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Vietnam Veterans Three Years after Vietnam: How Our Study Changed Our View of Heroin

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In May of 1971, two congressmen who went to Vietnam reported extensive heroin use among American soldiers. Almost immediately thereafter, the Department of Defense, under Dr. Jerome Jaffe's urging, set up a urine-screening program intended to detect all men using heroin at the time of their departure from Vietnam. They were then to be detoxified in order that they not arrive in the United States still addicted.

On his return from overseeing the establishment of the urine-screening program, Dr. Jaffe asked me to design and carry out a follow-up study of returning veterans to learn the consequences of heroin use in Vietnam. In response, we interviewed about 900 of the 14,000 Army enlisted men who returned to the United States in September 1971, the first month in which this urine-screening and detoxification system was operating uniformly throughout Vietnam. The interviews took place between May and October of 1972, 8–12 months after their return (Robins, 1974). The men interviewed had been randomly selected from a computer tape of returnees provided by the Department of Defense. We also had access to the Surgeon General's list of men who had been detected as drug positive at departure. A random selection from this list allowed us to oversample men detected as drug positive at departure. We did this to have a large number of men who would be at high risk of using drugs after their return. In this paper, this high-risk group has been weighted appropriately so that our figures apply to the general population of returnees.

In 1974, we selected 617 men for reinterview. These men were interviewed between October and December of 1974, 3 years after their return from Vietnam, at the average age of 24. We had reduced the sample from 900 to 617 to have enough funds to interview a non-veteran comparison group. We interviewed 284 non-veterans, matched to the veterans for age, eligibility for military service, and education and place of residence as of the veterans' date of induction. The diligent interviewing team provided by the National Opinion Research Center secured a very high recovery rate of our target population for both interviews. In the first interview, we achieved 96% of the target population, and in the second interview 94%. Thus, we have two interviews covering 3 years since return for 91% of a random sample of Army enlisted men who spent an average of a year amid cheap, potent heroin.

Having access to a random sample of men who had been heavily exposed to heroin in Vietnam was a remarkable opportunity to learn something about the natural history of heroin use. Practically every man we interviewed had had an opportunity to use heroin in Vietnam. Eighty-five percent of the men told us that they had been offered heroin while they were there—often quite soon after their arrival. (One soldier was offered heroin as he descended from the plane on which he arrived in Vietnam by a soldier preparing to board that same plane to return home. He was offered the heroin in exchange for a clean urine so that the man due to leave would be able to get through the urine screen.) Thirty-five percent of Army enlisted men actually tried heroin while in Vietnam, and 19% became addicted to it.

This opportunity to study heroin use in a highly exposed normal population was unique because there is nowhere else in the world where heroin is commonly used. We have been able to study cannabis use in India and Jamaica and cocaine in Bolivia, but there is no equivalent opportunity to study heroin. In the United States itself, heroin use is so rare that the National Commission survey (1973) of 2,400 adults obtained only about 12 people who had used heroin in the last year. (Similarly, our non-veteran sample of 284 young men matched to veterans for age, location, education, and eligibility for service provided only seven, and will consequently not be studied in this paper.) Because heroin users are scarce both worldwide and in the United States, most of our information about heroin before the Vietnam study came from treated and criminal samples. Yet only one in six of the veterans who used heroin in the last 2 years came to treatment. We must wonder whether the heroin

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histories of men who come to treatment are representative or whether we may not have obtained a biased picture of heroin from them.

There are five common beliefs about heroin that we will investigate: First, does heroin use rapidly progress to daily use and addiction? Second, is heroin use so much more pleasurable than the use of other drugs that it supplants them? Third, is heroin addiction more or less permanent unless there is prolonged treatment? Fourth, does maintaining recovery from heroin addiction require abstention from heroin? Fifth, is heroin use a major social problem?

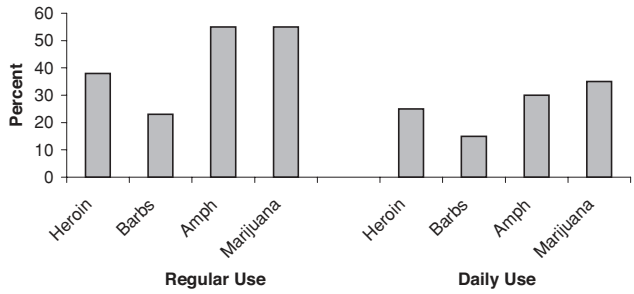

FIGURE 1. Progression to regular and daily use by users of four drugs in the last 2 years (veterans).

