing these data were rudimentary, increasing the difficulty of utilizing them during criminal investigations. For example, the DEA was an early adopter of electronic databases, becoming “the first law enforcement agency in the nation to adopt an all-electronic, centralized, computer database for its records” with the creation of the National Narcotics Intelligence System.32 Entering information into this database required transcribing reports and teletypes.33 Similarly, Prescription Drug Monitoring Program (“PDMP”) databases—state-run repositories of information about dispensed medications—have existed since the 1930s.34 While law enforcement officers at the time could obtain information from PDMPs during criminal investigations, the computational systems available at the time meant that doing so would require accessing information stored on magnetic tape.35

B. Development of Electronic and Technological Surveillance, 1970–2020

Over the course of the last 50 years, there have been dramatic and widespread developments in the electronic surveillance tools available to law enforcement. These changes can be described in terms of several common patterns. First, although some forms of surveillance in use at the time of the CSA’s passage are still in use today, the frequency and context in which these forms of surveillance are used may have changed substantially. For example, while wiretaps were considered a useful investigative tool with “a legitimate law enforcement function”36 in both 1970 and 2020, the number of wiretap requests authorized has risen dramatically in the intervening years: from fewer than 600 requests reported authorized in 1970 to almost 3,000 requests reported authorized in 2018 (the last year for which data is available).37 This increase has been driven largely by an increase in the number of wiretaps authorized to investigate narcotics crimes.38 As can be seen by Figure 1 below, narcotics offenses are now the underlying major offense in the vast majority

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32 The DEA Years, supra note 16, at 36.

33 Id.

34 Richard A. Deyo et al., Measures Such As Interstate Cooperation Would Improve the Efficacy of Programs to Track Controlled Drug Prescriptions, 32 HEALTH AFFAIRS 603, 603–04 (2013).

35 See Whalen v. Roe, 429 U.S. 589, 594 (1977) for a description of how one state’s PDMP was operationalized during this time.


37 The Wiretap Reports, supra note 24.

38 The Wiretap Reports provide information about the most serious crime under investigation for each wiretap authorization reported. Consequently, the apparent increase in the proportion of wiretaps authorized for narcotics-related crimes may be due to increases in the perceived seriousness of the narcotics crimes by the judges and prosecutors reporting these data. Id.
of wiretap authorizations, although this trend may be abating somewhat. At their highest point in 2014, narcotics offenses were the underlying major offenses for almost 90% of all wiretap authorizations in both state and federal court.

Second, surveillance methods in place at the time the CSA was passed have been replaced with other tools that provide more accurate information at lower cost. For example, law enforcement officers now have a wide array of methods for electronically tracking an individual or object’s location, including use of GPS trackers and cell site location information. GPS trackers are small devices that law enforcement officers can attach to the object they seek to track; the tracker can calculate its location by determining its distance to multiple satellites and then record and communicate this information to law enforcement. While superficially similar to radio-transmitting beepers, GPS trackers can provide highly accurate information about the target’s location continuously over a long period of time. Because use of GPS trackers does not require continuous intervention from law enforcement officers, this surveillance can be conducted at a much lower cost.

Furthermore, law enforcement officers now have tools available to them to trace an individual’s location without first placing a tracking device. The percent of people in the United States who own a cell phone has risen steadily over the past two decades; as of February 2019, 96% of the United States population owns some form of cell phone, while 81% own a smartphone. In the course of providing cellular service, telephone companies collect and store extensive and detailed information about the phone’s location—and consequently about the location of the phone’s user. The type of continuous location information obtainable through cellular records is highly identifiable and incredibly sensitive, allowing inferences

39 Table generated using data from the Wiretap Reports. Id.


42 Kerrane, supra note 40, at 1700–01 (“GPS accuracy depends on the type of receiver, but the government reports that typical precision is within eight meters.”).


