
THE COST-EFFECTIVENESS OF CIVIL REMEDIES: THE CASE OF DRUG CONTROL INTERVENTIONS

by

Jonathan P. Caulkins

Carnegie Mellon University

and

Drug Policy Research Center, RAND

***Abstract:** Civil remedies allow an individual to coerce a third party into taking action against offenders who are imposing hardship on the individual initiating the remedy. Thus, there is a disjunction between the individual who initiates and benefits from a civil remedy and the entity that bears most of the cost of implementing the remedy. At their best, civil remedies can make negligent organizations responsive to the needs of the citizenry. At their worst, civil remedies allow individuals to hijack the resources of well-run and well-meaning organizations and force those resources to be used for private but not necessarily public benefit. This paper discusses the cost-effectiveness of civil remedies for drug control interventions. Given the paucity of evaluation data, it is not possible to provide a point estimate as to their average cost-effectiveness. However, a conceptual framework for understanding cost-effectiveness and rough rules of thumb for assessing the effectiveness of individual interventions are provided.*

INTRODUCTION

There is an emerging literature on the cost-effectiveness of drug control strategies such as source country control, interdiction, domestic enforcement, mandatory minimum sentences, treatment and prevention. This literature draws conclusions such as: seven dollars in social cost are averted for every dollar spent treating heavy cocaine

users (Rydell and Everingham, 1994; Gerstein et al., 1994), and about 23 serious crimes are averted per million dollars spent on federal mandatory minimum drug sentences (Caulkins et al., 1997).

It would be desirable to obtain parallel, quantitative estimates of the cost-effectiveness of civil remedies for drug problems. Unfortunately, there are at least three reasons why this is not possible.

First, there do not exist sufficient evaluation data to support such calculations.

Second, civil remedies are a heterogeneous class of interventions, and there is no such thing as a prototypical or representative program. Nor is there a database cataloguing all such interventions that would allow one to compute the characteristics of an "average" program.

Third, even if one could produce an estimate that, on average, X kilograms of cocaine consumption could be averted per million dollars spent on civil remedies for drug control, that result would not be terribly meaningful. Some people who initiate civil remedies do not make decisions about how to allocate drug control resources across different drug control programs. Indeed, sometimes civil remedies are the only alternative available to the people who pursue them. Furthermore, those pursuing civil remedies are typically not interested in reducing drug consumption in total but rather in ameliorating a more local problem.

Nevertheless, thinking about what it would require for civil remedies to be cost-effective generates interesting insights that are relevant for policy makers contemplating rule changes that would facilitate or deter the pursuit of civil remedies. This paper pursues such an exercise in five sections. The first seeks to clarify from whose perspective the cost-effectiveness calculation should be conducted, and, in the process, identifies two key conditions civil remedies must meet to be cost-effective — whether they seek to control drug problems or other problems. The second section presents a simple conceptual framework for analyzing the cost-effectiveness of drug control programs. The third and fourth sections discuss how likely it is that drug control-oriented civil remedies meet the two key conditions. The final section offers some conclusions.

CIVIL REMEDIES: COST-EFFECTIVE FOR WHOM?

An axiom of cost-benefit analysis is that one must explicitly define who the decision maker is and what perspective the analysis is tak-

ing. For most of the literature on the cost-effectiveness of drug control interventions, the decision maker is implicitly a "benevolent dictator" seeking to advance the interests of American "society" in general. Reifying the complex processes of governmental decision making in this manner is a dubious proposition, but on a fundamental level the government in a democratic society is at least theoretically supposed to serve the interests of the population as a whole. Such simplistic aggregation cannot be justified for civil remedies because of their very nature. This volume defines civil remedies as a tool with which the individual initiating the remedy can coerce non-offending "third parties" into taking some action that helps control the actions of others (the offenders). (For ease of exposition, the individual(s) making the decision to initiate a civil remedy will sometimes be referred to in this chapter as "the plaintiff," even though not all civil remedies are achieved through civil suits.)

This definition underscores the disjunction between the decision maker (plaintiff) who initiates and benefits from a civil remedy intervention, and the individuals or group (the third parties) who bear the burden of implementing the intervention that affects the offenders. This disjunction between the decision maker and the actor responsible for the intervention has important ramifications for any analysis of cost-effectiveness. In particular, it creates the possibility that a civil remedy might be cost-effective for the decision maker who initiates the action, but not for society generally.

Ideally, the third parties have some special power over the offenders that makes it easy for them to take action, and the only reason the third parties have not already acted is that it was not in their selfish interest to do so. In that scenario, the civil remedy can be seen as a way of aligning the interests of the entity empowered to effect change (namely, the "third party") with the interests of society. By solving that incentive incompatibility problem, the civil remedy can bring about an outcome that is better for society generally. The third party is, presumably, less well-off than before. (If taking the action would have improved the third party's welfare, it would have been taken voluntarily and there would be no reason to apply additional pressure.) However, the loss of welfare to the third party may be more than offset by the gain to the individual or group initiating the civil remedy.