DOES THE USE OF HEROIN RAPIDLY PROGRESS TO REGULAR USE AND ADDICTION?

To say whether a drug is especially likely to lead to regular use, daily use, or addiction, one needs to compare it with other drugs. In our interview we asked about use in the last 2 years of 21 different drugs. For each we also asked whether it had been used more than weekly for a month or more in the last 2 years, which we define as "regular" use. Ten drugs had been used by more men than heroin and ten by fewer men. Thus, in terms of any use, heroin fell in the middle. There were more regular users of heroin, however, than of most other drugs, suggesting that heroin use is more likely to progress to frequent use. Only three drugs had more regular users than heroin: marijuana, used regularly by 30% of the veterans, amphetamines, used regularly by 16%, and barbiturates, used regularly by 4%. Heroin itself had been used regularly by 3% of veterans for some period in the last 2 years. Those drugs used at least once by more persons than heroin but less often used regularly include LSD, cocaine, Quaalude, Darvon, opium, mescaline, and Valium. We will confine our comparisons of heroin to amphetamines, marijuana, and barbiturates because these are the only drugs used regularly by sufficient men.

One reason that there are so many more regular users of marijuana and amphetamines than of heroin is because there are simply more users of all kinds. More than half the veterans (54%) used marijuana in the last 2 years, 30% used amphetamines and 15% used barbiturates, whereas only 8% used heroin. However, when we look only at users, we find that less than half the heroin users used it regularly, that is, more than once a week for a month or more (Fig. 1). Users of amphetamines or marijuana were more likely than heroin users to become regular users, and barbiturate users were less likely. We find the same pattern for daily use. Only one-quarter of those who used heroin in the last 2 years used it daily at all, about the same proportion as amphetamine users, whereas about one-third of marijuana users were daily users of that drug.

How are we to understand the fact that heroin use progresses to daily or regular use no more often than does use of amphetamines or marijuana when laboratory experiments have shown it to be a highly addicting drug? We suspect that it may be the quality of the heroin available in the United States that explains the fact that it can be used sporadically or even regularly by so many people without progressing to daily use. In Vietnam, where heroin was pure, 54% of all users became addicted to it and 73% of all who used it at least five times became addicted, a very substantial proportion indeed. (We cannot, unfortunately, look at progression to regular and daily use in Vietnam because in the first interview we asked those questions only about narcotics as a class, not about heroin specifically.)

To say that daily use among heroin users is no more common than among marijuana and amphetamine users does not necessarily mean that heroin is no more addicting. Daily use may not imply addiction equally for all drugs. It is difficult to compare addiction liability among drugs of different classes, because evidence for addiction differs. Users of all four of the drugs we are considering here, heroin, amphetamines, barbiturates, and marijuana, develop tolerance, but withdrawal symptoms are clear only for barbiturates and heroin. Amphetamines are typically used in daily runs of 10–12 days, followed by periods of fatigue and depression, but it is not clear to what extent those symptoms are withdrawal symptoms and to what extent they are the result of prolonged sleep loss. Continuous, heavy use of marijuana in an experimental setting can produce withdrawal symptoms similar to those produced by narcotics (Jones et al., 1976), but as used generally, the major complaint is apathy, which may not be an indication of physiological dependence.

Because it is difficult to compare the addiction liability of heroin with that of nonnarcotic drugs, we limited our comparison to the one evidence for dependence all drugs share, psychological dependence. We asked, "Did you ever use ____ enough in the last 2 years so that you began to feel you needed it, that is, you would feel uncomfortable when you couldn't get it?" Figure 2 shows that in the total sample there were more men who felt dependent on amphetamines than there were on heroin, and about the same number felt dependent on marijuana. This result, however, depends entirely on the fact that heroin is used by fewer men than

