

Toward a Theory of Drug Epidemics

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From the late 1960s to the early 1990s America has experienced a truly dramatic epidemic of illicit drug use, among its adolescents and young adults in particular. It has been an epidemic that to some degree has diffused to practically all other corners of the globe, although what piecemeal epidemiological data are available suggest that in no other region did the epidemic penetrate the youthful population as much as it did in North America (Johnston & Harrison, 1984; Smart & Murray, 1981; United Nations, 1987). During this time, I and my colleagues, Jerald Bachman and Patrick O'Malley, have spent much of our professional lives mapping and trying to understand the many tributaries, eddies, and streams that have comprised this great epidemic. It has been, after all, not exactly a single epidemic, but rather a constellation of epidemics involving the use of a broad array of psychoactive substances outside the medically or morally prescribed boundaries set down by society.

The overall drug epidemic has been comprised of the use of substances as diverse as drugs that are totally illegal to produce or possess (these include derivatives of natural substances like cannabis, coca, and opium, as well as synthetics like PCP and LSD); drugs that are legally manufactured for medical purposes and the use of which is controlled by law (like stimulants, sedatives, tranquilizers, and analgesics); and synthetic substances not legally controlled, but that still are used for their psychoactive effects (including the various inhalant drugs like glues, industrial solvents, the nitrites, etc.).

Perhaps we tend to think of this epidemic in more monolithic terms than we should, given this great diversity of substances that it encompasses, but on the other hand it may make sense, not only in facilitating discourse about this complex, multidimensional social problem, but also because the many different drug-using behaviors do in fact tend to clump together and do seem to have some orderly temporal connections among themselves. Many investigators, for instance, have demonstrated that these many different forms of illicit substance use correlate fairly strongly with each other, and further, that there tends to be some orderliness in the way individuals progress through these experiences (e.g., Johnston, 1973; Kandel, 1975; O'Donnell, Voss, Clayton, Slatin, & Room, 1976). In fact, not only is the use of these many illicit substances intercorrelated, their use also correlates with the use of quite an array of licit substances, including cigarettes, alcohol, "look-alike" stimulants, over-the-counter diet pills, sleeping pills, and so forth (Jessor & Jessor, 1977; Johnston, 1973; Johnston, O'Malley, & Bachman, 1987b; Kandel, 1975; Miller et al., 1983).

Because most social science research is comprised of single cross-sectional surveys, short-term experimental designs, or panel studies of single cohorts, it is fair to say that the great majority of social science studies on the use of these various substances have been somewhat time-bound. That is, they have tended to focus mostly on social and psychological differences among individuals at a given point in time (i.e., risk factors that might help to explain higher or lower use). Such emphases are valuable, of course—they provide many insights of both theoretical and practical significance. But, one wonders whether this examination of individual differences allows us to establish how the aggregate phenomenon of an epidemic came into being in the first place. I think it may tell us more about who is more vulnerable to the overall epidemic, or its component epidemics, than about the social forces that brought the epidemic itself about, or that may cause it to recede.

In this chapter, I address the issue of how this broad epidemic of illicit drug use came to be, and why different classes of drugs have held sway in it at different points in time.¹ In other words, I propose to specify and elaborate the forces that I believe explain much of the drug epidemic since the 1960s, and to generalize from that experience to the beginnings of a more general theory of secular (i.e., long-range) trends in drug use. To the

¹For the purposes of this chapter I have not tried to integrate all of the hypotheses and concepts used in this theoretical formulation, which is specific to the drug use domain of behavior, with a number of other, more general theories of clear relevance from the sociological and psychological literatures—theories dealing with anomie and normlessness, social control, or social movements. Nor have I integrated it with the relevant literatures of certain social historians of this field, such as David Musto. I plan to make these integrations in later, expanded statements of the theory.

degree that this theoretical statement is accurate, it may prove useful in the near future in guiding social action aimed at trying to contain epidemics in the use of particular drugs, and in the longer term perhaps, in containing even more general epidemics of illicit drug use.

I take into account the constellation character of the overall epidemic—that is, to account for the changing proportions of young people willing to illicitly use drugs of whatever type. I also offer some theoretical explanation for three separate stages of the overall epidemic—onset, maintenance, and decline—as well as an explanation for changes in the use of individual drugs. To do this I rely heavily on our own data from the Monitoring the Future project, in particular on the portion that is comprised of repeated cross-sectional surveys of American high school seniors (Johnston, O'Malley, & Bachman, 1989).

Figures 6.1 through 6.7 help to illustrate more specifically the phenomena I explain here. They are all based on data from the Monitoring the Future project's annual surveys of American high school seniors beginning in 1975—some 7 or so years into the illicit drug use epidemic. It may be seen in the first five of these figures that the different drugs used illicitly by this population have changed considerably since 1975. Heroin, LSD, and barbiturates all began long-term declines from their peak levels at least as far back as 1975. On the other hand, tranquilizer use did not reach its peak until 1978. PCP and marijuana not until 1979, stimulants and methaqualone not until 1982, and cocaine not until 1985 or 1986. In other words,

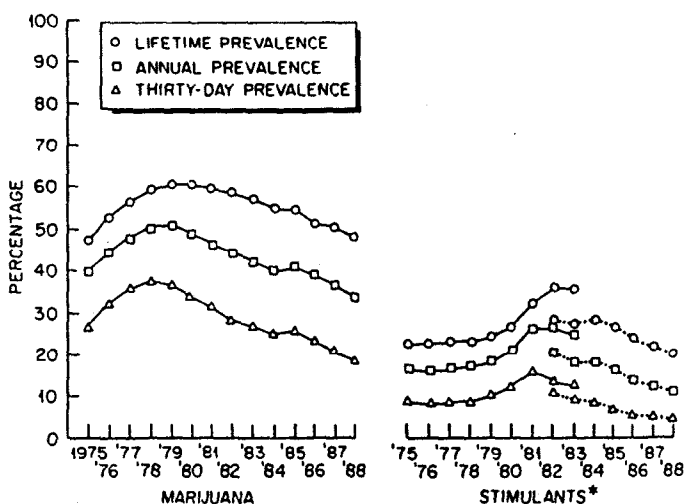


FIG. 6.1. Trends in lifetime, annual and 30-day prevalence of marijuana and stimulants (all seniors). *The dotted lines connect percentages which result if nonprescription stimulants are excluded.

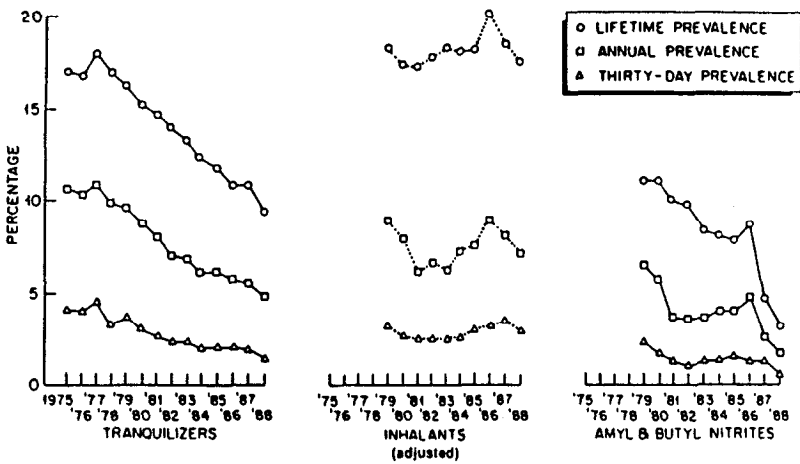


FIG. 6.2. Trends in lifetime, annual, and 30-day prevalence of tranquilizers, inhalants, and amyl and butyl nitrites (all seniors).