45 Pew Research Center, Mobile Fact Sheet, PEWRESEARCH.ORG (June 12, 2019) https://perma.cc/F5EM-3LPJ.


47 Yves-Alexandre de Montjoye et al., Unique in the Crowd: The Privacy Bounds of Human Mobility, 3 SCI. REP. 1 (2013).
about such intimate activities as “trips to the psychiatrist, the plastic surgeon, the abortion clinic, [and] the AIDS treatment center.”

Furthermore, cellular service providers are not the only entities that can obtain location information from smartphones. Mobile app developers also frequently collect, store, share, and sell data about the location of their users in order to provide services or obtain information with economic value—information that in turn can be enormously useful to law enforcement. While the Supreme Court has recently clarified that Fourth Amendment protections require law enforcement to obtain a warrant prior to seeking cell site location information from cellular service providers, it is not clear whether and how these protections would apply to the less detailed location information collected by many mobile apps.

Although location surveillance mechanisms are a highly salient part of the policy conversation around electronic surveillance, there is no systematic data on

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48 People v. Weaver, 909 N.E.2d 1195, 1199 (N.Y. 2009).


the frequency or context of their use. However, some data are available from Minnesota, as the Minnesota State Court Administrator is required to publish biennial reports on authorizations for use of certain forms of electronic surveillance, including pen registers, trap and trace devices, and mobile tracking devices.\(^\text{52}\) As can be seen in Figure 2 below, these data suggest that a significant percentage of the mobile tracking orders granted in Minnesota include at least one narcotics crime, and this percentage has increased slightly over time. From 2006 to 2013,\(^\text{53}\) the proportion of mobile tracking orders that involved narcotics crimes increased by almost 35% and more than 70% of mobile tracking orders were granted in the context of narcotics investigations during the most recent year for which data are available.

Third, some surveillance mechanisms with minimal technological components at the time the CSA was enacted in 1970 now involve extensive technological components. One prominent example of this phenomenon would be Prescription Drug Monitoring Programs (PDMPs). Over the past fifty years, the computational infrastructure used to house PDMPs has become significantly more complex and sophisticated, and consequently these data have become more useable during narcotics investigations. Modern PDMPs are now run on commercially-developed software that provides a range of functionality, including algorithmic tools to ensure information accuracy, real-time data availability, and mobile device accessibility. Commercially collected data—such as financial transaction information—has similarly become more extensively collected and available to law enforcement.\(^\text{54}\)

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\(^{53}\) Due to changes in reporting practices after 2013, it is not possible to determine the percentage of mobile tracking orders granted in the context of narcotics crimes for subsequent years.

C. Trends in Present and Future Electronic Surveillance

Some scholars have argued that we are now entering a “golden age of surveillance,” where law enforcement has access to a breadth and depth of commercially-collected information that would have been unimaginable a short time ago. In addition, law enforcement officers have new tools available to help them parse this wealth of information efficiently and effectively. Rather than searching for information on specific individuals or investigations, “[t]he police will rely on alerts generated by computer programs that sift through the massive quantities of available information for patterns of suspicious activity.” These developments can be expected to provide useful new avenues for law enforcement officers investigating narcotics crimes.

However, to the extent that electronic surveillance plays a critical role in investigating narcotics crimes, trends that reduce law enforcement access to electronic surveillance may have a significant impact on narcotics investigations. One such trend is the development of surveillance intermediaries: large technology

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companies that push back against providing information to law enforcement by requiring strict compliance with legal protections, narrowly construing the amount of information they are required to provide in response to law enforcement requests, and contesting information requests through litigation.\textsuperscript{57} Another is the increased adoption of encryption by default amongst manufacturers of consumer devices, which has led to concerns that law enforcement will no longer be able to access sources of communication data that have long been available to them.\textsuperscript{58} Also known as the “going dark” problem, the loss of surveillance mechanisms due to encryption has been identified by policymakers in multiple domains as posing a serious and immediate threat to public safety, causing harms that are “ultimately measured in a mounting number of victims.”\textsuperscript{59}