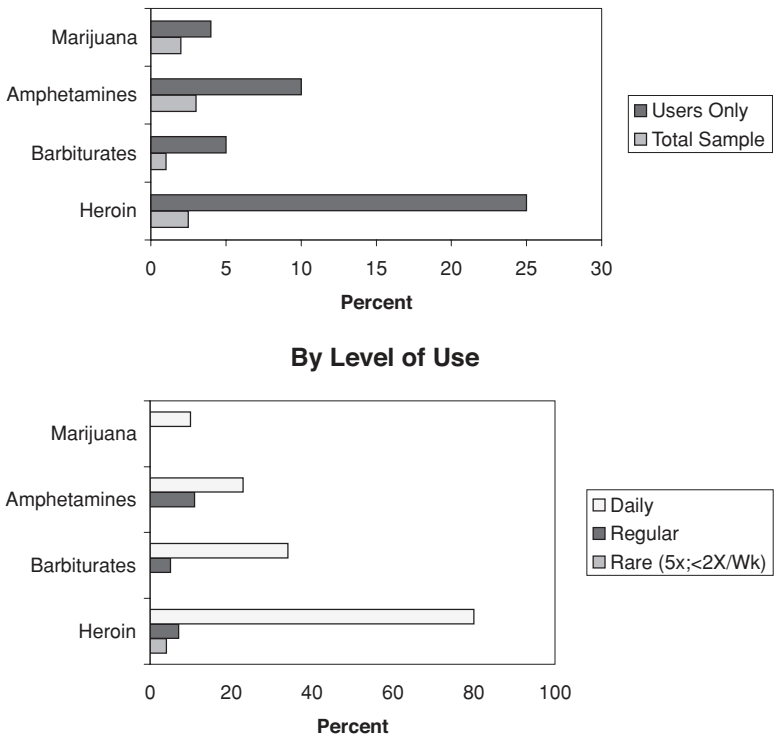

FIGURE 2. Addiction: veteran's psychological dependence on four drugs.

these other two drugs. Among users, about one-quarter of the heroin users felt dependent at any time in the last 2 years, a distinct minority. Certainly, heroin use and dependence were not synonymous. Nonetheless, heroin use was more associated with dependence than was the use of other drugs studied. The bottom of Fig. 2 shows that feeling dependent on all drugs almost required daily use, but many more daily users of heroin felt dependent—four out of five—than did daily users of barbiturates (one out of three), amphetamines (one out of four), or marijuana (one out of ten). Users of drugs other than heroin rarely felt dependent even when they were daily users.

In answer to our first question, then: use of the heroin purchased on the streets of the United States in 1974 did not lead rapidly to daily or compulsive use, no more so than the use of amphetamines or marijuana. On the other hand, most heroin users who used daily did perceive themselves as dependent on the drug, whereas this was not true of daily users of the other commonly used drugs.

DOES HEROIN USE SUPPLANT THE USE OF OTHER DRUGS?

Heroin users are supposed to like the drug so well that they lay all other drugs aside in its favor. Our finding shows quite the contrary. In Fig. 3, we note that veterans who used heroin in the last 2 years were more likely to use every common drug during that same period than were veterans who did not use heroin. Indeed, the use of other narcotics was almost exclusively restricted to heroin users.

There are a number of possibilities that might allow us to assimilate this finding to our idea that heroin is by far the most pleasurable of drugs. For instance, one might think that heroin users' use of other drugs is always casual, and that it occurs only when they cannot get heroin. However, we find that their use is not casual at all. Although 99% of heroin users have used marijuana at all in the last 2 years, 92% have used it regularly (several times a week for at least a month), and a third have felt dependent on marijuana.

One might think that perhaps it is only the heroin "tasters" who use other drugs—that men seriously involved with heroin would not be interested in less satisfying drugs. Again, the finding is just the opposite. It is the addicts who are most likely to be deeply involved with other drugs. When we asked men who told us that they had been addicted to heroin in the last 2 years (in response to a question, "Were you ever strung out or addicted in the last two years?") about the use of other drugs, we found that addicts had used 10.4 other drugs on the average out of the 20 we inquired about, as compared to 7.9 for less regular heroin users.