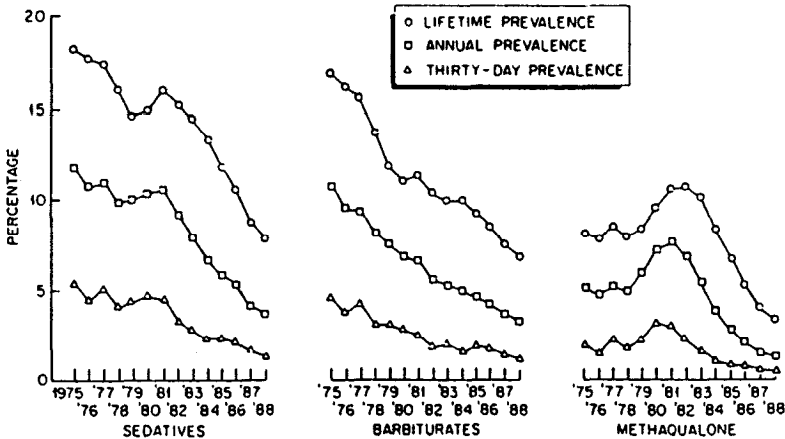


FIG. 6.3. Trends in lifetime, annual, and 30-day prevalence of sedatives, barbiturates, and methaqualone (all seniors).

some of these drugs were rising in popularity, whereas others were falling—and sometimes rising or falling quite sharply. Yet, as Figs. 6.6 and 6.7 show, the curves showing trends in the *overall* proportions of young people using any illicit drug, or any illicit drug other than marijuana or amphetamines, are quite smooth and orderly.

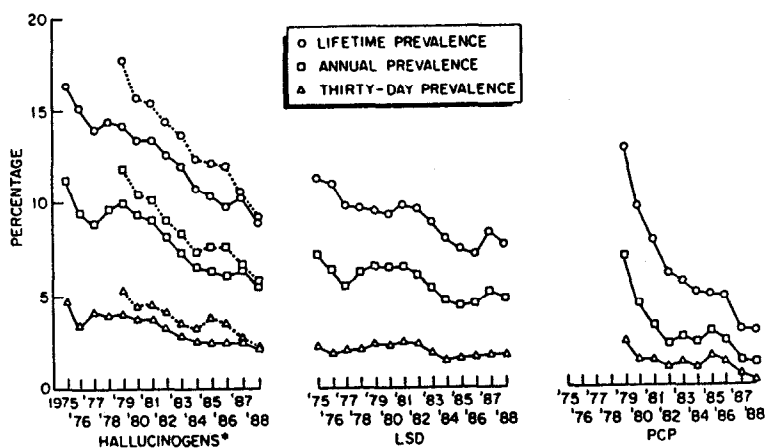


FIG. 6.4. Trends in lifetime, annual, and 30-day prevalence of hallucinogens, LSD, and PCP (all seniors). *The dotted lines connect percentages that are adjusted for underreporting of PCP.

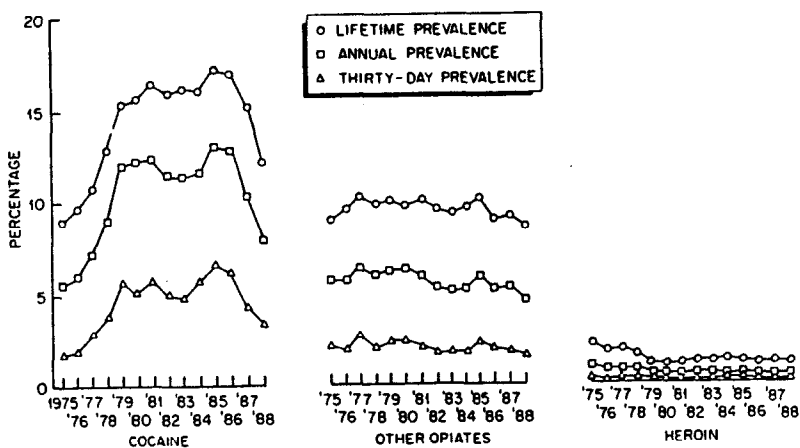


FIG. 6.5. Trends in lifetime, annual, and 30-day prevalence of cocaine, other opiates, and heroin (all seniors).

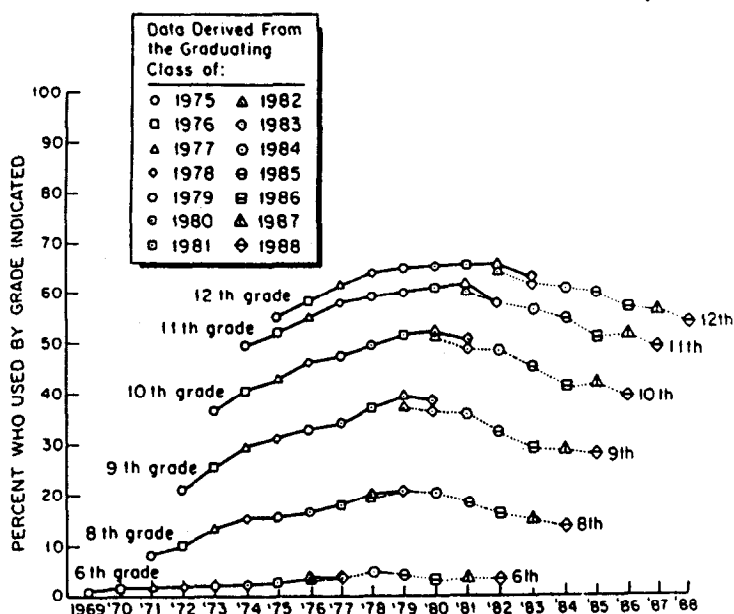


FIG. 6.6. Use of any illicit drug: Trends in lifetime prevalence for earlier grade levels (based on retrospective reports from seniors). Note: The dotted lines connect percentages that result if nonprescription stimulants are excluded.

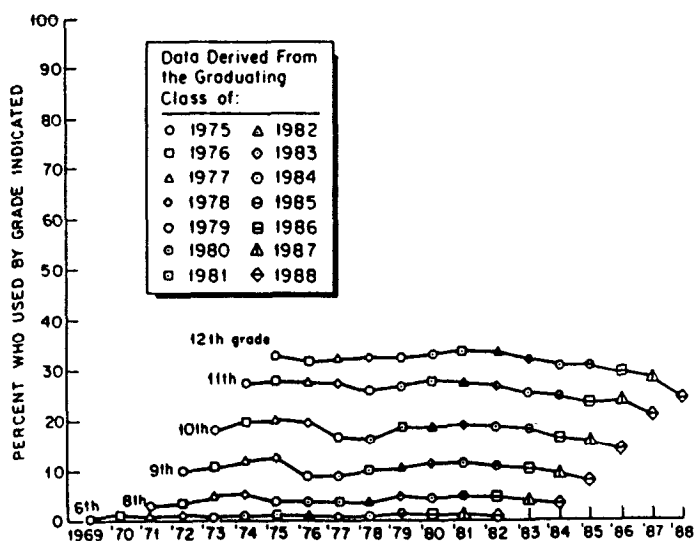


FIG. 6.7. Use of any illicit drug other than marijuana or amphetamines: Trends in lifetime prevalence for earlier grade levels (based on retrospective reports from seniors).

NECESSARY CONDITIONS FOR THE EXPANSION OF AN EPIDEMIC

I believe there are five conditions that must pertain for a large spread in the popularity of a given drug or set of drugs to take place—conditions that I here label as *awareness*, *access*, *motivation*, *reassurance*, and *willingness to violate social norms*. I also argue that all of these conditions are necessary for a broad expansion in popular use to occur, as well as for a broad epidemic, once established, to continue.

Awareness

A population has to become aware of the existence of a drug and its psychoactive potential before it can entertain the idea of using it. Most young people in the silent 1950s were simply unaware of the behavioral alternatives of using marijuana, LSD, and the like—they were not active alternatives in their repertoire of behaviors. And most young people were not aware of drugs like methaqualone, cocaine, and PCP until the mid-1970s. Widespread awareness of other drugs such as "ecstasy" (MDMA) did not come until still later, and there are surely still others yet to arrive on the American scene. This is not to say, necessarily, that these drugs had not been discovered previously, but rather that there was no widespread awareness in the population of their potential use as psychoactive agents. The media undoubtedly play a significant role at some stage in spreading the awareness of a drug throughout the population, but prior to that there is likely to be a diffusion through networks of friendships and acquaintances, and perhaps through underground newspapers and magazines.