The happy ending in this ideal scenario depends on two key assumptions. First, it assumes that the third party has an efficient way of controlling the offender. Second, it assumes that the decision maker's interests are well-aligned with those of society. It is worth

considering what could happen if either of these two assumptions is violated.

First, suppose that the third party can only achieve the conditions the decision maker demands by expending an enormous amount of resources, resources that from society's perspective might better be spent elsewhere. Those initiating the civil remedy have little selfish interest in how wisely those resources are spent, because they are just one or a few of a very large number of citizens or taxpayers. Hence, there may be instances in which it is in the decision maker's interest to compel actions that are not cost-effective from society's perspective. The basic problem is that the decision maker is buying something (relief from the actions of the offender) with someone else's money (the resources of the third parties). Both economics and common sense suggest that such a situation can lead to an inefficient or even irresponsible allocation of resources.

The second necessary condition for the ideal scenario to pertain is that the decision maker's interests are well-aligned with those of society more generally. This is not a singular concern when the decision maker initiating the action is part of an official agency, such as the police or a state attorney's office. That is not to say that such agencies would never pursue a civil remedy that is not in the public interest, but merely that such concerns are no more severe with respect to civil remedies than they are for more familiar agency actions. However, this second condition may be more problematic when the decision maker initiating the action is a private citizen or group of citizens who are interested in ameliorating a very local problem, and who have no direct interest in what happens to people outside their immediate community. If the third party's intervention merely displaces the nuisance to another location, society as a whole may not benefit even though that outcome may be highly valued by the plaintiffs).

A variant on this problem can occur if there are a large number of different individuals who can apply the civil remedy tool to a given third party. For example, there might be one plaintiff for each neighborhood. The common third party might be a city agency that has limited resources that can be spent providing services or responding to civil litigation. Every plaintiff may be better off initiating a civil action than not doing so, even though civil actions reduce the resources the agency can devote to providing services, because the plaintiffs neighborhood may receive a greater share of the agency's limited resources. However, if every neighborhood initiates a suit, their efforts to grab a greater proportion of the pie may be offset, leaving every

neighborhood with the same proportion of a smaller pie. Such a situation would be a classic example of a tragedy of the commons.

To summarize, civil remedies are basically a lever with which someone can coerce another entity into spending that entity's resources to accomplish something for the plaintiff. Thus, one can think of civil remedies as comprising two distinct components: a coercive confrontation between the plaintiff and the third party, and the action taken by the third parties against the offender(s). Both are costly to society, but only the second directly generates benefits; the first guides the nature of the benefits but does not generate benefits itself. Hence, (1) if the action(s) taken by the third parties against the offender(s) are not cost-effective, the civil remedy as a whole cannot be cost-effective. Likewise, (2) if what the plaintiff demands is not good for society, the civil remedy will not be cost-effective for society. Hence, whether civil remedies are cost-effective for society depends on, among other things, whether these two key conditions are satisfied.

The remainder of this paper explores the extent to which these two conditions are likely to be satisfied in the case of drug control interventions. The next section lays the groundwork by describing a simple conceptual framework for understanding the cost-effectiveness of drug control programs. The subsequent section considers the ability of third-party interventions to control drug use; the final section considers the alignment of plaintiffs and society's interests.

FRAMEWORK FOR UNDERSTANDING DRUG CONTROL PROGRAMS' EFFECTIVENESS

We wish to explore the extent to which tactics that third parties commonly employ in response to a plaintiffs civil pressure are likely to be cost-effective. One framework for understanding drug control interventions envisions actions taken to control drug problems as operating in one of three ways: 1) reducing the quantity of drugs consumed; 2) reducing the magnitude of "the drug problem" per kilogram consumed; or 3) displacing the problem from one location, time, population, etc. to another.

It is possible to reduce the magnitude of the drug problem per unit consumed (#2), because quantity consumed is only a surrogate or proxy for the magnitude of the drug problem (Reuter and Caulkins, 1995). The magnitude of the drug problem is some agglomeration of intoxication-based functional impairment, numbers of overdoses, amounts of drug-related crime and violence, etc. There is no physical

law that mandates a constant ratio among these different elements of the drug problem or between them and consumption. For example, the number of drug-related homicides per kilogram consumed may vary depending on the involvement of gangs in retail sales, marketing trends, and the nature and intensity of police enforcement.