In keeping with popular views of heroin as the most exciting and pleasurable of drugs, we would certainly

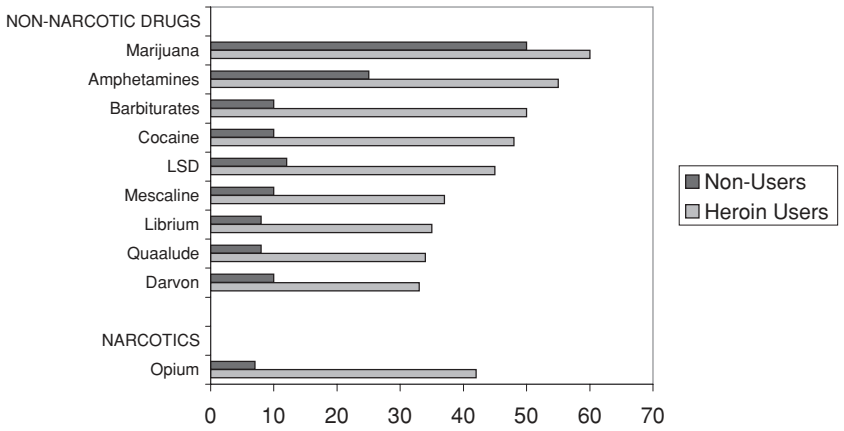

FIGURE 3. Use of common drugs by heroin users in the last 2 years (veterans).

TABLE 1. The "Main" drug of heroin users

	Men using more than one drug (including heavy drinkers)		
	Heroin users		Other drugs only
"Main" drug during the last 2 years	Total (97)	Addicts (31)	(237)
Heroin	10%	41%	–
Other narcotic	5%	3%	0%
Marijuana	42%	30%	40%
Alcohol	18%	22%	44%
Any other drug	15%	2%	3%
Barbiturates	9%	1%	0%
Amphetamines	5%	0%	0%
A combination or none	10%	1%	13%
	100%	100%	100%

expect that regardless of their use of a multitude of other drugs, it is heroin that is really the drug that counts with the heroin user. We also found this not to be the case. We asked everyone who had used more than one illicit drug or who had taken illicit drugs and also drunk heavily in the last 2 years, what was the "main drug they had been into" in the last 2 years. All heroin users were asked because all had used other drugs. In Table 1, we note that heroin was considered to be the main drug of only 10% of heroin users. Less than half even of those who reported addiction to heroin reported it as their main drug. Instead, the main drug for heroin addicts was often marijuana or alcohol.

In answer to our question, then, heroin does not seem to supplant the use of other drugs. Instead, the typical pattern of the heroin user seems to be the use of a wide variety of drugs plus alcohol. The stereotype of the heroin addict as someone with a monomaniacal craving for a single drug seems hardly to exist in this sample. Heroin addicts use many other drugs, and not only casually or in desperation. Drug researchers have for a number of years divided drug users into heroin addicts versus poly-drug users. From our data such a distinction seems rather meaningless.

IS ADDICTION TO HEROIN MORE OR LESS PERMANENT WITHOUT PROLONGED TREATMENT?

One out of five of our sample reported themselves to have been addicted to heroin in Vietnam, and that self-description was substantiated by their report of prolonged heavy use and severe withdrawal symptoms lasting more than 2 days. Only 1% of our sample reported addiction to heroin during the first year back from Vietnam, and only 2% reported addiction in the second or third year after Vietnam. Any sample in which the addiction rate drops so dramatically obviously contains many people experiencing long-lasting remissions. Indeed of all the men addicted in Vietnam, only 12% have relapsed to addiction at any time since their return, that is, at any time in the last 3 years. Can we attribute this recovery to treatment?

Half of the 281 men addicted in Vietnam received treatment while there. Of those treated, 4% were readdicted their first year back. Of those not treated, again 4% were readdicted their first year back. It may be thought that recovery without treatment was found in this sample only because of the enormous change in the availability of heroin and the circumstances of its use when men left Vietnam for the United States. To see whether this is a sufficient explanation, we need to look at their experience with addiction after return to the United States. This is difficult because even with our oversampling of men with positive urines at

departure from Vietnam, we have only 20 men who were addicted in the first year after Vietnam. Nonetheless, we did look to see whether their addiction continued in the second period after Vietnam (the period between the first and second interviews). Of these men addicted the first year back, half were treated and half were not. In all, only 30% (6 out of the 20 men addicted their first year back) were addicted at any time during the second period, that is, in the last 2 years. Of those treated, 47% were addicted in the second period; of those not treated, 17%. One should not conclude from these results, showing no better results for treated than untreated men whether treated in Vietnam or later, that treatment was useless. It was often very brief (typically only two weeks during the first year back). Further, those more seriously addicted were more likely to receive treatment. (In our sample of daily users in the last 2 years, all who used daily for 6 months or more came to treatment, as compared with only half of those who used from 1 to 6 months, and only 6% of those who used daily for less than a month.) What we can conclude, however, is that treatment is certainly not always necessary to remission.