Things have changed for the practically indefinite future in terms of the smorgasbord of psychoactive alternatives of which American young people are aware. This constitutes a major change in the situation—one that not only helped give rise to the overall epidemic, but that also clearly helps to maintain its forward momentum.

Access

The second necessary condition I posit, which is not unrelated to awareness, is access. Obviously awareness without access cannot result in use, although rising access may well help to stimulate awareness. Because access is largely achieved through friendship networks, the advent of an epidemic is likely to have a snowball effect in that the more people are using, still more know people who are using and through whom they can have access. They, in turn, can become users, and can then provide access to still others in their friendship network, and so on (deAlarcon, 1969). This

is probably most true for the *illegal* drugs, for which a new production and distribution system needs to evolve to feed the epidemic, and somewhat less true for the controlled psychotherapeutic drugs, which may already be widely dispersed in the population and thus be accessible through diversion, borrowing, and theft. (In fact, in many countries there is very little real control of the psychotherapeutic substances and easy accessibility is indeed widespread.) However, when the demand for psychotherapeutic drugs outstrips the amount that can be supplied by diversion from the legitimate domestic distribution system, then illegal importation or manufacture will evolve to supplement the supply.

We were recently able to document the rapid spread in access to crack cocaine. In 1985, crack was widely assumed to be confined to very few large cities, but we determined that by 1986, 52% of the high schools in our national sample had some prevalence of crack use and in a single year that proportion jumped to 77% (Johnston et al., 1989). Indeed, in 1988 some 42% of all seniors in the country said they could get crack fairly easily, if they wanted some. Quite obviously, commercial distribution networks made the drug quickly available to a large proportion of the communities in the country, and friendship networks undoubtedly took it from there.

The most accessible drugs, of course, are the legal uncontrolled substances that are widely available commercially for completely different purposes than the ones to which drug users put them—in particular, the inhalants. Such easy accessibility undoubtedly explains their popularity among younger children in this country; and that, in combination with their low price, helps to explain why inhalants have become a real problem among street children in developing countries, such as Mexico, as well. Clearly, access without awareness of the psychoactive potential of the drug is not enough to lead to use. As we have seen repeatedly, youngsters keep discovering new substances to use from among those that have been on store shelves for years—such things as Robitussin™, to take a very recent example.

As with awareness of the alternatives, widespread access to many drugs not really accessible to previous generations has developed as a result of the current American epidemic. The majority of American young people in the 1980s reported having some experience with illicit drug use, with the result that nearly all have friendship contacts; and although the extent of access still varies considerably by drug (see Fig. 6.8 and Table 6.1) a large segment of the youth population say that it would be "fairly easy" or "very easy" for them to acquire a number of the drugs if they wanted them. Obviously many more could achieve access if they made a concerted effort.

Now that an elaborated production and distribution system exists—having evolved to meet the massive demand of the epidemic to date—it is yet another important facilitating feature of our social landscape that

will take a long time to decline. As a result it will help maintain the forward momentum of the epidemic.

Motivation

Awareness and access are not sufficient conditions to move individuals to actual use, of course. There must be some motivation to use, and here the story becomes more complex. Curiosity plays an important role in the initial use of most drugs (Johnston & O'Malley, 1986), and so do promises of "wonderful" experiences to be attained. And the things that might be promised—as every good tobacco company advertising executive knows—can be myriad. They may include not only the promised psychological effects, but status and image and sexual identity. In the illicit drug area the benefits promised have also included intrapersonal insight and creativity (in the cases of LSD and, more recently, MDMA or "ecstasy"), enhancement of sexual performance and the sexual experience (in the cases of marijuana, cocaine, and methaqualone), and enhanced work capacity (in the cases of cocaine and amphetamines).

Because these drug-using behaviors are illicit, they may also carry the benefits of symbolic defiance of parents and other authorities, and the expression of solidarity with a deviant group. And age-graded norms make

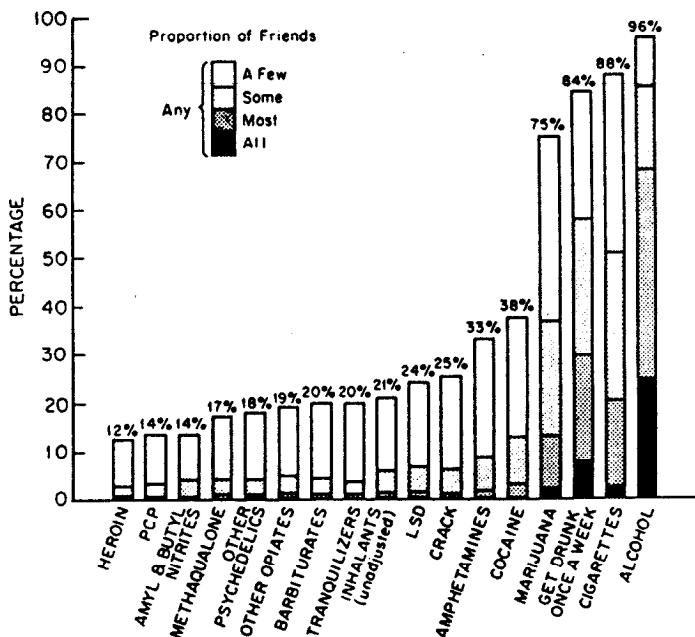


FIG. 6.8. Proportion of friends using each drug as estimated by seniors, class of 1988.

TABLE 6.1
Trends in Perceived Availability of Drugs, All Seniors

Q. How difficult do you think it would be for you to get each of the following types of drugs, if you wanted some?	Percentage saying drug would be "Fairly easy" or "Very easy" for them to get ^a														'87-'88 Change
	Class of 1975	Class of 1976	Class of 1977	Class of 1978	Class of 1979	Class of 1980	Class of 1981	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	
Marijuana	87.8	87.4	87.9	87.8	90.1	89.0	89.2	88.5	86.2	84.6	85.5	85.2	84.8	85.0	+0.2
Amyl & Butyl Nitrites	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	23.9	25.9	+2.0
LSD	46.2	37.4	34.5	32.2	34.2	35.3	35.0	34.2	30.9	30.6	30.5	28.5	31.4	33.3	+1.9
PCP	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	22.8	24.9	+2.1
Some other psychedelic	47.8	35.7	33.8	33.8	34.6	35.0	32.7	30.6	26.6	26.6	26.1	24.9	25.0	26.2	+1.2
Cocaine	37.0	34.0	33.0	37.8	45.5	47.9	47.5	47.4	43.1	45.0	48.9	51.5	54.2	55.0	+0.8
"Crack"	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	41.1	42.1	+1.0
Cocaine powder	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	52.9	50.3	-2.6
Heroin	24.2	18.4	17.9	16.4	18.9	21.2	19.2	20.8	19.3	19.9	21.0	22.0	23.7	28.0	+4.3ss
Some other narcotic (including methadone)	34.5	26.9	27.8	26.1	28.7	29.4	29.6	30.4	30.0	32.1	33.1	32.2	33.0	35.8	+2.8
Amphetamines	67.8	61.8	58.1	58.5	59.9	61.3	69.5	70.8	68.5	68.2	66.4	64.3	64.5	63.9	-0.6
Barbiturates	60.0	54.4	52.4	50.6	49.8	49.1	54.9	55.2	52.5	51.9	51.3	48.3	48.2	47.8	-0.4
Tranquilizers	71.8	65.5	64.9	64.3	61.4	59.1	60.8	58.9	55.3	54.5	54.7	51.2	48.6	49.1	+0.5
Approx. N =	(2,627)	(2,865)	(3,065)	(3,598)	(3,172)	(3,240)	(3,578)	(3,602)	(3,385)	(3,269)	(3,274)	(3,077)	(3,271)	(3,231)	

Note: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. NA indicates data not available.