One intervention can generate more than one type of outcome. For example, when police shut down an outdoor street market, there might be some reduction in selling and use (#1), some displacement of the selling to another location (#3) and some displacement to more covert forms of dealing that impose fewer harms on neighbors per gram sold (#2) (Caulkins, 1992).

Typically, when one thinks about the effectiveness of drug control interventions, one begins by estimating their impact on use (#1) and then considers (sometimes less quantitatively) their impact on harm per unit use and displacement. This division is useful here, because it turns out that the second and third ways in which drug control actions work are most conveniently considered in conjunction with how well plaintiffs' interests are aligned with those of society.

Drug control interventions can reduce consumption by reducing demand, constraining supply, or driving a wedge between supply and demand. Demand can be suppressed by treating current users or preventing people from initiating or escalating use in the first place. The mechanisms through which these interventions operate are easy to understand, so there is no need to elaborate.

Analyzing the effect of interventions on supply and their ability to drive a wedge between supply and demand requires more explanation. Enforcement against suppliers can reduce consumption by driving up the dollar price of drugs, and/or by driving up the non-dollar costs users pay in order to obtain drugs. The first is captured in "risks and prices" calculations of the sort pioneered by Reuter and Kleiman (1986). The second considers user sanctions and the impact on "search time" of interventions that make it difficult for retail sellers and customers to find each other and complete a transaction (Moore, 1973; Kleiman and Smith, 1990).

The "risks and prices" paradigm recognizes that increasing enforcement risks for dealers raises their cost of doing business. Dealers could simply absorb those costs, but presumably prefer — at least in the long run — to pass increased costs along to users in the form of higher retail prices. Drug users, like consumers of other goods, respond to higher prices by reducing consumption (van Ours, 1995; Saffer and Chaloupka, 1995; Grossman et al., 1996).

The "search time" argument recognizes that the costs drug users pay to obtain and consume drugs are not limited to the dollar price paid to the dealer. Users also must expend time and effort in order to locate a dealer and complete a transaction. To the extent that this activity is unpleasant and/or the users could have done something else valuable with the time they spent obtaining drugs, this time and inconvenience represent a true cost of using drugs. Raising these costs would presumably discourage use to some extent, even though the costs are not paid for in dollars.

Finally, enforcement against users can also raise non-dollar costs associated with drug use. These costs include the risk of arrest and sanction from the criminal justice system, as well as social approbation and reductions in future licit labor market earnings that are sometimes associated with such an arrest. These costs are perhaps the least well-studied or quantified; they are also the least relevant for this paper because civil remedies rarely seek to apply sanctions to drug users.

Source country control, border interdiction and domestic enforcement against high-level dealers operate primarily through the "risks and prices" mechanism, because they do not affect retail sellers or users directly and it is rare for high-level interventions to create physical scarcity (as opposed to higher prices) for mass market drugs such as marijuana, cocaine and, to an increasing extent, heroin.¹ In contrast, although retail enforcement certainly imposes costs on suppliers ("risks and prices"), it can also force retail sellers to be more discreet (raising "search time") and sometimes involves user sanctions. Furthermore, local enforcement can affect harm per unit use and displacement more directly than can higher level interventions.

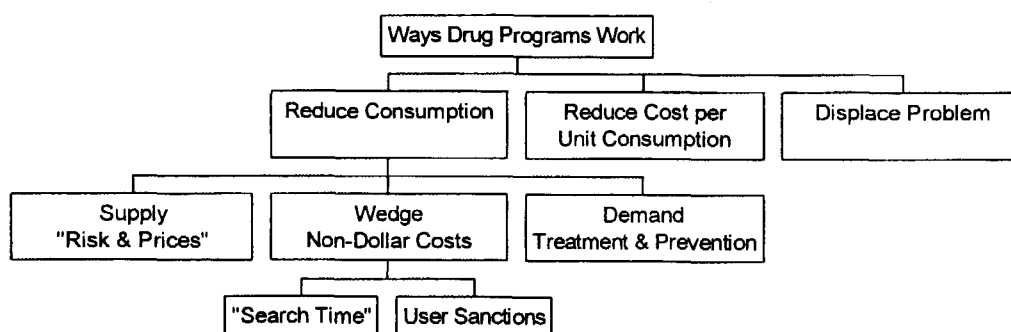
This framework for understanding drug control interventions is summarized in Figure 1. With this framework in mind, we turn to the question of whether the actions coerced by civil remedies are likely to be cost-effective ways of controlling drug use.

THIRD PARTIES' ABILITY TO CONTROL DRUG USE COST-EFFECTIVELY

Civil remedies span a range of scenarios and interventions. We focus on two: individual demands for greater drug control efforts on the part of a government agency, and interventions that shut down particular dealing locations. This focus should not be construed as an endorsement of these two forms or a statement that they are the most

promising. Rather, they seem to be the two most common types of interventions, and they are two about which some cost-effectiveness calculations can be performed. We also briefly mention a third, treating drug users, as a foil. The calculations focus on cocaine because it has been the subject of the most prior analysis.