We can also learn something about rates of remission in the last 2 years, a period during which there were 31 addicts. We asked them how many had used any heroin at all even once in the last 2 weeks, less than one-half (47%) had. Thus, at least half of those addicted within the last 2 years had not been addicted at any time in the last 2 weeks. We also asked how many had used any heroin at all in the last 3 or 4 days. Only one-quarter of the addicts had done so. Consequently, a minimum of three-quarters had recovered from their addiction before the interview. We collected urine samples at the end of the interview. Only one of the men who said they had been addicted in the last 2 years had a urine positive for morphine.

Heroin addicts are supposed to continue to be bothered by a persistent craving for the drug long after acute withdrawal symptoms subside. To see if this was the case, we asked ex-heroin addicts who had not used any narcotic at all in the last 2 years if they felt like taking narcotics at any time, and if so whether it was a real craving or just a thought that crossed their minds. Only one-quarter reported that they had felt like taking narcotics, and only 4% reported a craving. Thus, craving can occur and can be extremely persistent—the four men reporting craving had not used any narcotic at all during the last 3 years—but it seems that prolonged craving is quite a rare residual effect of heroin addiction.

DOES RECOVERY FROM ADDICTION REQUIRE ABSTINENCE?

It is commonly believed that after recovery from addiction, one must avoid any further contact with heroin. It is thought that trying heroin even once will rapidly lead to readdiction. Perhaps an even more surprising finding than the high proportion of men who recovered from addiction after Vietnam was the number who went back to heroin without becoming readdicted. As Fig. 4 shows, half of the men who had been addicted in Vietnam used heroin on their return, but only one-eighth became readdicted to heroin. Even when heroin was used frequently, that is, more than once a week for a considerable period of time, only a half of those who used it frequently became readdicted.

Unfortunately, our finding that half of the men could go back to heroin use and not become readdicted is not very useful from a clinical point of view, because we have not been able to detect any characteristics predicting who can safely return to use and who cannot. We looked at 35 different variables including early drug history, demographic characteristics, discipline problems, Army intelligence test scores, psychiatric treatment, and whether men

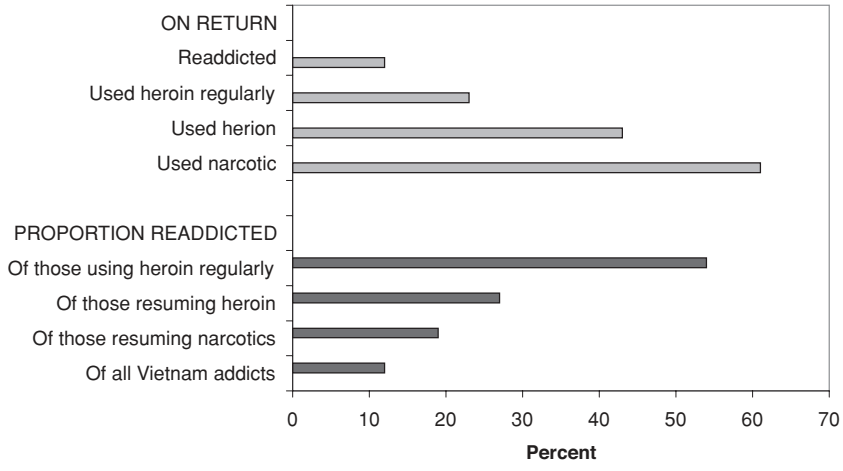

FIGURE 4. Readdicted within 3 years of return from Vietnam among 281 men addicted in Vietnam.

