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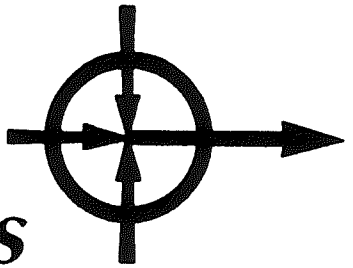

Policy Analysis

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Anatomy of the Heroin Problem: An Exercise in Problem Definition

MARK H. MOORE

The definition of a social problem can substantially affect the choice of policies to deal with the problem. Often it is desirable to define a problem in terms of three considerations: the attributes of the world that enter directly into utility functions and are likely to be affected by either the persistence of the problem or the policy instruments used; the policy instruments available; and the causal variables that will determine how effective the various policy instruments can be. It is in these terms that the author proposes a definition of the heroin problem.

The definition of a policy problem has more than semantic importance. If the purposes of a policy are too narrowly described, then important effects of policy proposals can easily be ignored or undervalued. If important variables affecting the behavior of the relevant system are overlooked, then significant opportunities or constraints on policy choices may be missed. In either case, the policy recommendations will be inappropriate.

For heroin policy, the definition of the problem is particularly critical. Consider alternative definitions and their implications for government policy.

Some see the objective of heroin policy as simply the reduction of heroin consumption. Abstinence is desirable, even if no other

This article is drawn from the introduction to the author's Ph.D. dissertation, "Policy towards Heroin Use in New York City" (Harvard University, 1973). Many of the questions left unresolved in that introduction are confronted here. For their helpful comments on this paper, the author thanks Howard Raiffa, Richard Zeckhauser, and James Vaupel.

behavioral changes occur. Recommended policies include the establishment of detoxification programs, in-patient psychiatric hospitals, and stringent restrictions on the supply of heroin. Excluded by the definition of objectives are methadone maintenance and the legal prescription of heroin.

For others, the objective is to improve the quality of the user's life. Any improvement in health, economic independence, or self-esteem is desirable, even if the individual continues to use heroin. Consequently, methadone maintenance and the legal prescription of heroin are seen as appropriate policies.

Still others define the objective as protecting others in the society from the dangerous behavior of users. Hence, all reductions in crimes committed by users are desirable. Jail and compulsory treatment become the appropriate instruments.

Similarly, some assume that the major variable influencing the behavior of users is their heroin consumption. If users suddenly stopped consuming heroin, their health would improve, their dignity and autonomy would be enhanced, and their crimes would be reduced. In this view, methadone maintenance and detoxification should secure broad, effective leverage on the behavior of individual users.

Others assume that the prohibition of heroin is the culprit. If users' real incomes were not drastically reduced by the high price of illegal heroin; if their control over their time were not disrupted by arrest, failure to make a connection, or intoxication from too heavy a dose of heroin; if they did not have to devote all their emotional energy to the compelling task of overcoming these obstacles —then they could lead self-controlled and dignified lives. Here, permitting the legal prescription of heroin is the recommended policy.

Finally, others assume that the set of opportunities confronting users is a major factor influencing both the predisposition to use heroin and much of the individual's behavior after he or she has become a user. In this view, policies that expand opportunities are necessary and sufficient both to prevent heroin use and to improve the behavior and condition of current users.

In the literature, these views have been disguised under a variety of slogans. The "law enforcement approach" is contrasted with the "medical approach." Policies attacking "symptoms" are contrasted with policies attacking "root causes." A narrow focus on heroin rather than on drug abuse in general is judged as obviously "suboptimal." These slogans, functioning as definitions of the heroin problem, have arbitrarily narrowed the range of reasonable objectives, created prejudices about effective policies, and led too quickly to overconfident conclusions.

The purpose of this article is to define the heroin problem in a way that avoids the narrow prejudices of the slogans. First I will list the attributes that should be included in any description of the heroin problem; and I will discuss the objectives that government should pursue in light of these attributes. Then, after identifying the major classes of policy instruments that can wield some influence, I will present a simple, causal anatomy that allows us to reason from the proximate effects of policy instruments to their aggregate impact on the problem.

ATTRIBUTES OF THE PROBLEM AND THE GOVERNMENT'S OBJECTIVES

Table 1 identifies those attributes of the world that are significantly affected by heroin use or by the policies designed to control it; the table also gives some indications of the current state of the heroin problem in New York City.

It is not clear how many of these effects occur as a necessary consequence of heroin use in and of itself. It may be that heroin users[1] are people who would be unhealthy, poor, degraded, dangerous, and expensive to the public regardless of their addiction. If they all stopped using heroin tomorrow (or if they never had used it), their behavior and condition might be roughly the same as it is now.[2] It

1. I will generally refer to "heroin user," not "heroin addict," to signal clearly that I do not accept uncritically the old stereotypes about how users behave or the old beliefs about the physiology of heroin use. Later in the paper I propose a typology of users that includes eight different types. Only one of these is called an "addict"—his behavior most closely resembles the behavior of the stereotypical addict—and, while I estimate that this type accounts for a substantial proportion of all users (around 30 percent), it still represents only a minority. Consequently, when speaking of the entire population of users, I will say "user"; and when speaking of "addicts," I will mean that one type of user.