As data is not generally available on how frequently and in which context law enforcement officers encounter encrypted devices during criminal investigations, it is difficult to analyze the extent to which encryption has and will continue to impact narcotics investigations. Statements by Federal Bureau of Investigation (“FBI”) officials suggest that their agency was unable to decrypt 880 devices in 2016,\textsuperscript{60} while the Manhattan District Attorney’s Office reported that nearly half of the phones received by their High Technology Analysis Unit during a four-month period in 2018 could not be promptly accessed.\textsuperscript{61} Reporting by the Manhattan District Attorney’s Office further suggests that a substantial minority of inaccessible iOS devices were obtained during the course of narcotics investigations.\textsuperscript{62} While the

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\textsuperscript{58} Geoffrey S. Corn, \textit{Averting the Inherent Dangers of “Going Dark”: Why Congress Must Require a Locked Front Door to Encrypted Data}, 72 Wash. & Lee L. Rev. 1433, 1433-34 (2015).


\textsuperscript{60} FBI officials originally stated that they were unable to access almost 8,000 devices during 2017, although that number was later determined to be a “‘substantial over-counting’ due to a calculation error. Lily Hay Newman, ‘Significant’ FBI Error Reignites Data Encryption Debate, WIRED (May 23, 2018), https://www.wired.com/story/significant-fbi-error-reignites-data-encryption-debate/.

\textsuperscript{61} Report of the Manhattan District Attorney’s Office on Smartphone Encryption and Public Safety 2 (2018), https://www.manhattanda.org/wp-content/uploads/2018/11/2018-Report-of-the-Manhattan-District-Attorney27s-Office-on-Smartphone-En....pdf. Note, however, that this does not necessarily mean that half of all phones obtained in the course of criminal investigations in Manhattan during this time period could not be accessed. Investigating officers could choose not to submit phones to the High Technology Analysis Unit if they were able to access the contents of the phone immediately (leading to an overestimation of the prevalence of inaccessible devices) or if they believed that further analysis would be futile in accessing the contents of the phone (leading to an underestimation of the prevalence of inaccessible devices).

prevalence of inaccessible encrypted devices during narcotics investigations cannot currently be estimated, statements by policymakers in the law enforcement community suggest they consider it an immediate and serious problem. According to Attorney General William Barr, “just the damage done by warrant-proof encryption to our ability to combat drug trafficking is a cost too high to pay” and, without the ability to access encrypted devices, “the prospects of prosecuting the drug war by traditional law enforcement means are dim.”

IV. ELECTRONIC SURVEILLANCE DEVELOPMENT AND THE ALLOCATION OF DRUG LAW ENFORCEMENT

Innovations in electronic surveillance have—in many circumstances—extended law enforcement’s ability to obtain information during criminal investigations. In this section, I discuss how these technological changes are likely to induce changes in investigative practices and capacities across the myriad of enforcement agencies in the United States. My first point—that improvements in electronic surveillance tools are likely to increase the amount of information collected during criminal investigations and reduce the cost of obtaining this information—is relatively straightforward to deduce. My second point—that the barriers to using these new electronic surveillance tools are likely to have distributional effects on the types and amounts of electronic surveillance used by law enforcement agencies during narcotics investigations—follows from careful consideration of the barriers to using electronic surveillance. On the whole, this analysis suggests that the developments in electronic surveillance technology will have a disproportionate effect in the context of federal law enforcement, shifting relative investigative capacity toward federal agencies.