^aAnswer alternatives were: (1) Probably impossible, (2) Very difficult, (3) Fairly difficult, (4) Fairly easy, and (5) Very easy.

even generally licit behaviors, like smoking and drinking, illicit for younger age groups. These facts no doubt do much to explain the strong tendency of the drug epidemic to show up particularly among the more deviant segments of the population (Jessor & Jessor, 1977; Johnston 1973; Osgood, Johnston, O'Malley, & Bachman, 1988).

Once use is popular within certain groups, use by a newcomer can be a way of fitting in socially and partaking of a communal experience. In our analyses of the reasons young people offer for their drug and alcohol use, we have found that the one most commonly mentioned was "to have a good time with my friends" (Johnston & O'Malley, 1986). We also found that among youngsters more involved with drugs, reasons having to do with psychological coping were more frequently mentioned.

Motivation to use can be aroused and maintained by many means—a subject to which we return later—but certainly social modeling is likely to be one of the most powerful mechanisms through which interest, or motivation to use, can be brought about. The strong association found in the smoking area between smoking by one's parents and older siblings and the individual's own likelihood of becoming a smoker provides powerful evidence of this fact. It also serves to remind us that the modeling comes not just from friends, but also from others in one's immediate role set, from role models in the media, and even from complete strangers in the media (such as the models used in cigarette and alcohol ads).

Reassurance

Because nearly all people are aware of the possibility that ingesting a relatively unfamiliar chemical substance will be harmful (and, in many cases, the dangers have already been publicly stated), I believe that the fourth condition necessary for an epidemic is reassurance. The adverse effects, or costs, must not be seen to outweigh the benefits. Reassurance can be obtained in a number of ways: through assertion by others in one's immediate interpersonal sphere, through assertion by experts or self-proclaimed experts in the public sphere, and by direct observation of other people using and not suffering any obvious adverse consequences (i.e., by vicarious learning). The mere fact that many others use may be the most compelling form of reassurance and undoubtedly contributes to the snowball effect in the beginning of an epidemic, in that the increasing number of users provides reassurance to an ever-widening sphere of the population.

Willingness to Violate the Law and the Predominant Social Norms

The last condition that must be met for the rapid expansion of the use of a particular drug to occur is a willingness on the part of a large number of people to violate the law and the predominant social norms. The vari-

ous classes of psychoactive substances we have been discussing vary considerably, not only in the degree to which their possession is legal, but in the extent to which their use is considered illicit (i.e., contrary to predominant social norms). Although not widely condoned, the use of many inhalant drugs is not considered very illicit either, whether by adolescents or adults. Of the illegal and the controlled psychotherapeutic substances, marijuana is clearly the least disapproved (Johnston et al., 1989). Table 6.2 illustrates the point. It also shows that for any given drug, experimental use receives less negative reaction than does occasional use, and occasional use less than regular use. The drugs can be rank-ordered on the extent to which their use is disapproved of; and that rank ordering matches very closely the extent to which they are seen as dangerous. This in part has led me to the hypothesis (first put forward in Johnston, 1985) that among the illicit drugs, perceived risk is a major determinant of personal disapproval, and derivatively, of peer disapproval. This point is discussed later.

The use of any of the illicit drugs at any level of involvement has been widely disapproved by the older adult segment of the population (e.g. Johnston et al., 1989), which reflects the long-term predominant norms of society. Thus, to use any of the illicit drugs without medical instruction is to violate predominant norms and usually the law as well. And for a widespread epidemic of the sort we have had since the 1960s to occur, a large proportion of the population—or at least of certain age groups in the population—must be willing to violate those norms and laws. This is a fairly unusual circumstance, and one that must be understood if we are to explain an epidemic that extends well beyond the most deviant sector of the population.

IMPORTANT HISTORICAL FORCES IN THE MOST RECENT EPIDEMIC

All of the five factors discussed so far—awareness, access, motivation, reassurance, and willingness to violate laws and predominant norms—can be used to explain individual behavior, as well as people's behavior in the aggregate. But to explain the advent of the general epidemic of illicit drug use in the United States since the 1960s we need to look further at the historical forces that helped to bring about these conditions for a large number of illicit drugs.

In my opinion, the evolution of the American drug epidemic of the late 20th century is inextricably tied to two social changes that happened to coincide in the 1960s. One was the movement away from the outerdirectedness of the silent 1950s toward innerdirectedness—the movement toward the celebration of feelings, spontaneity, and intuitiveness. Drugs—in particular marijuana and LSD—came to be seen as appropriate vehicles for taking that journey to the "true" inner self. This shift toward innerdirected-

TABLE 6.2
Trends in Proportions of Seniors Disapproving of Drug Use

	Percentage "disapproving" ^a															
Q. Do you disapprove of people (who are 18 or older) doing each of the following? ^b	Class of 1975	Class of 1976	Class of 1977	Class of 1978	Class of 1979	Class of 1980	Class of 1981	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	'87-'88 Change	
Try marijuana once or twice	47.0	38.4	33.4	33.4	34.2	39.0	40.0	45.5	46.3	49.3	51.4	54.6	56.6	60.8	+4.2ss	
Smoke marijuana occasionally	54.8	47.8	44.3	43.5	45.3	49.7	52.6	59.1	60.7	63.5	65.8	69.0	71.6	74.0	+2.4	
Smoke marijuana regularly	71.9	69.5	65.5	67.5	69.2	74.6	77.4	80.6	82.5	84.7	85.5	86.6	89.2	89.3	+0.1	
Try LSD once or twice	82.8	84.6	83.9	85.4	86.6	87.3	86.4	88.8	89.1	88.9	89.5	89.2	91.6	89.8	-1.8s	
Take LSD regularly	94.1	95.3	95.8	96.4	96.9	96.7	96.8	96.7	97.0	96.8	97.0	96.6	97.8	96.4	-1.4ss	
Try cocaine once or twice	81.3	82.4	79.1	77.0	74.7	76.3	74.6	76.6	77.0	79.7	79.3	80.2	87.3	89.1	+1.8	
Take cocaine regularly	93.3	93.9	92.1	91.9	90.8	91.1	90.7	91.5	93.2	94.5	93.8	94.3	96.7	96.2	-0.5	
Try heroin once or twice	91.5	92.6	92.5	92.0	93.4	93.5	93.5	94.6	94.3	94.0	94.0	93.3	96.2	95.0	-1.2	
Take heroin occasionally	94.8	96.0	96.0	96.4	96.8	96.7	97.2	96.9	96.9	97.1	96.8	96.6	97.9	96.9	-1.0s	
Take heroin regularly	96.7	97.5	97.2	97.8	97.9	97.6	97.8	97.5	97.7	98.0	97.6	97.6	98.1	97.2	-0.9s	
Try amphetamines once or twice	74.8	75.1	74.2	74.8	75.1	75.4	71.1	72.6	72.3	72.8	74.9	76.5	80.7	82.5	+1.8	
Take amphetamines regularly	92.1	92.8	92.5	93.5	94.4	93.0	91.7	92.0	92.6	93.6	93.3	93.5	95.4	94.2	-1.2	
Try barbiturates once or twice	77.7	81.3	81.1	82.4	84.0	83.9	82.4	84.4	83.1	84.1	84.9	86.8	89.6	89.4	-0.2	
Take barbiturates regularly	93.3	93.6	93.0	94.3	95.2	95.4	94.2	94.4	95.1	95.1	95.5	94.9	96.4	95.3	-1.1	
Try one or two drinks of an alcoholic beverage (beer, wine, liquor)	21.6	18.2	15.6	15.6	15.8	16.0	17.2	18.2	18.4	17.4	20.3	20.9	21.4	22.6	+1.2	
Take one or two drinks nearly every day	67.6	68.9	66.8	67.7	68.3	69.0	69.1	69.9	68.9	72.9	70.9	72.8	74.2	75.0	+0.8	
Take four or five drinks nearly every day	88.7	90.7	88.4	90.2	91.7	90.8	91.8	90.9	90.0	91.0	92.0	91.4	92.2	92.8	+0.6	
Have five or more drinks once or twice each weekend	60.3	58.6	57.4	56.2	56.7	55.6	55.5	58.8	56.6	59.6	60.4	62.4	62.0	65.3	+3.3s	
Smoke one or more packs of cigarettes per day	67.5	65.9	66.4	67.0	70.3	70.8	69.9	69.4	70.8	73.0	72.3	75.4	74.3	73.1	-1.2	
Approx. N =	(2,677)	(2,957)	(3,085)	(3,686)	(3,221)	(3,261)	(3,610)	(3,651)	(3,341)	(3,254)	(3,265)	(3,113)	(3,302)	(3,311)		

Note: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001.