2. This hypothesis clearly leads to the judgment that it is pointless for a user to stop taking heroin. The same judgment follows from a second hypothesis: if the users had never taken heroin, they would now be in good condition; but, since their deterioration comes from long periods of heroin

may also be that the only reason heroin users behave so badly and suffer such intolerable conditions is that they are forced to purchase heroin in an illicit market. If heroin were legally available in inexpensive, sterile, and predictable doses, the user's behavior and condition might improve dramatically.[3]

The general issue of what causes users to behave as they do is encountered repeatedly in any analysis of the heroin problem. What is at stake in deciding this issue are presumptions about the ability of different policy instruments to improve the behavior and condition of users. If you judge that heroin use in itself determines much of the user's state, then you recommend policies that are designed primarily to reduce heroin consumption. If you judge that it is only the *illicitness* of heroin consumption that is at fault, then you recommend abandoning the current policy of prohibiting heroin use.[4]

use, it cannot be dramatically changed simply by their giving up the drug. Both hypotheses generally suggest that the user's condition is influenced more by previous behavior than by current heroin consumption.

But the hypotheses differ significantly in their implications for the value of preventing heroin use. The first implies that prevention is not important; the user would be the same with or without heroin. The second implies that prevention is very important: while it does little good for the user to stop now, he would have enjoyed an attractive life if he had never started. This is a kind of "virginity principle": the value is in preventing initiation; once initiated, the person can hardly be retrieved. I lean toward the second hypothesis. I see the long-run effects of heroin use as critical—opportunities are lost, attitudes change, legitimate skills become obsolete, health deteriorates, relations with family and friends become unpleasant, etc. After eight years of use, a person simply does not have the capabilities and opportunities he had before he started.

Preventing initiation remains vital even if you believe that many of the long-run effects of heroin use are bad *only* under a prohibition policy, particularly since the policy stigmatizes users by giving them criminal records: if it looks like the prohibition policy will be continued, it is essential to prevent new people from becoming users.

3. See, for example, A. R. Lindesmith, *The Addict and the Law* (New York: Vintage Books, 1965). In another paper, where I examine the issue closely, I find that there is a reasonable chance that legal prescription would have very good effects *or* very bad effects. Thus, while the expected value of the policy may be great, I argue for both additional experimentation and a continued reliance on policies that may have lower expected values but also smaller variances. See my "Policy towards Heroin Use in New York City."

4. Note that if you think *illicit* heroin consumption is the problem, you should be satisfied not only with policies that make all heroin use legal but also with policies that (*a*) reduce heroin use entirely or (*b*) reduce illicit heroin use by substituting the legal consumption of something else for the consumption of heroin. All three types of policy would presumably obviate

I raise the issue here, not to resolve it, but to prevent misinterpretation of table 1. The assertion that the various effects are attributes of the heroin problem should not be read as an assertion that these effects occur largely as a result of heroin use in itself. We should make no presumptions about the efficacy of the various policy instruments until we have examined the behavior of users more closely. The purpose of the table is simply to provide a comprehensive and orderly accounting scheme for noticing important changes in the heroin problem or the effects of using any particular instrument to deal with the problem.

The government's objectives should comprehend all the attributes of the problem. More specifically, the government should seek to—

1. improve the health of users;
2. enhance the dignity and autonomy of users;
3. reduce the crimes committed by users;
4. reduce the contagiousness of heroin use;
5. bolster the morale of the society;
6. reduce the public resources absorbed by heroin users.

It is in terms of these objectives and the more detailed attributes listed in table 1 that we should describe the state of the heroin problem and evaluate the impact of specific policies and programs.

I list six objectives, despite the controversy over which ones are the proper concern of government.[5] There are many who feel that government should intervene in private decisions only when these have a harmful effect on others. Those who hold strongly to this notion argue that government should be concerned only with the "external effects" of heroin use, such as crime and contagion. They

the problem of high prices, irregular access, and unpredictable quality attending illegal heroin use. You should recommend the legal prescription of heroin as the sole policy only if you believe that it is easier to legalize heroin than to reduce all heroin consumption or to replace heroin with some other legal good *and* if you believe that legalization will not change other objectives of the society. But, while these views about implementation and the other objectives of society seem reasonable, they should not be accepted as true *a priori*. They should be subject to argument and evidence.

5. I am deeply indebted to Professor James Q. Wilson for emphasizing the importance of this controversy, for neatly delineating the sources of the controversy, for providing eloquent language to express the alternative views, and for persuading me that the third view (that society may have an obligation to enhance the quality of a citizen's life) is a reasonable one, particularly in the area of heroin addiction.