63 U.S. Dep’t of Justice Office of Public Affairs, supra note 59.
A. Electronic Surveillance as a Force Multiplier

Electronic surveillance acts as a force multiplier: a tool that can be used by an agency to extend the reach and efficiency of its current employees. Two officers can do the work of an entire surveillance team if they use a radio-tracking beeper to track an individual’s vehicle rather than engaging in a multi-car pursuit. In turn, the pair of officers can dramatically shorten the time it takes them to complete their task if they use a GPS tracker rather than a radio-transmitting beeper. Additionally, some forms of new technological surveillance—such as use of historical cell site information records—can be used to conduct continuous and retrospective surveillance, increasing the effectiveness of surveillance by allowing law enforcement to leverage information collected before the need for surveillance was apparent. All-in-all, these trends suggest that new technologies will increase the returns to surveillance during criminal investigations, in part by allowing expensive manpower requirements to be replaced with less expensive technological alternatives.

As technology reduces the cost of conducting surveillance, we would expect law enforcement to conduct more surveillance. This expectation has emerged as a prominent theme of efforts to regulate law enforcement access to electronic surveillance. As noted by Justice Alito, in United States v. Jones, while “[t]raditional surveillance for any extended period of time was difficult and costly and therefore rarely undertaken” electronic surveillance can “make long-term monitoring relatively easy and cheap,” thus reducing long-standing practical protections for privacy. Indeed, some commentators have gone so far as to suggest that legal protections should be heightened when new forms of electronic surveillance reduce the cost of obtaining information, in order to prevent law enforcement from infringing on privacy expectations by overutilizing cheap sources of information.

Consequently, developments in electronic surveillance technology should improve efficiency in the context of narcotics investigations across a variety of agency types. This increase in efficiency should allow law enforcement agencies to conduct more narcotics investigations, even in the absence of a budget increase. While this effect may be even more pronounced within specialized agencies, where


65 For purposes of this analysis, I will use the term efficiency to refer to the amount of information law enforcement can obtain per dollar spent on a particular form of surveillance. However, I complicate this definition in Section IV.C, describing other ways to understand efficiency in the context of narcotics investigations.


68 Bankston & Soltani, supra note 28, at 354.
Although developments in electronic surveillance technology may have fundamentally transformed the ability of law enforcement to obtain information during narcotics investigations over the past fifty years, it is unlikely that these changes have occurred uniformly across the many agencies involved in policing narcotics crimes. Electronic surveillance is not self-executing: it requires a wide range of knowledge and resources to implement surveillance and use the information obtained effectively in an investigation and prosecution.69 Law enforcement officers face a number of barriers to effectively conducting electronic surveillance. For example, they must have access to the technical equipment necessary to conduct surveillance and be able to troubleshoot when a surveillance method is rendered less effective.70 As I will discuss in this section, the knowledge and resources necessary to overcome these barriers are easier to develop in the context of large, specialized agencies. Consequently, it is likely that specialist narcotics agencies, such as the DEA, are better positioned to take advantage of the technological changes that have facilitated law enforcement access to surveillance over the last fifty years, and mitigate technological and business developments that may restrain law enforcement’s ability to collect information now and into the future.

First, law enforcement must be able to obtain the technical devices and services necessary to conduct electronic surveillance. While electronic surveillance may on the whole make electronic surveillance less expensive, the need to purchase surveillance apparatuses may introduce new types of costs with different effects on surveillance use and behavior. As many traditional forms of non-electronic surveillance are manpower intensive, use of this surveillance generally scales with the amount of surveillance conducted. Consequently, traditional surveillance could be said to have high variable costs and low fixed costs.71 For example, staking out a suspected drug manufacturing location requires posting officers nearby to observe who enters and exits the building. Since the costs of the stakeout are largely dependent on the labor costs of the officers involved, conducting four hours of surveillance should cost approximately twice as much as conducting two hours of surveillance. Because use of electronic surveillance may require purchasing of expensive equipment, use of these forms of surveillance may have high fixed costs and low variable costs. For example, using a cell-site simulator to identify who is in a building over a period of time requires a large initial outlay to purchase the

69 Police, Process, and Privacy, supra note 30, at 61.

70 Id.

71 Variable costs change with the amount of output produced, while fixed costs must be paid regardless of output.
However, once the cell-site simulator has been purchased, many fewer officers are required to conduct surveillance, thus lowering the variable costs of obtaining information.