Figure 1: Framework for Understanding Drug Control Programs' Effectiveness



Stimulating Local Drug Enforcement

Sometimes the plaintiffs are individuals demanding greater drug control efforts from government agencies, typically the police. For the moment, we will set aside the problem that greater resources for one neighborhood might be obtained by reducing services elsewhere. Suppose the civil remedies stimulate greater total expenditures of resources on local drug enforcement. How cost-effective are such efforts likely to be? This question is worth answering both for its own sake and because it lays the groundwork for evaluating civil remedies that impose costs on drug sellers; for example, by evicting them from apartments.

Domestic enforcement in general has been found to be substantially more cost-effective than supply-side interventions further upstream (such as source country control and border interdiction), but less effective than treating heavy users in terms of kilograms of consumption averted per million program dollars spent (see, e.g., Rydell and Everingham, 1994). In particular, risk and price calculations es-

estimate that domestic enforcement against cocaine suppliers averts an average of 27.5 kilograms of consumption per million dollars spent (Caulkins et al., 1997, updating Rydell and Everingham, 1994).

The 27.5 kilogram per million dollar figure represents an average over all types of enforcement against suppliers pursued within U.S. borders, including state, local and federal efforts. However, the actions arising from citizen complaints are usually directed at street markets occupied by retail dealers, and, from a risks and prices perspective, higher level domestic enforcement is more efficacious than is retail enforcement. For example, local enforcement can arrest, prosecute and incarcerate 120 typical retail cocaine dealers at a cost to the taxpayer of 1 million dollars, thereby averting 9.1 kilograms of cocaine consumption.²

Hence, risk and price calculations suggest that greater local enforcement stimulated by civil remedies would not be very cost-effective. Before accepting that conclusion, however, one should augment these estimates with estimates of the consumption reduction that can be achieved by driving up search times. The literature does not contain such estimates and relevant data are sparse, so the best we can do is make some very rough calculations using data from heroin users.

Rocheleau and Boyum (1994) interviewed experienced heroin users about their purchasing patterns. The heroin users took an average of 35 minutes to make a purchase and spent an average of \$26 per purchase. If these users valued their time at \$7 per hour, this suggests that non-dollar search-time costs represent 14% of the combined search time plus the dollar cost of obtaining heroin.³ If the elasticity of demand for heroin is around -1, which is a plausible estimate of the elasticity of demand for cocaine (Caulkins et al., 1997), this implies that any program that doubles the average search time for heroin users could reduce consumption by about 14%.

Suppose, for the sake of argument, that arresting a user's primary supplier imposes an additional search time cost on the user of 100 hours. This additional search time includes both the time taken to locate an alternative dealer and an ongoing increment in search time associated with protective measures dealers take in response to the increased risk of arrest. This 100-hour estimate may be optimistic given that just 4% of the study subjects reported knowing only one or two dealers, and more than half reported being approached by dealers on a regular basis. Nevertheless, to the best of my knowledge, there is absolutely no empirical basis for the magnitude of such a number. I invite the reader to pick one that he or she feels is reason-

able and follow through the calculations with that number. If the reader believes this number should be 200 hours, the reader will want to double my estimate of the search-time component of retail enforcement's ability to reduce consumption. If the reader believes this number should be 50 hours, he or she should halve my estimate.

Rocheleau and Boyum (1994) found that users made an average of 13 purchases per week, implying a total annual search time of $13 \text{ times/week} * 52 \text{ weeks/year} * (35/60) \text{ hours/search} = 394 \text{ hours}$. Thus, given the assumption above, arresting a user's dealer would raise his or her annual search-time cost by about $100/394 = 25\%$, leading to a $25\% * 14\% = 3.5\%$ reduction in consumption.⁴

If these heroin figures are applied to the cocaine market, then arresting every retail cocaine seller one more time per year would reduce cocaine consumption by 3.5% of the national total of about 291 metric tons, or about 10,185 kilograms. How much would it cost to arrest every retail cocaine seller? There are on the order of 1 million retail cocaine sellers,⁵ so if 120 such sellers can be arrested per million dollars, the total cost would be about \$8,333 million. Thus, subject to the rather heroic assumptions made, the search-time impact of retail enforcement might increase the efficacy of retail enforcement by about 1.2 kilograms per million dollars spent, from 9.1 to 10.3 kilograms per million dollars — an amount that is still well below the cost-effectiveness of domestic enforcement generally or of treatment.