TABLE 1. ATTRIBUTES OF THE HEROIN PROBLEM

Attributes of the Heroin Problem			Indicators of the Problem in New York City
Effects on Users	Health	Mortality	Mortality rate among users is approximately 1% per year;[1] 20-year-old user has the same life expectancy as a 50-year-old nonuser.[2]
		Morbidity	Nearly all tetanus cases are users;[2] Nearly all users contract clinical or subclinical hepatitis.[2]
		Intoxication	Roughly only 2 out of every 12 hours are spent being "straight";[3] Many users abuse alcohol.[4]
	Dignity and Autonomy	Economic Independence	Average income for users in legitimate work is estimated at $3,300;[5] 20–30% of users in New York City are on welfare; around 50–60% of users report borrowing from family as a source of money.[6]
		Conventional Responsibilities	Over 50% of cases of child abuse in New York City involve families of users;[2] ⅓ of users never help out former wife or family.[7]
		Satisfaction with Life	
Effects on Others	Crimes	Economic Losses to Victims	An estimated ¼ to ½ billion dollars worth of property is stolen by heroin users in New York.[8]
		Private Costs of Protection	⅓ of people in a ghetto neighborhood have purchased special locks and alarms for their homes.[9]
		Fear and Anxiety	⅓ to ½ of people in a ghetto neighborhood walk only on certain streets;[9] ¼ to ⅓ in the same area do not go out alone at night.[9]
	Contagion		Around 90% of heroin users received their first dose of heroin from another drug user.[10]
	Public Resources	Special Services to Users	Federal, state, and local governments spend a total of $100–150 million on programs specifically directed at heroin users.[11]
		Share of General Services	Roughly $60 million are provided to heroin users through welfare.[12] Roughly 20% of all felony and misdemeanor indictments are for narcotics crimes.[13]
		Value of Facilities to Others	People avoid using parks, recreational facilities, etc., because of a distaste for coming into contact with users.
		Impact on Tax Base	Many wealthy citizens respond to a large population of users by migrating out of the city.
	Morale of Society	State of Civil Rights	Commitment procedures are widely attacked as threats to civil liberties but are also justified as major instruments of heroin policy.[14]
		Power of Organized Crime	Profits to organized crime from the sale of heroin are estimated at $24 million.[8]
		Integrity of Law Enforcement	In enforcing narcotics laws, police are offered bribes of $50–70,000.[15]
		Degree of Upward Mobility	"Users come from homes of better socioeconomic circumstances than do non-users."[16]
		Moral and Aesthetic Preferences	

NOTE: The sources for this table are listed in Appendix A.

insist that there is no effect of heroin on the individual user that justifies government intervention. Users may become diseased, may feel trapped in a life-style they do not like, may be dependent both psychologically and economically on family and friends, but this is no cause for government intervention. People are free to choose their own roads to hell.

Others favor government intervention in private decisions when the decisions have significant consequences that the decision maker is either unable to determine or incompetent to evaluate. Thus, the government is authorized to prevent children (and others who do not fully understand the consequences of heroin use) from gaining access to heroin.[6] Ordinarily, one assumes that denying access may be achieved by a "regulatory policy." Consequently, the government is authorized to have such a policy. But what if regulatory policy fails? In this case it is not clear whether the government should impose a "prohibition policy," for, while successful in denying access to children, such a policy would infringe on the decisional rights of presumably competent adults.

Still others feel that government has the obligation to motivate and help each of its citizens to enjoy a life that is consistent with current views of human dignity:

> In this conception of the public good, all citizens of a society are bound to be affected—indirectly but perhaps profoundly and permanently—if a significant number are permitted to go to hell in their own way. A society is therefore unworthy if it permits, or is indifferent to, any activity that renders its members inhuman or deprives them of their essential (or "natural") capacities to judge, choose and act.[7]

This view permits government intervention not only to reduce external effects, and to prevent heroin use among those not able to

6. One way of justifying intervention in the decisions of children is to argue that a 15-year-old will not be the same person when he reaches 35. But the 15-year-old's decisions and actions, the argument continues, affect the set of opportunities, and hence the utility, of the person aged 35. Thus, the behavior of one person (the person at age 15)) has an important external effect on a different person (the same person at age 35), and government intervention is rationalized as a way of controlling the production of negative externalities. I am indebted to Richard Zeckhauser for pointing this out to me.

7. James Q. Wilson, Mark H. Moore, and I. David Wheat, "The Problem of Heroin," *The Public Interest*, no. 29 (Fall 1972).

estimate the consequences, but also to enhance the dignity and autonomy of individual users.

If we were to strain to resolve this controversy, we might narrow the set of government objectives and simplify future analysis. However, I am not willing to decide on the appropriate set of government objectives until I see what the consequences of having a limited set would be. Since we are still uncertain about the precise effects of various policies and about the importance we should attach to the various effects, it seems best to let the ones presented in table 1 remind us of everything that might be at stake in choosing (or keeping) any specific policy toward heroin use.

POLICY INSTRUMENTS

The policy instruments that the government can use to manipulate the attributes of the heroin problem are numerous and diverse. In this section I sort the heterogeneous set of instruments into subsets about which I can make general observations. Within these subsets, the comparisons of specific instruments are simple and revealing.

Differences in Scope

One of the most important differences among policy instruments is their relative breadth or narrowness of scope. Some policies are designed to influence a broad range of behavior; others are not. Some are designed to influence only those people who are currently using heroin; others target a much larger segment of the total population. Thus, we can define the scope of a policy in terms of (1) the range of behavior the policy is designed to influence; and (2) the population group the policy affects. Table 2 presents a large number of policy instruments and distinguishes among four subsets of policies according to differences in scope.

Policies Attacking "Symptoms" vs. Policies Attacking "Causes"

Policies that differ in scope are sometimes loosely distinguished as those that attack "symptoms" of the heroin problem and those that attack its "root causes." Presumably, policies attacking symptoms are those designed primarily to reduce heroin consumption among people currently using the drug (see the fourth column of table 2). Policies attacking causes have broader scopes: they seek to influence more aspects of behavior than simply heroin consump-

TABLE 2. SCOPE OF ALTERNATIVE POLICY INSTRUMENTS

Policies That Influence the Behavior of the General Society		*Policies That Influence the Behavior Only of People Already Using Heroin*	
Policies That Influence a Broad Range of Behavior	Policies That Influence Heroin Consumption Only	Policies That Influence a Broad Range of Behavior	Policies That Influence Heroin Consumption Only
1	2	3	4
Macro employment policies	Prohibition of all sales and use of heroin	Therapeutic communities	Ambulatory detoxification
Welfare programs	Drug education programs	Individual psychotherapy	"Barebones" methadone maintenance
Public health programs	Early detection and quarantine programs	Methadone maintenance with ancillary services	
Anti-poverty programs	Antagonist immunization programs	Probation and parole	
Job-training programs		In-patient psychiatric hospitals	
Prohibiting discrimination in hiring		Sheltered work programs	
Juvenile delinquency programs			
Jails and prisons			

tion and generalize their influence to a larger portion of the total population (column 1).