Fixed and variable costs may have different effects on how much and in what contexts agencies are willing to expend resources on surveillance. Variable costs operate as a faucet, allowing law enforcement agencies to dial in the amount of electronic surveillance that can be supported by their budget. A department with few resources may nevertheless be able to support use of variable cost electronic surveillance in circumstances where the seriousness of the crime and the likelihood that valuable information will result makes expending these resources worthwhile. As variable costs decrease, electronic surveillance use should increase across a wide range of agencies. On the other hand, fixed costs operate as a bridge toll, only allowing access to those agencies who can pay the price of entry. As fixed costs decrease, we should expect to see more agencies adopt a particular electronic surveillance mechanism; as fixed costs increase, we should expect to see the electronic surveillance mechanism used by fewer (and more well-funded) agencies. However, once agencies are able to reach the resource threshold to opt into using a particular surveillance mechanism, the amount of surveillance they are able to conduct will depend on the variable costs associated with using that mechanism. Since these variable costs are frequently low due to the efficiency gains allowed by electronic surveillance, agencies that can afford the upfront fixed costs to use a particular electronic surveillance mechanism may be expected to utilize it frequently. In other words, high fixed cost forms of surveillance create a dichotomy between agencies that have and frequently use the surveillance mechanism, and agencies that cannot afford the upfront costs and therefore never utilize this form of surveillance.

Additionally, to effectively use electronic surveillance, law enforcement needs to be able to adjust and course-correct when technical or business developments restrain their ability to collect information. Trends such as the increased implementation of default encryption on consumer devices and resistance to cooperating with law enforcement information requests by surveillance intermediaries limit the availability of information during criminal investigations and are likely to continue to do so into the future. However, law enforcement officers have several methods at their disposal to mitigate the effects of these developments. Officers confronted with an encrypted device during an investigation may nonetheless be able to obtain the information they seek using an “encryption

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workaround:” a mechanism for circumventing encryption protections to access readable information, perhaps by guessing the password, breaking the encryption, or confiscating the device while it is in use and therefore unlocked. 74 Similarly, law enforcement officers can minimize the friction created when surveillance intermediaries insist on formal legal process and narrowly construe the scope of information they are required to hand over by seeking information from companies that are more likely to quickly hand over information. 75

Although law enforcement officers have several options available to them to mitigate the effects of emerging limitations on information gathering during criminal investigations, the skills and resources necessary to overcome these limitations will be easier to develop in the context of large, centralized, specialized agencies. Encryption workarounds may require the type of “technical expertise and deep pockets” more commonly found in federal agencies than small law enforcement departments. 76 Consequently, as the need to circumvent encryption becomes a more common part of criminal investigations, “[t]his may lead to the federal government taking over certain kinds of state and local investigations.” 77 Similarly, the barriers created by surveillance intermediaries are likely easier to overcome in the context of large, centralized law enforcement agencies, since officers from these agencies have more opportunities to learn how to best frame their requests to minimize the hassle involved in getting information. 78

V. POLICY IMPLICATIONS AND NEXT STEPS FOR THE CSA

In the previous sections of this paper, I have argued that changes in electronic surveillance technology over the past fifty years have fundamentally altered the tools available to law enforcement officers conducting narcotics investigations. This analysis specifically considers how many electronic surveillance innovations decrease both cost and manpower required to conduct criminal investigations, expanding the potential reach of law enforcement. Where changes in communication technology and businesses practices (such as the implementation of default consumer encryption) instead increase the barriers to engaging in electronic surveillance use, these barriers are more easily overcome by specialized and centralized agencies, who are better positioned to develop the expertise necessary to obtain information despite the obstacles. Where new surveillance tools (such as use of cell site simulators) allow the collection of extensive information at low cost

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75 Rozenshtein, supra note 57, at 132.