Thus, to the extent that civil remedies simply stimulate additional local drug enforcement, they are not likely to be a cost-effective way of reducing drug use. If such stimulation of local enforcement is to be cost-effective, it must be so by virtue of its ability to reduce the harm per unit of drugs sold and consumed.

Forcing Dealers to Move

Many civil remedies involve forcing dealers to change location by evicting them; boarding up abandoned buildings that have become selling locations; or purchasing, renovating and selling units to stable tenants. The plaintiffs can be private citizens or government agencies. Shutting down a dealing location does not reduce dealing and use by an amount equal to the volume that was transacted at that location, because the dealers can often relocate and/or the users can find other dealers. Nevertheless, shutting down a dealing location can reduce dealing and use, not just move it, to the extent that moving is costly for dealers and users. Inconvenience to users was discussed earlier. If adding 100 hours of search time reduced use by 3.5%, then

since an average heavy cocaine user consumes about 120 grams per year, that suggests that a rough rule of thumb is 1gram of consumption averted for every 25 hours of additional search time generated for users.

Risk and price models provide a similar rule of thumb for costs imposed on dealers. On average one must impose \$71,000 in costs on cocaine dealers in order to drive up prices enough to reduce consumption by one kilogram (Caulkins et al., 1997). Hence, if an intervention can impose two dollars in cost on dealers for every dollar of resources expended on the intervention, that intervention would be, on average, as cost-effective as domestic enforcement.

Shutting down a dealing location can impose both costs on dealers and inconvenience on users, and the benefits of doing so are cumulative. If it cost the dealers \$2,000 to relocate and the 20 users who frequented the location an average of 25 hours of inconvenience time each, a point estimate of the associated consumption reduction would be about 48 grams, or over 40% of a year's consumption for a typical heavy user.⁶ If a civil remedy could shut down such a dealing location for \$1,750 or less, it would be on average as cost-effective as domestic enforcement. If it cost \$450 or less, the civil remedy would be as cost-effective as treating heavy users.

It is not clear whether an intervention such as coercing a landlord to evict a drug-dealing tenant meets this criterion. Anecdotal reports suggest that pursuing civil remedies can be a lengthy and time-consuming process for individuals (e.g., Meyers, 1995; Schmitz, 1995). State attorney's offices and police can often coerce landlords into action with a simple letter or a phone call (Mazerolle et al., this volume; Lurigio et al., this volume; Eck and Wartell, this volume), but one must also include the costs to the landlord, which can easily exceed \$1,750 (Smith and Davis, this volume).

The empirical work has not been done to estimate how disruptive it is for dealers and users to have a location shut down, so it is unknown whether the estimates of \$2,000 in cost to dealers and 25 hours per user for 20 users are reasonable. However, rules of thumb for converting such costs into consumption reductions are useful guides, even if they are highly imprecise.

Treatment

Even if civil remedies for drug control are not very cost-effective in an absolute sense, they might still be worth pursuing if no better alternative strategies were available. That may be the case for individu-

als, but is not so for the government. It is well-established that treating heavy users can be a cost-effective way of reducing drug use (Rydell and Everingham, 1994; Gerstein et al., 1994), averting on the order of 100 kilograms per million dollars spent.⁷ It is also well-established that people who are coerced into treatment do as well, in general, as people who enter treatment voluntarily (Anglin and Hser, 1990). Hence, local resources could profitably be devoted to expanding treatment, either in traditional forms or in conjunction with the criminal justice system as in TASC, drug courts or coerced abstinence programs.

Note that civil commitment to treatment is a viable drug control option, but, despite its name, it does not fit the civil remedy model considered here. Civil commitment is an action taken directly against the offender (the user), not a third party (unless the plaintiff brought suit against a user's guardian, seeking to compel the guardian to commit the user to treatment).

Summary

The range of third-party actions that civil remedies induce is broad. Certainly some are likely to be cost-effective. However, it is not obvious that the most common tactics civil remedies coerce third parties to employ (local drug enforcement and shutting down dealing locations) are cost-effective at reducing drug use either in an absolute sense or relative to alternatives available to government agencies (e.g., conventional domestic enforcement and treating heavy users).

DECISION MAKERS' INTERESTS VERSUS THOSE OF SOCIETY

A belief that civil remedies are not cost-effective for controlling drug use does not imply that they are not cost-effective for controlling drug *problems*. It is possible to reduce the magnitude of the drug problem per unit of consumption or use. For example, interventions might target particularly problematic selling or use and displace those activities into less damaging locations or forms. Such a belief would mean, though, that it is necessary to achieve such targeting if civil remedies are to be cost-effective ways of controlling drug problems. This is related to the question of whether the interests of the plaintiffs who initiate civil remedies are well-aligned with those of society. In particular, are they better aligned than is typical of actions

taken under drug control programs that do not involve civil remedies?