^aAnswer alternatives were: (1) Don't disapprove, (2) Disapprove, and (3) Strongly disapprove. Percentages are shown for categories (2) and (3) combined.

^bThe 1975 question asked about people who are "20 or older."

ness was evolving independently of the Vietnam War—which was the second and even more important historical change I want to discuss—but was greatly intensified by the consequences of that war.

Vietnam, of course, was the most prominent and determining feature in that period of American history. The alienation that it (and other historical events of the period, like Watergate) engendered among the young, gave rise to a generational rift of enormous importance. And drug use, largely *because* it was illicit, was adopted as an important symbol by the young—particularly by those most socially and politically alienated. In fact, it was an overdetermined form of symbolic expression, for drug use could be used not only to express open and very irritating defiance of the older generation and the establishment. It could be used (Particularly in the "passing of the joint") for the ritualistic expression of group solidarity and identity within a social movement, the counter-culture movement. And finally it could be used to call attention to the hypocrisy of the older generation in their acceptance of dangerous licit drugs and disapproval of supposedly "safe" illicit ones.

The Vietnam War, in my opinion, was the great catalyst that made the drug epidemic of the 1960s and 1970s a mass epidemic, rather than a relatively limited one. Not only did the symbolic expression add greatly to the "benefits" column in the decision-making ledger about whether to use, but the dramatic erosion of the legitimacy of the system in the eyes of so many young people greatly reduced the "costs" column, by permitting traditionally illicit and illegal behaviors to become licit within a certain age group—the young. In other words, widespread alienation among the young resulted in a breakdown of traditional norms, a motivation for rebellion, and spawning of a counter-culture movement, and certain drugs served the need created by those forces.

The empirical evidence that the use of illicit drugs—in particular marijuana and hallucinogens—were associated with anti-Vietnam and anti-government sentiment during that period is substantial (e.g., Clark & Levine, 1971; Johnston, 1973; Suchman, 1968), and this association was independent of being deviant in the more traditional sense of the term. Delinquency was virtually uncorrelated with anti-Vietnam sentiment even though both were strongly correlated with drug use (Johnston, 1973). With the end of the Vietnam War in 1973, however, this important catalyst to the drug epidemic was withdrawn, the counter-culture movement largely dissipated, and the symbolic expressive value of drug use, in those domains at least, largely eroded. This, I believe, sowed the seeds for a subsequent decline in the epidemic: The powerful catalyst was removed.

But that gets us ahead of the story. How do these historical events tie in with the five conditions stated as necessary for a large-scale epidemic of illicit drug use? First, they increased motivation to use. Second, the growing

social movement of the counter-culture increased awareness and access. Gurus of the movement provided reassurance about the safety of marijuana and LSD, and there was also plenty of role modeling. Finally, I have already noted that the great extent of youth alienation from the system and from the older generation created the conditions in which young people could violate the older generations' laws and norms because they defined their authority as illegitimate. A large social movement defined drug use—and primarily marijuana and hallucinogen use in the early stages—as legitimate within that movement, and this legitimization spread to an entire age group in the general population. As a result, the social consequences of these illegal behaviors—including possible peer ostracism and certainly including the likelihood of being reported to authorities—changed substantially. There was safety in numbers, because so many young people were using marijuana that they knew that the legal system was incapable of apprehending, let alone processing, a significant proportion of the users.

And marijuana, I contend, was the drug that brought many young people across that psychological boundary of doing something that was illegal and illicit, based on predominant norms. It was the pathbreaking drug that tore a great hole through the fabric of traditional, normative social constraints and made it far easier for young people to consider using other drugs. Why did they never use the other drugs in such numbers as they used marijuana? I believe that it was because they never saw them as being as safe (see Table 6.3) and as a result of that never found them as acceptable (see Table 6.2).

But to help explain further how the five necessary conditions for an epidemic are brought about, I want to turn to the next part of the theory, which is that there are important public roles that are played out in the expansion phase of an epidemic.

PUBLIC ROLES IN THE EXPANSION PHASE OF AN EPIDEMIC

There are four critical public roles that are likely to be played out on the public stage during the expansion phase in the use of any illicit drug. I have chosen to label them the *proponents*, the *reassurers*, the *public role models*, and the *antagonists*.

The Proponents

Both awareness and motivation are likely to be brought to the population by the proponents of the use of a drug. The quintessential public proponent, of course, was Timothy Leary, who integrated LSD and marijuana use into a personal social philosophy that he codified in the phrase "tune in, turn on, and drop out." A proponent who integrates drug use into a

TABLE 6.3
Trends in Harmfulness of Drugs as Perceived by Seniors

Q. How much do you think people risk harming themselves (physically or in other ways), if they...	Percentage saying "great risk" ^a														'87-'88 Change
	Class of 1975	Class of 1976	Class of 1977	Class of 1978	Class of 1979	Class of 1980	Class of 1981	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	
Try marijuana once or twice	15.1	11.4	9.5	8.1	9.4	10.0	13.0	11.5	12.7	14.7	14.8	15.1	18.4	19.0	+0.6
Smoke marijuana occasionally	18.1	15.0	13.4	12.4	13.5	14.7	19.1	18.3	20.6	22.6	24.5	25.0	30.4	31.7	+1.3
Smoke marijuana regularly	43.3	38.6	36.4	34.9	42.0	50.4	57.6	60.4	62.8	66.9	70.4	71.3	73.5	77.0	+3.5ss
Try LSD once or twice	49.4	45.7	43.2	42.7	41.6	43.9	45.5	44.9	44.7	45.4	43.5	42.0	44.9	45.7	+0.8
Take LSD regularly	81.4	80.8	79.1	81.1	82.4	83.0	83.5	83.5	83.2	83.8	82.9	82.6	83.8	84.2	+0.4
Try PCP once or twice	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	55.6	58.8	+3.2s
Try cocaine once or twice	42.6	39.1	35.6	33.2	31.5	31.3	32.1	32.8	33.0	35.7	34.0	33.5	47.9	51.2	+3.3s
Take cocaine occasionally	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	54.2	66.8	+2.4
Take cocaine regularly	73.1	72.3	68.2	68.2	69.5	69.2	71.2	73.0	74.3	78.8	79.0	82.2	88.5	89.2	+0.7
Try "crack" once or twice	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	57.0	62.1	+5.1ss
Take "crack" occasionally	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	70.4	73.2	+2.8
Take "crack" regularly	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	84.6	84.8	+0.2
Try cocaine powder once or twice	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	45.3	51.7	+6.4sss
Take cocaine powder occasionally	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	56.8	61.9	+5.1ss
Take cocaine powder regularly	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	81.4	82.9	+1.5
Try heroin once or twice	60.1	58.9	55.8	52.9	50.4	52.1	52.9	51.1	50.8	49.8	47.3	45.8	53.6	54.0	+0.4
Take heroin occasionally	75.6	75.6	71.9	71.4	70.9	70.9	72.2	69.8	71.8	70.7	69.8	68.2	74.6	73.8	-0.8
Take heroin regularly	87.2	88.6	86.1	86.6	87.5	86.2	87.5	86.0	86.1	87.2	86.0	87.1	88.7	88.8	+0.1
Try amphetamines once or twice	35.4	33.4	30.8	29.9	29.7	29.7	26.4	25.3	24.7	25.4	25.2	25.1	29.1	29.6	+0.5
Take amphetamines regularly	69.0	67.3	66.6	67.1	69.9	69.1	66.1	64.7	64.8	67.1	67.2	67.3	69.4	69.8	+0.4
Try barbiturates once or twice	34.8	32.5	31.2	31.3	30.7	30.9	28.4	27.5	27.0	27.4	26.1	25.4	30.9	29.7	-1.2
Take barbiturates regularly	69.1	67.7	68.6	68.4	71.6	72.2	69.9	67.6	67.7	68.5	68.3	67.2	69.4	69.6	+0.2
Try one or two drinks of an alcoholic beverage (beer, wine, liquor)	5.3	4.8	4.1	3.4	4.1	3.8	4.6	3.5	4.2	4.6	5.0	4.6	6.2	6.0	-0.2
Take one or two drinks nearly every day	21.5	21.2	18.5	19.6	22.6	20.3	21.6	21.6	21.6	23.0	24.4	25.1	26.2	27.3	+1.1
Take four or five drinks nearly every day	63.5	61.0	62.9	63.1	66.2	65.7	64.5	65.5	66.8	68.4	69.8	66.5	69.7	68.5	-1.2
Have five or more drinks once or twice each weekend	37.8	37.0	34.7	34.5	34.9	35.9	36.3	36.0	38.6	41.7	43.0	39.1	41.9	42.6	+0.7
Smoke one or more packs of cigarettes per day	51.3	56.4	58.4	59.0	63.0	63.7	63.3	60.5	61.2	63.8	66.5	66.0	68.6	68.0	-0.6
Approx. N =	(2,804)	(2,918)	(3,052)	(3,770)	(3,250)	(3,234)	(3,604)	(3,557)	(3,305)	(3,262)	(3,250)	(3,020)	(3,315)	(3,276)	