76 Kerr & Schneier, supra note 74, at 1011.

77 Id. at 1012.

78 Boustead, supra note 73, at 11.
provided that an agency can afford the upfront fixed costs associated with purchasing the tool, well-resourced, specialized agencies are better positioned to bear purchasing costs and reap the benefits of using these tools. On the whole, these trends combine to shift relative investigatory power away from generalist agencies that rely heavily on “boots on the ground” to conduct investigations, and toward specialist, centralized agencies with sufficient funding to supplement limited manpower with electronic surveillance. In the context of narcotics investigations, this will advantage federal agencies like the DEA over local law enforcement departments.

However, even if developments in electronic surveillance are likely to change the dynamics of federal and state enforcement of drug laws, it does not necessarily follow that this change is undesirable, or that policy intervention is required. Indeed, there are several reasons why a shift toward centralized federal enforcement of drug laws could improve outcomes. A greater emphasis on federal drug enforcement could promote efficiency by directing enforcement actions toward agencies with specialist enforcement expertise.\(^79\) Enhancing the role of federal law enforcement and reducing the role of state and local agencies could increase uniformity in enforcement across jurisdictions. Furthermore, while changes in electronic surveillance may shift enforcement of drug laws toward federal law enforcement, it would by no means eliminate the role of state and local agencies. While further centralization of narcotics enforcement may have benefits, in the remainder of this section I argue that it is also a cause for caution, if not concern. I first analyze the federalism concerns raised by the shifting power of the federal government in narcotics investigations, then discuss other potential policy implications raised by these changes and conclude by describing the specific implications of this analysis for efforts to reform the Controlled Substances Act.

A. Federalism Implications of the Shifting Power of Federal Government in Narcotics Investigations

There have long been significant concerns about the federalism implications of expanding federal involvement in criminal law. A 1998 report by an American Bar Association task force cites a number of potential adverse consequences of federalizing criminal law, including creating the potential for the same conduct to be selectively prosecuted in either the federal or state judicial system, thus potentially exposing similarly situated defendants to differential consequences.\(^80\) Shifting criminal enforcement powers to the federal government also undermines state policymaking authority and hobbles important checks against prosecutorial

\(^79\) See Ric Simmons, Ending the Zero-Sum Game: How to Increase the Productivity of the Fourth Amendment, 36 HARV. J. L. & PUB. POL’Y 549 (2013) for an argument for efficiency as an important consideration in surveillance policy,

\(^80\) Baker et al., supra note 9, at 28-29.
overreaching. Unlike local prosecutors—who are generally elected officials and therefore subject to democratic oversight—federal prosecutors are appointed, and therefore restrained primarily by “self-imposed prosecutorial discretion.” Furthermore, reducing the role of local law enforcement in criminal investigations can minimize and undermine local involvement in enforcement of criminal law. By differentially increasing capacity of federal law enforcement to conduct narcotics investigations relative to state and local law enforcement, improvements in electronic surveillance technology may exacerbate many of these concerns.

A shift toward a greater emphasis on federal law enforcement of drug crimes would allow federal authorities more leverage to exert their policy preferences on which types and in what context potentially criminal activities should be investigated. This is particularly concerning as it may weaken long-standing norms protecting state experimentation in criminal law and criminal procedure, and stifle state experimentation with liberalizing drug policy. This effect would persist even if law enforcement agencies from different levels of government engage in information and expertise sharing through intergovernmental cooperation, as federal agencies could refuse to participate in cooperative efforts that do not reflect federal law enforcement priorities. For example, commentators have argued that state laws allowing medical use of marijuana have been effective in part because, as a practical matter, “the federal government does not have the capacity to enforce the CSA against marijuana users.” However, advances in electronic surveillance may undermine pragmatic protections against enforcement of stricter federal cannabis prohibitions, even as against individual users. Had these tools been available