The potential for such alignment is great because of civil remedies' grassroots character. Dealers who sell without generating many obvious negative externalities (e.g., do not intimidate neighbors, carry a gun, employ children as lookouts, etc.) are not likely to be the focus of a civil remedy. Conversely, particularly heinous offenders are the most likely to attract the wrath (and energy) of the citizenry. That enmity can manifest in a civil action filed by a private citizen, or in the form of complaints that direct the actions of official agencies pursuing civil remedies.

Of course official agencies operating through conventional procedures also try to prioritize their actions in response to perceived and reported problems. However, agency decision makers are one step removed from the citizens who are experiencing the problems. Civil remedies empower individuals and communities to direct action at the dealers, users and street markets that cause them the greatest problems. Hence, one might expect them to be well-aligned with society's interests. There are, however, reasons why this expectation might be overly optimistic. Two were discussed above. Plaintiffs may be satisfied with improving their lot at the expense of others, and civil actions allow plaintiffs to buy relief with someone else's resources. These are concerns with respect to all forms of civil remedies, but the fluid nature of drug markets makes them particularly problematic in this context.

Drug markets are notorious for their ability to adapt to assaults of various forms. Sometimes they adapt in ways that reduce the overall level of the drug problem, as when a flagrant market is pushed underground. It is not uncommon, though, for the adaptation to take the form of simple physical displacement, in which case the intervention's principal effect may be to move the problem, not reduce it. To the extent that this happens, societal resources are expended (specifically, the third party's resources), making some people better off (including the plaintiff) and other people worse off (those living around locations to which the activity is displaced), with perhaps no net reduction in the magnitude of the drug problem. The fact that the people who benefit are readily identifiable and those who are hurt are diffuse may make the benefits easier to see than the costs, but it does not make the costs any less real or important.

An implication is that rules governing civil remedies should be designed in a way that discourages plaintiffs with parochial interests from demanding interventions that have a reasonable likelihood of

leading to physical displacement. Unfortunately, at least at present, there does not exist a set of interventions against particular drug markets with which no reasonable chance of displacement is associated. This suggests that civil remedies should be made available only to those who are likely to care about the welfare not only of residents surrounding the current market, but also of those who might suffer from displacement if it were to occur.

The implications of possible displacement are the most significant qualification to the optimistic view that civil remedy plaintiffs will tend to pursue actions that further societal interests, but two others will be discussed briefly.

Will Civil Remedies Be Applied Where the Need is Greatest?

All citizens are entitled to equal protection under the law, yet some classes of citizens suffer vastly more at the hands of drug-law violators than do others. Residents of poor, urban areas plagued by flagrant retail drug markets are famously ill-served by conventional drug control in this respect. Civil remedies are available to all citizens and so they offer the promise of helping to rectify the disparity in damage done by drug dealing.

In practice, however, it takes resources and a certain amount of sophistication to pursue civil remedies. Such remedies initiated by neighborhood groups require ongoing attention over an extended period. Although programs have been successfully launched in poor neighborhoods, residents of highly transient neighborhoods may have difficulty banding together quickly or persistently enough to carry through a suit successfully.

Attorneys are not required to bring a civil suit (Weingart, 1993), and are financially prohibitive for some. Even when an attorney is not used, better educated plaintiffs may, on average, be more successful at winning their day in court. A brief and informal survey of cases reported in the press and academic literature suggests that civil remedies are initiated by professionals living in neighborhoods of mixed socioeconomic status more often than they are by members of the underclass (although there may be a selection bias affecting which cases are reported).

To those who view neighborhoods of mixed socioeconomic status as singularly important to the health of cities, the possibility that a program might not help the neighborhoods in greatest need is not an argument against supporting that program. To others, though, civil

remedies might seem less appealing to the extent that they help the affluent, the educated and the well-connected further protect their neighborhoods at the expense of residents with fewer resources who already suffer a greater burden, on average, of the problems associated with drug markets.

Do Civil Remedies Ever Punish Bad Outcomes Instead of Bad Intentions?

Civil remedies are premised on the third party's dereliction of duty, as evidenced by the existence of a nuisance that aggrieves the plaintiff. For example, a landlord is held responsible because a tenant in one of his or her buildings is selling drugs.

An axiom of decision analysis is that good decisions can lead to bad outcomes and vice versa. A corollary in this context is that good intentions and faithful execution of a customary level of care do not guarantee the absence of a nuisance on one's property. Hence, punishing for the existence of a nuisance can result in punishing not just the irresponsible but also the unlucky. For example, even a landlord who screens potential tenants carefully may not be able to detect and reject everyone who might at some point sell drugs from their apartment. If and when such selling occurs, the landlord may view him or herself as the victim and consider the police to be at fault for failing to deter the crime. Yet, through civil remedies, the landlord can be forced to bear both the personal risk of confronting and evicting the dealer and the associated financial costs.