Note: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. NA indicates data not available.

^aAnswer alternatives were: (1) No risk, (2) Slight risk, (3) Moderate risk, (4) Great risk, and (5) Can't say, drug unfamiliar.

more general philosophy or social movement has the most chance of giving rise to a major epidemic, insofar as that larger philosophy or movement takes hold. Given the historical conditions I have mentioned—a turning away from outerdirectedness and massive political and social disaffection among young people—Leary and a number of other proponents of the counter-culture movement (like Allan Ginsburg, John Sinclair, or Abbie Hoffman) had a powerful message for a receptive audience. There will surely be other periods in our history when there is widespread disaffection among the young, and these also will be periods of high risk for future ideologically driven epidemics of illicit drugs led by ideologically driven proponents.

Not all proponents, however, need be such florid, public, or ideologically driven figures as Leary and the other leaders of the counter-culture movement. In an earlier time, Sigmund Freud was a strong proponent of cocaine use, and newspaper accounts in recent years suggest that some psychotherapists were proponents of the drug MDMA or "ecstasy." When therapists or other professionals become proponents, they are also likely to take on the second role, which is sometimes separate, that of the reassurers.²

The Reassurers

The function of this role is related to achieving one of the necessary conditions for an epidemic—that of providing adequate reassurance about possible adverse consequences of use. There were many professionals who were publicly reassuring about the safety of marijuana—particularly during the first decade of the epidemic—although few are heard today. Timothy Leary played this role, as well as that of proponent, for LSD, trading on his expert power as a Harvard professor and scientist. Sigmund Freud did it in the case of cocaine, and some psychotherapists did it for MDMA. And a number of other names come to mind as having played the role of reassurer: Lester Grinspoon (1971), Robert Ashley (1975), Andrew Weil (e.g., Weil & Rosen, 1983), and Norman Zinberg (e.g., Zinberg & Robertson, 1972).

For the psychotherapeutic drugs, there was probably less need for a public role of reassurer, because these were FDA-approved drugs already widely prescribed by physicians. When taken within certain bounds, they would appear to be safe. In a sense, the reassurers for these drugs were the entire medical community. Interestingly, in the years since the beginning of the epidemic, these reassurers appear to have become less reassured themselves, and have reduced considerably their prescription of these drugs to young people (Johnston, O'Malley, & Bachman, 1987c).

²It is also important to note the degree to which the role of proponents can become institutionalized as it did in the form of NORML and underground papers like *High Times*.

In the case of heroin, no one took the public role of reassurer, at least not for many decades, which undoubtedly helps to explain the very low levels of use and very high perceived risks associated with that drug. And in the current era of AIDS, it is doubtful that anyone could play that role very convincingly—at least not for intravenous use.

For cocaine, as recently as the late 1970s and early 1980s, a reassurance function was being played by scientific professionals in the media ("Cocaine behaviors," 1982; "The cocaine scene," 1977). The clinical and scientific evidence about the addictive and overdose hazards of the drug was so slow to accumulate that even many well-meaning professionals were fooled into believing it was not addictive or dangerous. The parallel to Sigmund Freud's experience is noteworthy.³

When a class of drugs is legal, representatives of the industry can become the reassurers, as has been the case with the tobacco industry. Not only can the content of advertising carry a reassuring message, as tobacco ads did quite explicitly for many years, but the mere existence of publicly sanctioned advertising gives a message of reassurance to youngsters. I would contend, because most would reason that a caring, responsible adult society would protect them from advertisements for anything that is addictive or otherwise dangerous for them. Even the mere legality of a product carries such an implicit message. Put another way, the government itself can take the role of reassurer both by letting a product be sold legally and by allowing it to be legally advertised or promoted in other ways.

The Public Role Models

Aside from the proponents, who actively encourage use, and the reassurers who say or imply that use is safe, there are others in the public eye who simply use drugs and whose use becomes known to broad segments of the public. They thus serve as role models. And there are still others who at the very least condone use, and who let their opinions be known in various ways, thus exerting an opinion-leader function. Such *public role models*, as I call them, can play an important role in the rise and maintenance of an epidemic, and surely did in the most recent one. Indeed, they played an important role in helping to bring drug use "out of the closet."

Some even verge on being proponents, and then the proper classification becomes a harder one to make. Paul McCartney's marijuana use, for example, was widely recognized, and the Beatles eulogized LSD use in their immensely popular song "Lucy in the Sky with Diamonds." A great many

³It might also be noted that one argument that resulted in false reassurance was that a number of drugs—marijuana, peyote, and cocaine in particular—are derived from natural plants and, therefore, were considered somehow safer than synthetics. The argument gained currency, no doubt, because of its concordance with the "back to nature" movement of the times.

rock musicians and groups of that period—such as Jefferson Airplane and Jimi Hendrix—kept their drug use, and support of drug use, rather thinly veiled. And whatever veil they had was repeatedly lifted for the public by an unending stream of drug-related arrests, overdose deaths, and lesser emergencies among their number.

During the same period there were also many movies and television entertainment programs that were fairly overt in their condoning of drug use, such as the "Laugh In" series on television and the Cheech and Chong movies. Even a number of apparently "straight" performers, such as Johnny Carson, made light of drug use. More recently—and particularly as a result of the cocaine epidemic—drug use by many professional athletes has become common knowledge.

Athletes, rock musicians, and other entertainers are major influential role models for young people. Their use, or their condoning of use, has an important influence on young people by making drug use seem more acceptable and more "with it." They play a role in increasing both awareness and motivation, providing some reassurance as well as legitimization. And what may be most important is what young people *perceive* to be the practical and moral norms in these groups, regardless of what they actually are. In a recent paper, we reported survey results showing that the majority of young people believe that drug use, and the acceptance of drug use, are still widespread among professional athletes, among actors and actresses, and among rock performers (Johnston, in press). My own belief is that their perceptions greatly exaggerate what exists in reality, and perhaps always have. I hypothesize that this occurs because the few cases that come to light are so magnified by media coverage that young people end up with an exaggerated picture. If I am correct that their perceptions of drug use among these important role model groups are badly distorted and that this distortion may affect their own behavior, this would suggest an area for possible constructive intervention in the future.

The Antagonists

The last public role that I contend can contribute importantly to the rise, as well as the maintenance, of an epidemic is that of the antagonist. This role may not be a necessary one, but it is common and contributory.

For many drugs there were publicly visible antagonists—Harry Anslinger in the case of marijuana during the 1930s and Gabriel Nahas and many others in the 1970s. The effect of the antagonists on the epidemic is not always what they intend it to be: It seems to me that in a number of cases they have had the paradoxical effect of helping to stimulate or sustain the epidemic. The most emotional of the antagonists usually go beyond the realm of knowledge or credibility and have the effect of both solidifying pro-drug forces and sentiment and closing down the channels of communication with the drug-prone part of the population.