TABLE 2. Looking for predictors of readdiction among veteran addicts who returned to narcotic use ($N = 171$)

Tested		Results
Demographic characteristics		
Race	City size	Negative
Age	Social class of upbringing	
Region		
Education	Religion	
Own problems before service		
Dropout	Drugs, injection	Negative
Arrest	Fighting	
Drinking	Truancy	
Drug-using friends	Psychiatric care	
Parents' problems		
Broken home	Arrests	Negative
Drinking	Psychiatric care	
Drugs		
Drug use in Vietnam		
Long use of narcotics	Complications of use	Negative
Which narcotics	Other users in unit	
Injection	Number of other drugs	
Treatment for drugs	Detected as user	
Other military information		
Discipline problems	Psychiatric treatment	Negative
Heavy drinking	IQ	
Combat	Draftee or volunteer	

got off heroin through treatment or on their own, to search for predictors of readdiction. None of these was successful in predicting which users would be able to use again safely (Table 2). The thing that we could not investigate, which may be the most important variable of all, is the quality of the heroin used. Certainly, the quality of heroin varies considerably from time to time and place to place in the United States. This may be the missing explanatory variable.

DOES THE USE OF HEROIN CONSTITUTE A MAJOR SOCIAL PROBLEM?

Veterans themselves believe that heroin use is very dangerous. When asked what one drug had done the most harm in Vietnam, 90% of veterans named heroin whether they themselves had used it or not. The anti-heroin attitude of veterans is surprisingly resistant to their own experience. When asked if drug laws should be changed, and if so how, half of both veterans and non-veterans favored legalizing marijuana, but only 4% of veterans and 1% of non-veterans favored reducing penalties for or legalizing narcotics. The veterans' attitudes closely resembled those of non-veterans, despite their considerably greater experience with heroin.

The veterans' view that heroin is more dangerous than other drugs is confirmed when they report on their own experience instead of more general opinions. Users of each drug were asked whether that drug had interfered with their lives (Fig. 5). Although only one-quarter of heroin users thought that heroin had interfered with their lives, they more often believed this about heroin than did users of other drugs believe it about their drugs. Thus, the great majority of heroin users do not think that they have been harmed by it, even though they tend to think it is worse than any other drug.

But what about more objective measures? Heroin addicts are believed to account for much of our crime and welfare problems. To find out whether veterans' heroin use had contributed to crime, we considered what proportion of those arrested were heroin addicts. In all, about one-quarter (22%) of veterans reported having a non-traffic arrest in the last 2 years. Non-traffic arrests are much more frequent among heroin addicts than in the general population of veterans. Among heroin addicts more than two-thirds (69%) reported an arrest. On the other hand, heroin addiction was so rare that heroin addicts accounted for only 5% of those who had been arrested. Heroin addicts of course made their heaviest contribution to narcotics arrests. Sixty percent of all those arrested for a narcotic offense had been addicts. Heroin addicts also contributed disproportionately to property offenses. Twenty-four percent of those arrested for theft (stealing, armed robbery, or burglary) were heroin addicts, as were 8% of those arrested for bad checks. Heroin addicts contributed no more than their expected proportion (ie, 2%, because they constituted 2% of the population of veterans) to violent crime, vandalism, alcohol arrests, or arrests for non-narcotic drugs.

Table 3 shows the proportion of addicts arrested for each offense and their employment status at the time of interview. Note that although heroin addicts accounted for more than their proportion of property offenders, only one-third of them had had a property offense in the preceding 2 years. Thus, heroin addiction does not inevitably lead to theft to support the habit.

Table 3 also shows that heroin addicts had a great deal of difficulty holding jobs. At the time of interview one-third of all those who had been addicted at any time in the last 2 years were totally without work and not in school, and less than one-half were fully occupied in school or on a job. Their unemployment had been persistent; two-thirds had been totally out of work and school for 6 months or more in the last 2 years. Their rate of current unemployment was much greater than that of other veterans, only 8% of whom were totally unemployed at follow-up; and their rate of total unemployment lasting 6 months or more was also much greater, only 12% of other veterans having been out of work that much.