If most landlords welcomed drug dealers as tenants or willfully turned a blind eye toward such activity, the proportion of sanctioned landlords who were irresponsible rather than unlucky would likely be modest. But many landlords claim they were not aware of the drug nuisance on their property (Lurigio et al., this volume), and landlords already have incentives — besides the risk of civil remedies — for not renting to drug dealers (Hayes, 1994; Smith and Davis, this volume).

What can happen once to an individual through bad luck can happen several times, albeit with lower probability. As the number of civil remedies pursued increases, the expected number of such occurrences grows as well. If a landlord were unlucky enough to have two or three tenants sell drugs within a certain period of time, the plaintiff might construe that as evidence of willful lack of cooperation and respond by seeking a more punitive remedy. In Oakland, CA, the Uniformed Controlled Substances Act (which declares a building to be a nuisance if it is the site of drug use, not just dealing) gives the

city the power to fine the owner and close or sell the property (Mazeroles et al., this volume). Such actions have been taken in some jurisdictions (George, 1997). Shutting down a property is not an insignificant punishment, particularly given that many landlords are small businesspeople of modest means, not large corporations with deep pockets (Eck and Wartell, this volume; Lurigio et al., this volume). Criminal law interventions can also inadvertently punish "innocent" people, but the low burden of proof and broad powers of forfeiture associated with civil cases make this concern more salient (Cheh, this volume).

CONCLUSION

The policy question pertaining to civil remedies is whether the government should take actions to facilitate or encourage the use of civil procedures for drug control. From the perspective of cost-effectiveness the answer is clearly, "It depends." It is easy to imagine civil remedies that are sufficiently beneficial for society to be actively encouraged. Likewise, it is easy to imagine civil remedies that are sufficiently ineffective, or even outright harmful, to not be encouraged or facilitated. Unfortunately, it is generally not obvious what policies or rules would encourage only the "right" kinds of civil interventions. One possible exception pertains to who initiates the action. Since a key concern is whether the plaintiffs interests are well-aligned with broader societal interests, it would seem less risky to encourage government agencies to seek civil remedies than to have private citizens do so.

It remains an open question whether in practice the preponderance of civil remedies are cost-effective. In theory one could collect information about a range of civil interventions, characterize them according to how beneficial they were, and design policies that encourage those that are beneficial and discourage those that are not. Practically, this would be a formidable task. The best that can be done at present is to provide a framework for understanding and discussing the issues.



Address correspondence to: Jonathan P. Caulkins, Carnegie Mellon University, H. John Heinz III School of Public Policy and Management, 5000 Forbes Ave., Pittsburgh, PA 15213-3890.

REFERENCES

- Anglin, M.D. and Y. Hser (1990). "Treatment of Drug Abuse" In: James Q. Wilson and M. Tonry (eds.), *Crime and Justice: An Annual Review of Research*, vol. 13. Chicago, IL: The University of Chicago Press.
- Caulkins, J.P. (1992). "Thinking About Displacement in Drug Markets: Why Observing Change of Venue Isn't Enough." *Journal of Drug Issues* 22:17-30.
- C.P. Rydell, W.L. Schwabe and J. Chiesa (1997). *Mandatory Minimum Drug Sentences: Throwing Away the Key or the Taxpayers' Money?* Santa Monica, CA: Rand.
- George, D.E. (1997). "Is There Another Way to Stop Drug Trafficking?" *The NarcOfficer* (January/February):36.
- Gerstein, D.R., R.A. Johnson, H.J. Harwood, D. Fountain, N. Suter and K. Malloy (1994). *Evaluating Recovery Services: The California Drug and Alcohol Treatment Assessment (CALDATA)*. Sacramento, CA: California Department of Alcohol and Drug Programs.
- Grossman, M., F.J. Chaloupka and C.C. Brown (1996). *The Demand for Cocaine by Young Adults: A Rational Addiction Approach*. Working Paper 5713. Cambridge, MA: National Bureau of Economic Research.
- Hayes, L. (1994). "Creating a Drug-Resistant Property." *Journal of Property Management* 59:28-31.
- Kleiman, M.A.R. and K.D. Smith (1990). "State and Local Drug Enforcement: In Search of a Strategy." In: Norval Morris and Michael Tonry (eds.), *Crime and Justice: An Annual Review of Research*. Chicago, IL: University of Chicago Press.
- Meyers, L. (1995). "The Home Rangers." *LA Magazine* (40)2:80-87.
- Moore, M.H. (1973). "Achieving Discrimination on the Effective Price of Heroin." *American Economic Review* 63:270-277.
- Office of National Drug Control Policy (1996). *The National Drug Control Strategy: 1996*. Washington, DC: author.
- Reuter, P. and J.P. Caulkins (1995). "Redefining the Goals of Drug Policy: Report of a Working Group." *American Journal of Public Health* 85:1059-1063.