The classification in terms of symptoms and causes produces ardent judgments about the relative merits of specific programs: it strongly implies that policies attacking symptoms are cynical, impermanent, inefficient, or otherwise undesirable, and that policies attacking causes are self-evidently superior.

There is a sound instinct in this. If you define the objectives of heroin policy as broadly as I have done, you must intuitively judge that a policy restricted to reducing the heroin consumption of current users will not have a substantial impact on the problem. Too much of the user's adverse behavior and unhappy condition will

persist despite the reduction in heroin consumption. Too many people whose behavior we would like to influence—siblings, parents, spouses, neighbors—will remain out of reach.

But if a sole reliance on narrow policies would be a mistake, so might a sole reliance on broader ones. There are two reasons to believe that the broader policies would fail. First, such policies in general have had much weaker effects than expected on the overall behavior and condition of people: many of the great social programs of the sixties failed to improve the lives of those they were designed to serve. The time for great confidence in the magical effects of anti-discrimination laws, job training, and antipoverty agencies has passed. Second, because heroin users are separated from society by racial discrimination, by discrimination against people with criminal records, and by their own poor attitudes, health, and skills, they tend to be among the last aided by expansion in employment or extension of general social services. Even when broad policies are aggressively pursued, users require special attention and support to overcome the remaining barriers. Such attention and support can be provided only by policies with somewhat narrower scopes: in some cases, the very narrow policies will be sufficient for this; but in others, more comprehensive and intensive programs (column 3) will be required. Thus, there is an important complementary effect among programs with different scopes: combinations are likely to provide greater leverage than any one class of policy pressed alone.

Note that the programs listed in column 3 raise a special issue: Why should a program designed to do much more than simply reduce heroin consumption be restricted to heroin users? Many of the rehabilitative techniques employed by these programs are *generally* applicable. Presumably, there are other disadvantaged, degraded, and dangerous people in the world who might benefit from them as much as or more than heroin users could. Consequently, equity might demand that these programs be accessible to nonusers as well as users.

There are two arguments for restricting them to heroin users. First, one can argue that heroin users are generally much more degraded, unhealthy, and dangerous than other poor people; because they are among the worst off in society, they deserve special attention. Second, one can argue that heroin users are unusually susceptible to treatment in social programs: While it is hard to have any impact on the habits, attitudes, and skills of ordinary poor peo-

ple, there is something about heroin users that makes it easier for them to make dramatic improvements in their behavior and condition. Once we relieve them of the compulsion to use heroin, they spontaneously rehabilitate themselves or become more amenable to guidance that leads to rehabilitation. Since we know that methadone maintenance programs are much more successful than manpower programs in obtaining employment for their clients, and much more successful than most probation systems in reducing crime, there is some reason to believe the second argument.

It is not important to *resolve* this issue. But it is important to keep it in mind. If heroin users are not necessarily "worse off" than the general population of poor people, and if they do not improve unusually dramatically in social programs, then the restriction of programs may be difficult to justify. But if they are "worse off," or if they do show dramatic improvements in treatment, then the justification is easier.

The Scope of Prevention Programs

The policy instruments listed in the second column of table 2 affect the general population and seek to influence behavior only with respect to heroin consumption. By definition, programs with this particular scope are prevention programs: they are aimed at people not now using heroin and seek to reduce the probability of their using it in the future.

The very scope of such programs points to the central problem in their design: how can we concentrate them on those vulnerable to heroin use rather than diffuse their effects to the general population? It is difficult to distinguish the vulnerable from the immune, and failure to do so leads to unavoidable mistakes in deciding when and where to begin the prevention program. Many vulnerable groups will be ignored. Thus, although we would like to narrow the scope of prevention programs to affect only potential heroin users, such programs are, in fact, directed at a relatively undifferentiated general population.

Supervised Programs: Custody vs. Treatment

The policy instruments in the last two columns of the table are similar in two important respects. First, they concentrate their effects on people who are currently using heroin; this distinguishes

them from the general policies (column 1) and the prevention policies (column 2). Second, they achieve their effects by combinations of rehabilitative services and direct supervision of the user's behavior.

The differences among these programs are equally important and are not all captured by the distinctions in table 2. The table indicates that the programs differ with respect to the range of behavior they are designed to influence. A second difference has to do with the extent of the programs' direct supervision and rehabilitative services. For example, therapeutic communities offer extensive supervision and extensive rehabilitative services. Jails offer extensive supervision but few rehabilitative services. Ambulatory detoxification programs offer little of either. A third major difference concerns durability of improvement: virtually all the programs can improve the user's behavior and condition while he remains under direct supervision; but relatively few (perhaps none) can claim that these improvements persist for extended periods after supervision is removed.

A natural distinction that many draw among these supervised programs is between those that provide "treatment" and those that are "custodial." There are several strong connotations associated with this classification. One is that treatment programs are more likely to bring about broad, durable improvements in the user's life. Custodial programs can achieve either broad on narrow influence, but the effect is assumed to last only as long as the user remains a participant and under direct supervision. A second connotation is that treatment programs are concerned primarily with the individual user's health and dignity and only secondarily with protecting others in the society from the effects of his unfortunate situation. Consequently, they are assumed to provide extensive rehabilitative services and only minimal custody. Custodial programs are assumed to be concerned mainly with protecting society and only secondarily with the health and dignity of the individual user; accordingly, they are assumed to provide more control over the user's life and less rehabilitative service. Finally, a third connotation is that, while users voluntarily seek treatment programs, they must be coerced into entering custodial programs.