The federal government took on the role of antagonist in the early 1970s with a series of anti-drug commercials that came to be seen as untruthful and propagandistic. I believe it had the effect of hardening young peoples' resistance to any messages from "the system" about drugs, including those containing warnings based on fact. Fortunately, the government did the right thing, which was to drop that propaganda effort.

Politicians, too, can take on this role and in the process become negative referent figures for users and potential users in the relevant age groups. Richard Nixon based much of his presidential campaign on the evils of drug use and surely became a negative referent for many young people. I think the jury is still out on whether Nancy Reagan, with her "Just say no" campaign, became a negative referent for some.

It was the opinion of many young people during the early 1970s that the attack on marijuana and other drugs by the antagonists was really an attack on a much broader array of philosophical and political positions they held, and to a considerable degree I believe they were right. This almost surely had the effect of helping to solidify the pro-drug movement.

To sum up this section on social roles in the advent of an epidemic, the proponents and public role models stimulate awareness and increase motivation to use the drug, the reassurers provide the necessary reassurance about its safety, and the antagonists help to consolidate the pro-drug forces and make young people more resistant to cautionary messages. The growing demand resulting from all of these forces undoubtedly leads to a growing profit-driven production and distribution network, which in turn provides access to an ever larger portion of the population.

This series of processes I have described is most clearly observable in the case of marijuana, partly because the proponents, reassurers, antagonists, and public role models are so clearly identifiable. It should be remembered that most of the other drugs to come along got to "draft" behind marijuana, which had made so many young people willing to violate established norms and laws about drug use. Further, by achieving access to marijuana many young people put themselves in ready proximity for access to other drugs and to the modeling of their use. I argue that marijuana played a unique role in this epidemic and that its decline in recent years will play an important role in the decline of the overall epidemic.

OTHER FACILITATING FACTORS OF THE MOST RECENT EPIDEMIC

In addition to the two historical forces already mentioned—the shift toward innerdirectedness and the increasing youthful alienation—I think the epidemic since the 1960s had other structural and demographic factors that contributed to its size. I only list them here for the sake of brevity.

First, there was a severe erosion in some of the societal institutions that have traditionally socialized young people and provided them with some measure of adult supervision or control. Breakdown of the control exerted by the nuclear family was occurring because of the rising divorce rates and the increase in the proportion of working mothers. The extended family and the community were both somewhat eroded by increased mobility and urbanization. Active membership in formal religious denominations was at a fairly low point historically. And the school systems were stretched by having to deal with much larger numbers of students, as the baby boom passed through adolescence. Somewhat by default, the media, and particularly television, took over much of the critical role of socialization in the society, but unfortunately, it was not an institution very well structured or motivated to promote the goal of responsible and caring socialization.

American young people also had more freedom than ever before in the sense that they more often had cars and a considerable amount of discretionary funds—a condition my colleague, Jerald Bachman (1983), has labeled "premature affluence." Having fewer social constraints and more discretionary resources made it easier for many of them to take up a new type of illicit behavior in the form of drug use.

Finally, it is my belief that American youngsters were growing up in this period with an increased expectation of continual stimulation and instant gratification without the requirement of much effort on their part—fostered largely by television but also by fast food restaurants, video games, fewer responsibilities in the home, and so on. Drug use, of course, is the ultimate in instant gratification without the necessity of intervening effort. In summary, I think there were some important structural, technological, and demographic changes that created a fertile ground in which the drug epidemic could grow, and that still contribute to the maintenance of the epidemic today.

FORCES MAINTAINING AN EPIDEMIC

One could argue that there is a middle phase in the full cycle of an epidemic—one that occurs after the forces that had given rise to it have led a large segment of the population to use drugs, but before the forces that will eventually end it have come into play.

Continuing Awareness and Accessibility

Some of the forces that tend to sustain an epidemic have already been mentioned: the widespread awareness among upcoming birth cohorts of a wide range of behavioral alternatives for altering mood and consciousness, and

the widespread accessibility provided by the supply and production system that was spawned by the epidemic in its expansion phase. Once established, organizations tend to seek survival and perpetuation (Katz & Kahn, 1966) and the major drug cartels are no exception to this principle.

Inter-Cohort Role Modeling

Forward momentum is also provided by the large numbers of slightly older youngsters who are users. Put more concretely, there is an ongoing process of extensive role modeling for younger children by older peers and siblings, which for the younger ones has the effect of raising their motivation to use, providing reassurance about consequences, and legitimating the violation of drug-related laws and norms in the larger society.

Institutional Support Mechanisms

Also contributing to the maintenance of the epidemic are the institutional support mechanisms that have evolved—like NORML and magazines such as *High Times*. All of these forces help to maintain the forward momentum of the epidemic. The drug epidemic continued to an impressive extent beyond the life of some of the key forces that had given rise to it—in particular, the counter-culture movement spawned by the Vietnam War. In an earlier paper (Johnston, O'Malley, & Bachman, 1987a), we presented evidence that illicit drug use among American young people is no longer a symbolic expressive behavior—certainly not within the political domain—and thus has become primarily a hedonistic phenomenon.

Continual Introduction of New Drugs

Still another factor that helps to maintain the epidemic is the continual introduction of new drugs onto the scene. These help to sustain interest and replace other drugs that have fallen from popularity. Because a significant number of youth and young adults have already crossed the psychological and social boundaries to using other illicit drugs, there is greater receptiveness to new ones that may be introduced subsequently. The existing distribution system is ready to add new drugs to its product line and thereby provide widespread access to them rather quickly.

Other Factors

Other forces that might also sustain the epidemic are possible. The symbolic expressive value of drugs could have remained longer had the Vietnam War not come to an end, or drug use could have become associated with, or ex-

pressive of, other political or philosophical positions. It is also possible that illicit drug using habits could be passed on from generation to generation through intergenerational modeling. Concern has been expressed about the last possibility—that the people who grew up in the drug generation will pass on their drug using habits to their children—but so far I have not seen good evidence to substantiate the case. My own hypothesis is that such effects will be fairly minimal because (a) many users quit themselves later in the life cycle; (b) concern about possible modeling effects leads parents to either quit or conceal their use from their children; and (c) few parents find it acceptable for their children to use drugs even if they did themselves, meaning that the attitudes they pass on are generally not supportive of use.

FORCES LEADING TO THE DECLINE OF AN EPIDEMIC

As we have seen, the use of the different illicit drugs, which has reached epidemic levels among American young people, began to decline at quite different historical points. That suggests that factors specific to those drugs, and not common across the whole illicit drug use epidemic, played important roles in their decline. Two such primary forces are discussed at some length here—one having to do with the loss of reassurance about the safety of using a drug, and one having to do with lowered motivation to attain the psychological experience that the drug, or class of drugs, offers. The loss of reassurance about safety has probably been the most important, and likely will be in future drug epidemics as well.

The Importance of Perceived Risk

During the expansion and maintenance phases of an epidemic of use of a particular drug, the public is reassured about its safety by those who take the public roles of reassurers and also by the substantial number of users who appear to use it without significant physical or psychological damage.⁴

⁴The consequences of use may be social as well as physical or psychological, of course. For example, the probability of being caught by various types of authorities (i.e., parents, school authorities, police) is undoubtedly taken into account, as well as the likely severity of the consequences should apprehension occur. But such factors have not been very effective deterrents of behavior so far in the United States because the probability of apprehension was very low and the consequences for possession for personal use relatively limited. (See, e.g., Johnston, O'Malley, & Bachman, 1981.) One reason that the probability of apprehension has been so low was that within the younger age band in the population there was relatively little sympathy with the law—particularly in relation to marijuana and particularly in the earlier years of the epidemic (Johnston et al., 1989).

Deducing from the American experience since the 1960s, we have concluded that the decline phase in the use of particular drugs has a great deal to do with the evolution of an awareness of the adverse consequences of use—particularly in relation to physical and psychological health.