81 Id.
82 Id. at 32–33.
83 Id. at 40–41.
84 Francis A. Allen, The Supreme Court, Federalism, and State Systems of Criminal Justice, 8 DePaul L. Rev. 213, 221 (1959) (“One concept that appears clearly in the earliest decisions involving the due process clause and state criminal procedure is the notion that the states are to be left a wide area of freedom to experiment with new procedural devices and that, within very broad limitations, local policy in the criminal area is to be permitted expression.”).
85 See, e.g., Timothy E. Quill & Diane E. Meier, The Big Chill—Inserting the DEA into End-of-Life Care, 354 NEW ENG. J. OF MED. 1 (2006).
during the early days of state experimentation with medical marijuana legalization, federal officials would have had much more powerful tools at their disposal to investigate marijuana activities that were legal under state law, potentially chilling the development of state medical marijuana markets.

Furthermore, decisions about what types of narcotics activities should be criminally prohibited and the circumstances under which these prohibitions should be enforced have profound implications for the health, safety, and economic welfare of a state’s residents. For example, some commentators have argued that economic pressures created by interventions intended to reduce the availability of opioids have increased the potency of the opioids available in the illicit market, thus worsening the public health harms associated with illicit opioid consumption. Empirical studies have relatedly found that efforts to reformulate prescription opioids to prevent their use for non-medical purposes may have simultaneously increased the rate of heroin overdose, as individuals who had previously used prescription opioids for non-medical purposes instead substituted heroin use. By increasing the ability of federal law enforcement to enforce federal priorities related to narcotics enforcement, electronic surveillance may effectively decouple decisions about the enforcement of narcotics prohibitions from efforts to prevent, minimize, and manage collateral impacts of these prohibitions. This has significant implications for the ability of state and local governments to protect the safety, health, and welfare of their residents, challenging the long-standing role of state and local actors as the primary source of public health and safety laws in the United States federalist system.

Additionally, shifting enforcement of narcotics crimes onto centralized agencies with narcotics expertise, particularly federal agencies, has the potential to undermine the contributions of smaller, more generalist departments to the narcotics investigations process. Small police departments have expertise in the context of their communities, and this knowledge can be a valuable resource during

88 While PDMPs long predate state medical marijuana laws, the collection information about individuals authorized to use medical cannabis and report that information to state PDMPs was not a feature of early medical marijuana laws. See Rosalie L. Pacula, Anne E. Bousted & Priscillia Hunt, Words Can Be Deceiving: A Review of Variation Among Legally Effective Medical Marijuana Laws in the United States, 7 J. DRUG POL’Y ANALYSIS 1 (2014).


investigations. While it may be possible to maintain this expertise as part of the narcotics investigation process through intergovernmental task forces that could help ensure that local expertise remains a part of narcotics investigations, it may be more difficult for small generalist agencies to use their expertise to help guide enforcement priorities without independent surveillance capabilities: “[t]he cooperation that exists between local and federal law enforcement...is at best tenuous.” If state and local law enforcement must rely on task forces and other forms of intergovernmental cooperation to engage in extensive or expensive electronic surveillance use, they may be less able to determine when these forms of surveillance should be used, despite their expertise on the context of criminal activity in their jurisdiction. Furthermore, the assumption that state and local police departments can simply rely on cooperation with federal agencies to conduct surveillance is troubling, given the mixed evidence on the impact of such task forces on crime-related outcomes.