Again, there are sound observations and judgments captured by this natural distinction. However, the distinction can also be mis-

leading. Hasty classification of a program can lead us to assume the presence of characteristics that the program does not in fact have; or it can lead us to make these assumptions with more confidence than is merited. Table 3 presents a conventional classification of programs under the treatment and custodial categories and then explores the nature of the programs far more explicitly by attending to the following five questions:

- How broad is the achieved change in behavior?
- How durable is the achieved change in behavior?
- Does the program affect primarily the user's health and dignity or his impact on others in the society?
- What is the relative investment in rehabilitation compared with custody?
- Is participation in the program voluntary or compulsory?

While the judgments revealed in the table are all debatable, they suggest that the conventional classification creates distinctions among programs that may actually have roughly comparable effects and blurs distinctions among programs that may be quite different.

The detailed analysis of these programs will be left to another paper. It is sufficient here to note that the five questions listed above can be used in evaluating supervised programs that compete as alternative instruments for directly influencing the behavior of individual users.

A SIMPLE MODEL OF THE HEROIN PROBLEM

The Need for a Model—The large number of objectives and the diversity of policy instruments complicate the design of heroin policy. There are too many things to take into account. Consequently, we need a model of the heroin problem that allows us to concentrate on small components without losing sight of how these components fit together to make the larger problem. Ideally this model would—

1. suggest simple terms for summarizing and comparing the effects of diverse policies;
2. identify the major, distinct components of the heroin problem that can be attacked by government intervention;
3. facilitate the sorting of policy instruments into subsets that attack the same component of the problem;

TABLE 3. SIMILARITIES AND DIFFERENCES AMONG SUPERVISED PROGRAMS: CONVENTIONAL AND UNCONVENTIONAL VIEWS

Conventional View	View When Attributes of Program are Explicitly Described				
Treatment Programs	*Supervised Program*	*Breadth and Durability*[1] *of Influence*	*Levels of Services and Supervision*	*Effects on Users vs. Effects on Others*	*Willingness of Users to Volunteer*
1. Therapeutic communities	1. Therapeutic communities	Broad and Short	High levels of both	Large effects on both	Low
2. NACC Rehabilitation facilities	2. NACC rehabilitation facilities	Moderately broad and short	Modest services; high supervision	Primarily on others	Low
3. Methadone maintenance	3. Methadone maintenance	Moderately broad and short	Modest services; modest supervision	Moderate effects on both	High
4. Methadone maintenance without ancillary services	4. Methadone maintenance without ancillary services	Moderately broad and short	Low services; modest supervision	Moderate effects on both	?
5. Ambulatory detoxification	5. Ambulatory detoxification	Very narrow and short	Low levels of both	Small effects on both	High
Control Programs	6. Jails and prisons	Broad and short	Low services; high supervision	Primarily on others	0
1. Jails and prisons	7. Probation	Broad and moderately long	Modest services; high supervision	Moderate effects on both	0
2. Probation	8. Parole	Broad and moderately long	Modest services; high supervision	Moderate effects on both	0
3. Parole					

[1] Durability refers to the period of time over which changes in behavior are maintained *after* direct supervision ceases.

4. alert us to interdependence among attacks directed at different components;
5. explicitly introduce the dynamics that cause the size and character of the problem to change over time.

We can construct a simplified but useful model from a few basic observations.

Strategic Objectives of Heroin Policy: Reducing the Number of Users and Improving their Behavior and Condition

A heroin problem begins with a population of people who use heroin. It is largely their behavior and condition that generate the adverse consequences of heroin use. If these people did not commit crimes, recruit new addicts, purchase heroin from an organized criminal industry, loiter in parks, kill themselves with overdoses, start fires in abandoned buildings, suffer withdrawal symptoms, beg money from friends and relatives, and so on, there would be no heroin problem. If they did them less frequently, the problem would be less severe.

The seriousness of the heroin problem is also affected by the *number* of people who use heroin. If there were no heroin users, there would be no problem. If there were fewer users, there would be a smaller problem.

These basic observations imply that the strategic objectives of heroin policy should be to (1) reduce the number of people who use heroin; and (2) improve the behavior and condition of current users.

Indeed, we should be able to summarize virtually all the important effects of heroin policy in terms of changes in the number of users or changes in the behavior and condition of users. These are the simple terms we need to summarize and compare the effects of widely divergent programs.

Given our two strategic objectives, the factors that determine the number of users and influence their behavior and condition should be the targets of government policy. To the extent that these factors can be manipulated by policy instruments, they represent opportunities for successful government intervention. To the extent that they lie beyond the reach of policy instruments, they will frustrate and constrain government efforts.

Factors Determining the Number of Users

The factors that determine the number of users are the rates at which people become and cease being heroin users. One can think about these rates as flows into and out of the population of users. The important flows *out* of the population include—

1. the rate at which users voluntarily abstain from heroin use;
2. the rate at which users die;
3. the rate at which users participate (voluntarily or involuntarily) in various kinds of supervised programs;
4. the rate at which users are "cured" by various kinds of programs.