To give an overall estimate of the social costs of heroin as compared to other drugs, we counted how many of eight problems each had experienced in the last 2 years:

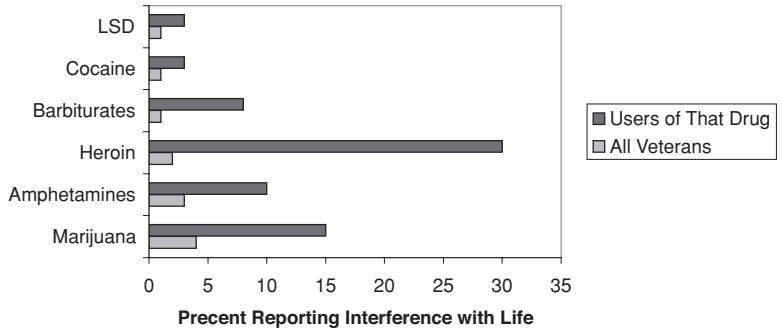

FIGURE 5. Which drugs are perceived by veterans as interfering with their lives in the last 2 years.

TABLE 3. Job and arrests of men addicted to heroin in the last 2 years

	Heroin addicts (31)	Other veterans (540)
Job		
Employment status at interview	%	%
Full-time job or school	44	87
Part-time job or school	23	5
Completely unemployed	33	8
	100%	100%
Months out of 24 unemployed and not in school		
None	21	63
One-five	13	25
Six-eleven	33	9
Twelve plus	33	3
	100%	100%
Arrests		
Any non-traffic	69%	21%
Property	31	3
Conduct	28	5
Drugs	13	7
Alcohol	10	7
Violence	0	*

* < .5%.

TABLE 4. Mean number of recent adjustment problems (out of 8) for men using various drugs in the last 2 years

		Frequency of use		
	Any use	Occasional	Regular, ≤Daily	Daily
Marijuana	1.9	1.4	1.3	2.7
Amphetamines	2.5	1.9	3.0	3.1
Barbiturates	2.9	2.7	2.9	4.3
Heroin	3.2	2.8	2.4	4.5

the use of hard drugs on a regular basis, alcohol problems, job problems including severe unemployment and many job changes, crime, divorce, credit difficulties, violence, and transiency. Heroin users in the last 2 years had experienced more of these eight problems not only than the sample as a whole (they averaged 3.2 vs. 1.3 for the sample as a whole), but also more problems than users of any other drug (Table 4). For all drugs, problems increased as use became daily, but heroin led the other drugs both among occasional and daily users.

From the findings thus far presented one might conclude that even if heroin addiction does not always lead to property crimes, and even if it actually accounts for only a small proportion of the nation's crimes, still heroin addiction does have serious social consequences. However, heroin's bad reputation may limit its use to the kinds of people who are very likely to have social problems in any case. In addition, as we showed earlier, the use of heroin is associated with the use of many other drugs. It could well be the variety and quantity of drugs rather than heroin specifically that accounts for the high level of social problems among heroin users. Before deciding that heroin has an important role in creating social problems, we then need to take these two possibilities into account.

To take into account the fact that people who use heroin may have differed from people who do not long before they began using heroin, we developed what we call a Youthful Liability Scale. This scale was made up of the best predictors of heroin use in Vietnam. It is composed of demographic factors (race, living in the inner city, being young at induction) and the individual's behavior before he was inducted into the service (truancy, dropout or expulsion from school, fighting, arrests, early drunkenness, and use of many types of illicit drugs). His social class of origin and parents' problems are omitted because social class was not found to predict heroin use either in Vietnam or later and parents' problems did not add measurably to the predictive power of the remaining variables. The Youthful Liability Scale, composed entirely of items ascertainable before the soldiers went to Vietnam (and thus before almost all of

TABLE 5. Mean youthful liability scores of veterans with different types and degrees of drug use in the last 2 years

	No use	Any use	Degree of use		
			Light	Regular, <Daily	Daily
Marijuana	3.7	6.5	5.5	6.4	7.6
Amphetamines	4.2	7.3	6.8	7.8	7.7
Barbiturates	4.7	7.9	7.8	6.9	9.2
Heroin	4.9	8.0	8.1	7.7	8.0

them were introduced to heroin) was well correlated with heroin use in Vietnam ($r = .47$). It was also well, if less strongly, correlated with heroin use in the last 2 years ($r = .28$). It is interesting, however, as one can see in Table 5, that the Youthful Liability Scale did not predict the *degree* of heroin use in the last 2 years. Daily users had no higher scores than did occasional users. Nonetheless, heroin users had higher Youthful Liability scores than did the users of any other drug.