- Reuter, P. and M.A.R. Kleiman (1986). "Risks and Prices: An Economic Analysis of Drug Enforcement." In: M. Tonry and N. Morris (eds.), *Crime and Justice: An Annual Review of Research*, vol. 7. Chicago, IL: University of Chicago Press.
- Reuter, P., R.J. MacCoun and P. Murphy (1990). "Money from Crime: A Study of the Economics of Drug Dealing in Washington, DC." Santa Monica, CA: Rand.
- Rocheleau, A.M. and D. Boyum (1994). "Measuring Heroin Availability in Three Cities." Washington, DC: U.S. Office of National Drug Control Policy.
- and M.A.R. Kleiman (1993). "Measuring Heroin Availability: A Demonstration." Washington, DC: U.S. Office of National Drug Control Policy.
- Rydell, C.P. and S.S. Everingham (1994). *Controlling Cocaine: Supply vs. Demand Programs*. Santa Monica, CA: Rand.
- Saffer, H. and F. Chaloupka (1995). "The Demand for Illicit Drugs." Working Paper No.5238, Cambridge, MA: National Bureau of Economic Research.
- Schmitz, A. (1995). "Who Cares About Frogtown?" *Minneapolis/St. Paul* 23(7):54-57, 121-25.
- van Ours, J.C. (1995). "The Price Elasticity of Hard Drugs: The Case of Opium in the Dutch East Indies, 1923-1938." *Journal of Political Economy* 103:261-279.
- Weingart, S.N. (1993). "A Typology of Community Responses to Drugs." In: R.C. Davis, A.J. Lurigio and D.P. Rosenbaum (eds.), *Drugs and the Community*. Springfield, IL: Charles C Thomas.

NOTES

1. Since some suppliers are also users, most supply control programs that involve incarceration also incapacitate a certain amount of demand.
2. This assumes that: 70% of those arrested are convicted; 60% of those arrested are incarcerated; the average time of incarceration is 90 days; \$750 worth of drugs but no other assets are seized per arrest; no fine is paid; and the disutility of incarceration is equivalent to \$25,000 per cell year. Police costs are assumed to be \$2,000 per arrest, adjudication costs are \$1,262 per arrest plus \$3,884 per trial (with 15% of those arrested going to trial), and incarceration costs are \$24,972 per cell year (Caulkins et al., 1997).

3. $13.6\% = (\$7 * 35 \text{ minutes} / 60 \text{ minutes per hour}) / (\$7 * 35 / 60 + \$26)$. A parallel calculation using the median time to purchase (30 minutes) and purchase value (\$20) would suggest that 14.9% of the total cost of obtaining heroin is attributable to search time.

4. Parallel calculations with figures from Rocheleau and Kleiman (1993) yield very similar results.

5. The retail value of the cocaine market was between \$30 and \$40 billion between 1988 and 1993 (Office of National Drug Control Policy, 1996). Reuter et al. (1990) estimate that a regular (more than once a week) cocaine retailer in Washington, DC sold an average of \$4,570 worth of cocaine a month (median was less than \$3,600), and that there were 22 dealers for every 14 full-time equivalent dealers. Thus, there are about $(22/14) * \$35\text{B} / (\$4,570 * 12 \text{ months/yr.}) = 1,003,000$ retail cocaine dealers.

6. $48 \text{ grams} = (\$2,000 / \$71,000 \text{ per kilogram}) * 1,000 \text{ grams/kilogram} + (20 \text{ users} * 25 \text{ hours/user}) / 25 \text{ user-hours per gram}$.

7. In round numbers, according to Rydell and Everingham (1994), about 80% of users do not use during the 0.3 years they are in treatment and otherwise would have consumed at a rate of 120 grams per year. Also, on average, 13% of those entering treatment will not be heavy users after treatment as a result of that treatment. One-third of those cease use altogether, averting a future net present value (NPV) of 1 kilogram of consumption. Two-thirds use at a reduced rate akin to that of a light user, i.e., consuming an NPV of 165 grams, not 1,000 kilograms. Thus, the expected reduction in consumption by the treated individual is about 144 grams. Reducing demand by one person shrinks the market, allowing other interventions to focus on the smaller, residual market and, thereby, become more effective. This effect creates a "market multiplier" for demand interventions of about 1.25, so each treatment leads to a reduction of $145 * 1.25 = 180$ grams. Since the average treatment costs \$1,740, this implies treatment can avert about 103 kilograms per million dollars spent.