The important flows *into* the population of users include—

1. the rate at which nonusers become users;
2. the rate at which users abandon, escape, or are released from supervised programs;
3. the rate at which users who have been "cured," or who have voluntarily abstained, relapse into heroin use.

Small changes in the relative sizes of these flows can lead to surprisingly large differences in the number of users to be tolerated over the next 5 to 10 years. Consequently, each of these flows should be an important target of government programs and policies.

In general, the government's objectives should be to expand flows out of the population and reduce flows into the population. The obvious exception is the objective to reduce the rate at which users die: deaths among users constitute a major cost of the heroin problem and signal the failure of government programs.

Factors Influencing the Behavior and Condition of Users

Ordinarily we assume that a major factor influencing the behavior and condition of the heroin user is his level of heroin consumption. If he suddenly stopped using heroin, we reason, he would enjoy better health, have more money to spend on rent and food, and commit fewer crimes. This belief—that heroin use in itself exerts a pervasive influence on the user's behavior—is the major reason why we see the consequences of his behavior as the cost of

heroin use rather than of poverty, discrimination, or unequal educational opportunity. But, while it would clearly be wrong to assume that heroin use has *no* effect on the user's behavior and condition, it seems even more mistaken to assume that the use of the drug, in and of itself, accounts for *all* of his state.[8]

A second major factor influencing the user's behavior and condition has to do with the habits, skills, and attitudes that shaped his life before he went on heroin. While heroin use, compared with other occupations and hobbies, imposes a fairly rigid structure on the individual's life, it does not completely transform it. Even among those who become desperately addicted, significant elements of their lives prior to addiction remain a part of their lives following addiction. And for the many who avoid becoming deeply involved with heroin, the influence of their pre-addiction life on their present life is much stronger. Thus, much of the user's behavior results simply from continuation of the attitudes, skills, and habits that marked his life before he became a user. Presumably, his behavior will not change unless his attitudes, skills, and habits change.

A third influential factor is the set of opportunities accessible to users. The conventional wisdom is that users are trapped by their dependence on heroin: if only they could rid themselves of it, they would enjoy much better lives. An alternative view is that they have significant discretion over whether they remain heroin users, and

8. I identified this issue earlier as one that will persistently intrude into any analysis of the heroin problem and affect presumptions about the efficiency of various policy instruments. To recapitulate briefly, if the user's bad behavior is caused largely by heroin consumption, then the policy should be simply to reduce consumption through detoxification and methadone maintenance. If it is caused by the user's previous skills, attitudes, and habits, then we may have to invest in training, remotivation, and the provision of detailed daily routines through therapeutic communities and sheltered work. If the available set of opportunities determines the user's behavior, we may have to expand that set through macro-employment policies, antidiscrimination efforts, and improved education. If the illicitness of heroin use is at fault, then we might consider the legal prescription of heroin.

In my "Policy towards Heroin Use in New York," I argue that, for many users, heroin use is less important in determining behavior than the junkie stereotype would lead us to believe. This places an upper bound on what can be accomplished with policy instruments that succeed only in reducing heroin consumption. Even so, it seems clear that, compared to other ways of influencing a person's behavior, simply reducing heroin consumption is relatively effective and easy. But this is truer for some types of users than others. Moreover, it is less certain than we would like. Consequently, there are strong reasons to begin experimenting with programs that have somewhat broader scopes in dealing with individual users.

that the reason they so often do is that the alternative careers and lives available to them are not more attractive. Adopting this view, one would expect that changes in their level of unemployment, changes in the degree of discrimination against them (as either addicts, ex-cons, or members of minority groups), and even changes in their marital status would have some important effect on their behavior and condition. Of course, the extent to which any one user responded to a change in opportunity could be significantly influenced by his level of heroin use and by his attitudes, habits, and skills; but, given any level of heroin consumption and any set of attitudes, habits, and skills, one would expect to see some change in the user's behavior and condition in response to a change in his set of opportunities.

A fourth factor is the user's participation in supervised programs. To some extent, these programs influence the individual's behavior by changing factors we have already identified—that is, by reducing his consumption of heroin; by altering his skills, attitudes, and routines; and by enlarging the set of opportunities available to him. However, they also influence his behavior simply by achieving some level of supervision over a portion of his day. Consequently, even if a supervised program were to fail in all its efforts to change the other factors governing the user's behavior, it would probably achieve some change simply by interrupting the user's daily routine.

Of profound impact, finally, is the fact that the manufacture, distribution, and possession of heroin are prohibited throughout the United States. Because of this policy, the user faces high prices, unpredictable quality, and irregular access in trying to buy heroin; these difficult supply conditions significantly reduce his autonomy, increase the crime rate, and often result in death. In addition, the user is subjected to arrest, bears the stigma of those who are arrested, and is barred from many opportunities by his own desire for anonymity and by the desire of those who control the opportunities not to associate with criminals. While there is room for disagreement about the policy's precise effects and their desirability, there is no doubt whatsoever that prohibition has an enormous impact on the behavior and condition of users.

There are significant interdependencies among all these factors. For example, supply conditions have an impact on the user's behavior only as long as he continues to consume some amount of heroin; so, if a program were to eliminate his consumption of heroin, the addition of a policy to improve supply conditions would have

no additional impact on his behavior and condition. I have already suggested other interdependencies: the set of alternative life styles available to the user is influenced by his level of heroin consumption, his individual skills and attitudes, and the policy of prohibiting heroin use; and the influence of supervised programs derives partly from their success in changing the user's level of heroin consumption, his skills and attitudes, and his set of opportunities. The extensive interaction among these factors implies that, when a change occurs in a user's behavior and condition, it will be difficult to discover which of the factors has changed or which changed first.