B. Other Policy Implications of the Impact of Electronic Surveillance on Narcotics Investigations

If changes in electronic surveillance technology has increased the efficiency with which law enforcement can obtain information during criminal investigations, the question then becomes how can—and should—these developments in turn shift the priorities and activities undertaken by law enforcement. If federal law enforcement is able to subsume more narcotics manufacturing and sales arrests due to improvements in capacity brought about by electronic surveillance, what role will state and local law enforcement continue to play in investigating narcotics crimes? One possibility is that state and local law enforcement shift more of their attention away from investigating manufacturing and sales offenses and toward investigating possession offenses, as a way to leverage their superior knowledge about the context in which crimes are committed in their community. Another possibility is that, if electronic surveillance allows law enforcement to collect information more efficiently in at least some narcotics investigations, law enforcement decision makers may choose to reallocate resources away from narcotics investigations and toward investigations of different categories of crimes with different implications for public health and safety.


96 For example, the extent that improvements in efficiency lessen demand on investigative resources at the local or state level, this may create an opportunity to address the rape kit backlog that currently exists in many jurisdictions in the United States. See Gelle Ellen Fucci, *No Law and No*
However, not all policy considerations point toward reallocating police investigation efforts to take advantage of the increases in efficiency created by technological change. Electronic surveillance is not costless. While electronic surveillance can provide benefits by allowing for more efficient and effective criminal investigations, it can also pose significant harms to privacy, civil liberties, and separation of powers. Surveillance technologies can potentially cause numerous privacy harms on both the individual and societal level, stifling personal expression, chilling free speech, and interfering with intimate relationships. The role of the judiciary in regulating executive branch agency conduct can be undermined if law enforcement officers can substitute established forms of surveillance that require judicial permission with emerging forms of electronic surveillance that have not yet been legally regulated, particularly where the emerging forms of electronic surveillance are difficult to observe.

Additionally, failing to account for the impact of electronic surveillance development on narcotics investigations, and how this impact may vary across the different types of agencies, can undermine efforts to evaluate the impact of narcotics laws on important public safety outcomes. Without an accurate understanding of the effects of these laws, it becomes difficult to promote policy options that best improve public welfare. This is particularly problematic if, as will be discussed in the next section, policymakers are interested in understanding the efficiency of electronic surveillance not just in terms of the increased ability of law enforcement to collect information at low cost, but in terms of the societal impacts of use of electronic surveillance in narcotics investigations.

C. Implications for Efforts to Reform the Controlled Substances Act

Given the potential harms caused by failing to account for how changes in technology have shifted enforcement of narcotics crimes toward federal agencies, the question then becomes whether and how these harms should be addressed in future efforts to amend the Controlled Substances Act. Considering the impact of electronic surveillance developments on how law enforcement agencies conduct narcotics investigations should be a crucial part of any efforts to reform the CSA. To the extent that the CSA is meant to represent a balance between treatment-oriented and enforcement-oriented responses to the harms caused by drug use, then considering how technology has enhanced the efficiency of narcotics investigations is a necessary and important part of this discussion.


As part of this discussion, policymakers may want to explicitly consider not only the impact of electronic surveillance developments on efficiency in terms of increased information collected at lower cost, but also the impact of electronic surveillance use in narcotics investigations on important societal goals related to narcotics investigations, such as narcotics-related violent crimes or overdose. While conducting these evaluations is currently difficult due to the paucity of information on how, when, and how often the DEA uses electronic surveillance, federal policymakers may find it worthwhile to make such information available such that the public debate around federal narcotics investigations can include a full accounting of the costs and benefits of these investigations.

Finally, policymakers rethinking the role of federal law enforcement in investigating narcotics crimes should consider potential issues raised by the scope of electronic surveillance used by the CSA, and what additional forms of oversight could be brought to bear on this process. Given that federal law enforcement is not directly democratically accountable in the same way as elected sheriffs or district attorneys, policymakers may want to consider creating additional mechanisms for public oversight. For example, one option would be the establishment of a civilian advisory board to consider and advise on surveillance practices, as is already being done in some localities in the United States.99 Lawmakers could also mandate that the DEA publish a yearly transparency report on use of surveillance authorities and tools by the DEA, similar to the reports that are currently published by other government agencies, including the Office of the Director of National Intelligence.100

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