The Youthful Liability Scale was also correlated with each of the eight problems used to assess recent adjustment. Indeed, its correlation with the number of adjustment problems in the last 2 years was even stronger ($r = .53$) than its correlation with heroin use. Our suspicions are thus confirmed. The men who used heroin were just those especially disposed to adjustment problems even before they used the drug.

To answer the question of whether heroin use is still associated with social problems after we take into account the kinds of people who use it and the number of other drugs they use, we matched each man who had used heroin in the last 2 years with a veteran who had not used heroin, if we could find a nonuser who had an identical score on the Youthful Liability Scale, who had used the same number of other drugs, and who had used the identical other drugs regularly. By this matching procedure, we hoped to compare individuals who differed only with respect to whether or not they had used heroin, but were identical with respect to other predictors of social problems. We then compared the number of social problems other than drug abuse that they had had in the last 2 years. We went through the same matching procedures for marijuana users, amphetamine users, and barbiturate users.

Our findings are that the *occasional* use of none of these drugs was associated with a significant increase in social adjustment problems. Regular use of each of these drugs except marijuana, again defined as use more than once a week for more than a month, *was* associated with an increase in social adjustment problems. The excess problems experienced by those who used heroin regularly (.9 more problems on the average out of 7) was no greater than the excess problems experienced by those who used amphetamines regularly (1.3) or barbiturates (1.1), and the association of heroin with social problems was less statistically significant than was the effect of either amphetamines or barbiturates. Thus, the reason that we find higher levels of social disability among heroin users than among users of other drugs is probably attributable to the kinds of people who use heroin. Men disposed to social problems are likely to use drugs, and those with the very greatest predisposition to social problems are the ones likely to use heroin. Yet regular heroin use does seem to have an added effect—whether because of the drug itself or because of its legal status, we still do not know. But its effects are no greater than the effects of regular use of amphetamines and barbiturates. These latter drugs constitute a more serious social problem than heroin, since they add at least as much to the level of social problems of users, and because so many more people use these drugs than use heroin.

SUMMARY

Despite its reputation as a rapidly addicting drug, heroin in the forms available in the United States in late 1974 was no more likely to be used regularly or daily if used at all than were marijuana or amphetamines. It was more likely to be used regularly than other narcotics and other non-narcotic drugs. As compared with marijuana and amphetamines, what is distinctive about heroin is not its liability for daily use, but the fact that daily users perceive themselves as dependent. Despite their dependence, they manage to quit use much more often than anyone would have guessed and can often even return to use without becoming dependent again.

Heroin users are polydrug users of an extreme kind. And heroin addicts use an even greater variety of other drugs than do less regular heroin users. Other drugs, and particularly marijuana, have been described as stepping stones to heroin because they almost always precede heroin use. A better image than stepping stones might be the corner stones on which the edifice of varied drug use is built. The process is one of accretion, not of succession.

People who use heroin are highly disposed to have serious social problems even before they touch heroin. Heroin probably accounts for some of the problems they have if it is used regularly, but heroin is "worse" than amphetamines or barbiturates only because worse people use it.

What are the policy implications of our findings? It would seem that our society has overemphasized the importance of treatment for heroin per se, failing to pay attention to the multiple other problems that heroin addicts have. Heroin addicts are deeply involved with a great variety of other drugs at the same time they are involved with heroin, and they have all kinds of social adjustment difficulties that are not entirely attributable to heroin. It is small wonder that our treatment results have not been more impressive, when they have focused so narrowly on only one part of the problem.

The results that we have reported here have come from a survey of a general population of young men of an average age of about 24 who were heavily exposed to heroin in Vietnam. This sample has its limitations: the men in Vietnam had been selected for psychiatric health, in so far as the draft boards and the Army could do so. They were exposed to generous supplies of heroin for only 1 year and in an extraordinary situation—far from home and under fire. Our findings may have been influenced by these special circumstances, but we cannot be sure whether they have been because there is no equivalent study of heroin use in a general population that has provided enough regular heroin users for comparison. Certainly our results are different from what we expected in a number of ways. It is uncomfortable presenting results that differ so much from clinical experience with addicts in treatment. But one should not too readily assume that differences are entirely due to our special sample. After all, when veterans used heroin in the United States two to 3 years after Vietnam, only one in six came to treatment.

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