A Simple Diagram Illustrating the Targets of Government Action

I have identified the major factors determining the number of heroin users (the various flows into and out of the population of users), and I have identified the major factors influencing the behavior and condition of users. Figure 1 comprehends *most* of these factors in a simple diagram, the purpose of which is to help us organize our analysis of the heroin problem.

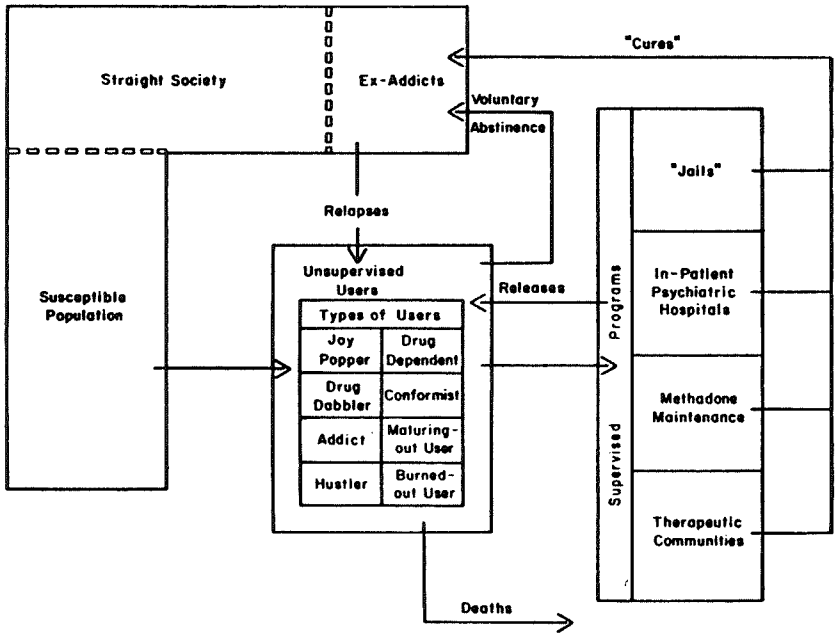

Figure 1. A Dynamic Model of the Heroin-Using Population

NOTE: Types of users are described in Appendix B.

The factors determining the number of users are straightforwardly represented by the arrows connecting the various states in the model. You can visualize the government's objectives as contracting the arrows *into* the population and expanding the arrows (but not the death arrow) *out* of the population.

The factors influencing the behavior and condition of users are represented much less straightforwardly. Indeed, two of the major factors (the set of opportunities and the prohibition of heroin) are not explicitly represented at all. Perhaps the easiest way to think of these factors in terms of the diagram would be to imagine a box drawn around the entire system, with these factors influencing that box.

The influence of levels of heroin consumption and the pre-addiction life-style of users is captured by distinguishing among eight different types of users. These types represent different combinations of heroin consumption and pre-addiction life-style. The government's objective is to increase the proportion of users who have relatively good life-styles (for example, maturing-out users and conformists) and to reduce the proportion who have relatively poor life-styles (for example, burned-out users, hustlers, and drug dependents).

The diagram captures the influence of supervised programs by distinguishing between users participating in these programs and users on the street. The government's objectives in this area are to increase the number of users in supervised programs, increase the numbers in specific kinds of supervised programs, and exploit the comparative advantages of programs in treating special types of users.

The failure of the figure to represent the prohibition policy and the set of opportunities available to users is dangerous to the extent that we are led to ignore the possibility of improving heroin policy by manipulating these factors. The danger is particularly grave because both factors influence not only the users' behavior but also their number. Consequently, in any analysis of the problem, one should take care to consider the impact of these factors and the potential for manipulating them.

Relationship between the Model and the Effects of Heroin Use

Table 1 described a variety of adverse effects that are ordinarily assumed to flow from heroin use: the poor health of addicts, their

loss of autonomy, and so on. It is these effects that ultimately matter to society. Consequently, they are the criteria by which we should *ultimately* evaluate the impact of policies to deal with the heroin problem.

However, they are *not* the proximate targets of government policy instruments. Indeed, by suggesting that all the effects that concern us are caused directly by heroin use, table 1 implies that there is only one target of heroin policy—the level of heroin consumption. In this section I have suggested that there are many factors besides the level of consumption that determine the ultimate magnitude of the heroin problem. Identifying these other factors broadens the array of opportunities for government intervention. In addition, I have indicated the interdependence of the various factors. Thus, figure 1 offers a strategic view of opportunities for attacking the heroin problem, while table 1 defines the terms in which we must ultimately evaluate the impact of specific strategies or policy instruments.

We should use the simple model to order the sequence in which we analyze diverse policy instruments, to alert ourselves to forgotten opportunities and important interdependencies that can be exploited, and to develop rough notions of how specific policy instruments can be packaged into concerted overall strategies. We should use table 1 as a guide for detailing the effects of specific programs and making the final choice among overall strategies.

CONCLUSIONS

The appropriate way of testing the definition of a policy problem is to see if it has heuristic value for investigating the problem and making policy recommendations. Often this heuristic value derives from the specification of "intermediate" analytic categories and an explicit identification of the logical and empirical relationships that link them. The "intermediate" analytic categories expose and suggest differences in detail but organize the rules of comparison. The specification of the logical and empirical linkages alerts the analyst to redundancies, important complementary effects, and missed opportunities. If there are many suggestive categories, and if the logical and empirical links are intricate but well defined, then the analyst's agenda is filled with interesting questions to consider and important effects to trace. Whether he marches through the

agenda with intelligence and imagination is another matter; but we will not be able to attribute his failure to a superficial, ad hoc definition of the problem. I hope that the definition proposed in this paper will create as interesting and compelling an agenda for other analysts of the heroin problem as it has for me.

APPENDIX A

Sources for Table 1

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15. New York State Commission on Investigation, *Narcotics Law Enforcement in New York City* (New York, 1972), pp. 138–39.

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APPENDIX B

Figure 1: Types of Users

Joy Poppers use heroin regularly but not intensively, reserving weekends or special occasions for their sprees. Included are most young, beginning users from lower-class families (white, black, and Puerto Rican), who become interested in heroin during adolescence because it is risky, precocious, and potentially pleasurable. Many have delinquent orientations and skills before starting on heroin; others will become delinquent around the time they begin use. Practically none will significantly increase their criminal activities solely because of a desire for more heroin. A large minority of the group will stabilize at low rates of consumption for long periods of time

and thereby gain status for having avoided "getting hooked." Another large minority will give up heroin use because it frightens them or becomes inconvenient. A bare majority will advance to higher rates of use in one of the behavioral patterns described below.

Drug Dabblers use heroin in the context of experimenting with a variety of drugs. Most suburban and college heroin users are in this category. Their affluence and casual drug use makes it unnecessary for them to become criminals. They substitute among drugs freely according to availability and fads. Most (those who have no psychological problems, suffer few stresses, and never get close to reliable sources of heroin) will stabilize at infrequent, low levels of use or abandon heroin entirely. But some will find drug use in general and heroin in particular satisfying and advance to intensive use of drugs of all kinds.

Addicts (high drugs, high crime) fit the usual stereotype of heroin users. They consume heroin frequently enough to spend a large part of each day "on the nod"—and the rest of the day, "hustling" for the next fix. They hustle more energetically and persistently than the hustlers described below, committing risky crimes if necessary to stay slightly ahead of their tolerance. They substitute other drugs for heroin because they like being stoned, but the skill and energy they devote to illegal activities usually provide them with enough money for heroin. Many go into dealing at one time or another. Eventually, after 7 to 10 years, they get tired of hustling for heroin. Whether they also lose interest in getting stoned at that time will largely determine whether they become "maturing-out" or "burned-out" users.

Drug Dependents (high drugs, low crime) use heroin in a pattern of intense use of drugs of all kinds. Their major motivation is to be stoned for as much of the day as possible. Although they may prefer heroin, they will eagerly consume other drugs when heroin is not available or too expensive. Since they are stoned most of the time, they are unlikely to be energetic, aggressive criminals. Some become sellers, but their careers end quickly when they consume more drugs than they sell. Of all heroin users, they have the most serious psychological and physical problems. Most will become "burned-out" users. Few will be able to resume a normal life, even with extensive government efforts.

Conformists (low drugs, low crime) are heroin users almost by accident. They experimented with heroin and became mildly dependent on it, psychologically and physiologically. They do not have long histories of use and rarely use other drugs. Their moderate use of heroin and conventional attitudes imply that they are able to retain legal jobs. They may have criminal records for drug use but are rarely arrested for crimes against people or property. Included are many weekenders who never developed a strong yen to hustle or be stoned; a lot of veterans who became addicts in Vietnam,

where life was boring and heroin easily available; and some drug dabblers who accidentally became mildly "hooked." They frequently undertake detoxification voluntarily, at home. While they are most likely to become cured or mature out, some may become more interested in heroin or in hustling and become one of the other types described above.

Hustlers (low drugs, high crime) enjoy the excitement of earning an illegal income almost as much as they enjoy the direct physiological effects of heroin. They use heroin regularly but are attracted less to getting stoned than to the incentives that heroin use provides for developing and using criminal skills. Typically, they begin using heroin only after they have become hustlers and criminals. Many also use cocaine, to indicate the wealth that derives from their skillful hustling and to show their independence from heroin. Some begin dealing in heroin and then tend to become more dependent on the drug and less motivated to "hustle." Many of the young, lower-class delinquents who have been using heroin for more than one year and less than seven fit into this category.

Maturing-Out Users have tired of the risk of heroin use and no longer enjoy the euphoria or analgesia of being stoned. They maintain moderate levels of heroin use by habit. Those who were previously aggressive criminals tend to become more careful or try to obtain legitimate employment. Those who once used many drugs in an undiscriminating way reduce their consumption and become more careful about the drugs they use. This group includes most people who have used heroin for 10 years or more or who have reached age 35. The prognosis is very favorable. Members of this group often do very well in supervised programs of all types.

Burned-Out Users have become old, tired, and passive but have not relinquished the desire to be stoned. Because of their high visibility to police (due to many previous arrests), they find criminal activities unattractive; but their poor work records keep them from legitimate employment. Consequently, they tend to be very poor: they work as informants, do petty services for the drug trade (e.g., steering users to dealers), and engage in a few small hustles. Thus, they can afford heroin only occasionally. Most use inexpensive drugs. Indeed, many become alcoholics. Included are a large minority (perhaps a bare majority) of the users who survive past the age of 40 or 45. They are in desperately poor health, physically and mentally. They have a very poor prognosis, regardless of government efforts.

For a full description of the different types, an estimation of their representation, and an analysis of the sources of the typology, see Mark H. Moore, "Policy towards Heroin Use in New York City" (Ph.D. diss., Harvard University, 1973).