This theoretical explanation for the decline of many of the specific drugs is one that we have been developing and empirically substantiating for some years. In a sense, we acted on this hypothesis at the beginning of the study in 1975 by devoting a considerable amount of instrumentation to measuring the degree of risk perceived to be associated with various levels of use of the various drugs (Johnston & Bachman, 1980). However, the first confirming evidence did not really begin to accumulate until 1979, when a dramatic increase in the perceived risks of marijuana began to occur among American young people, and simultaneously marijuana use began to drop. It was early in this process that we described perceived risk as the likely determining factor (Johnston, 1982; Johnston, Bachman, & O'Malley, 1981). The evidence was expanded with data on the reasons abstainers and quitters gave for their non-use of marijuana *and* in the trends in the frequency with which they gave those reasons (Johnston, 1982, 1985). Another hypothesis that was advanced in the latter article stated that changes in perceived risk may be driving changes in disapproval (and derivatively, peer norms), because the magnitude of the changes in perceived risk were much greater than those in personal disapproval. Trends in marijuana use and in these attitudes continued to evolve throughout the 1980s in ways consistent with this theoretical position, and we have been able to eliminate one major alternative hypothesis—that changes in access or availability caused the downturn (Johnston et al., 1989). Another alternative hypothesis was addressed in a recent article and found inadequate—namely that a shift among young people toward a more conservative lifestyle could have caused the downturn in use (Bachman, Johnston, O'Malley, & Humphrey, 1988). In that article it was also shown that if one holds constant across time the level of perceived risk, no downturn in use is to be found. In summary, the hypothesis about the importance of perceived risk in deterring use has now achieved extensive empirical support, particularly in the case of marijuana. A more detailed summary of that empirical evidence is provided in chapter 7, along with some new evidence on the importance of perceived risk.

Unfortunately, the Monitoring the Future study did not include questions about the perceived risk of PCP during the period of its rapid fall, which I am quite sure would have substantiated the same hypothesis in the case of that drug. But the very high level of perceived risk which we found in the mid 1980s for PCP, *after* the period of great decline, is consistent with such an interpretation. (In fact, experimenting with PCP is now seen as carrying "great risk" by more seniors than any other drug, including heroin; see Table 6.3.)

The more recent epidemic of cocaine use proved stubbornly resistant to societal efforts to control it in the early 1980s. Based on the apparent importance of perceived risk in the downturn in marijuana use (and most likely in the earlier declines in the use of LSD, PCP, and methamphetamines), we predicted that a turnaround in perceived risk would have to occur for cocaine as well if the prevalence of use was to fall (Johnston, O'Malley, & Bachman 1984, 1985). We further expected that it would have to happen for experimental and occasional use, because regular use was already coming to be seen as more dangerous, yet prevalence had not declined (Fig. 6.10). Because very few cocaine users see themselves as regular users—particularly in high school—the attitude shift would have to get closer to the relevant behavior, we reasoned. Between 1986 and 1987, a sharp change occurred in the perceived risk of occasional and experimental use (Fig. 6.9) and, as predicted, the prevalence of use began to fall (Fig. 6.5). Both trends continued in 1988. This gives further support for the theory, and suggests an elaboration, namely, that it is the level of use most commonly adopted for which perceived risk is most relevant for changing behavior. A shift in perceived risk of regular use was relevant for marijuana because so many young people were regular users. (Current daily use stood at 11% among seniors in 1978; see Fig. 6.10.) On the other hand, the perceived risk of regular use for cocaine did not translate into changed use levels because very few were regular users. This derivative hypothesis is consistent with the findings of the more general attitude change literature, which shows that attitudes are more likely to affect behavior to the extent that they are specific to the behavior (e.g., Ajzen & Fishbein, 1977).

Another hypothesis that is derived from the marijuana and cocaine experiences is that it is perceived risk of regular use that is likely to move

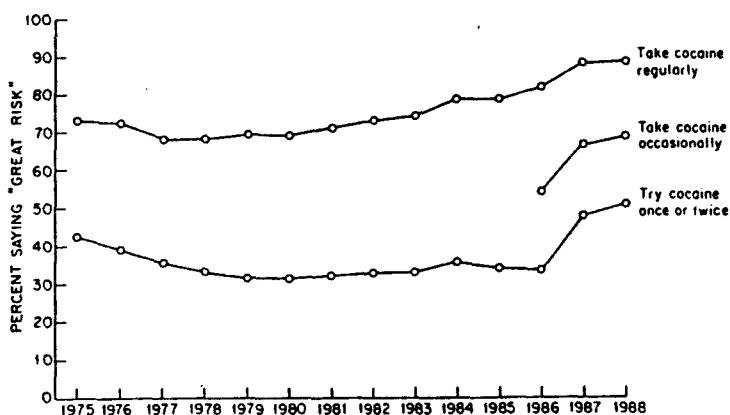


FIG. 6.9. Trends in perceived harmfulness: Cocaine (all seniors).

first, to be followed later by similar changes in the perceived risk of occasional use and experimental use. Because experimental and occasional use are necessary steps along the pathway to regular use, which in turn may carry risks of habituation or addiction, it seems logical that if regular use comes to be seen as more dangerous, so will the intervening steps associated with getting to that stage.

Still another hypothesis derived largely from this experience is that during the decline phase in the epidemic of a given drug, those subgroups—whether defined in terms of demographics or lifestyle variables—which have attained the highest levels of use will tend to show the greatest rate of decline (assuming that addiction has not widely occurred). We have reported such findings in relation to gender, region, and urbanicity (Johnston et al., 1989) and in relation to religiosity, grades, and time spent out of the home (Bachman et al., 1988).

Concordance With the Health Belief Model

Many of the findings presented here regarding the importance of perceived risk as a deterrent to the use of a drug, fit nicely into the more general theoretical framework of the Health Belief Model (Janz & Becker, 1984; Maiman & Becker, 1974; Rosenstock, 1974). The Health Belief Model was developed over the last 40 years to help explain and predict people's behavior in the domains of disease prevention, medical care utilization, delays in seeking medical care, and compliance with medical regimens. It was used for the most part to understand how best to get people to under-

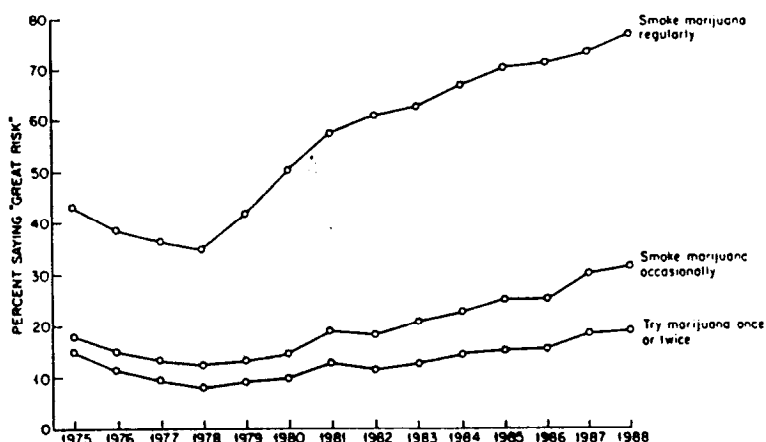


FIG. 6.10. Trends in perceived harmfulness: Marijuana (all seniors).

take some behaviors that would be disease-preventing in their effect, so it is different in that regard from the domain of behavior under discussion here—illicit drug use—where the goal is to get people to *desist* or *abstain* from certain behaviors. Still, the major motivation of the behavior is the prevention of morbidity and mortality, and the major influences on behavior are posited to be perceived threat or danger, and perceived personal susceptibility.

Within the Health Belief Model, the principal determinants of an individual's readiness to take particular actions to avoid a disease are (a) the perceived seriousness or severity of the disease or condition, (b) the person's perceived susceptibility or vulnerability to that disease, or condition, and (c) the person's belief that the particular action is feasible and would be efficacious in reducing susceptibility or severity. Obstacles to, or costs of, the avoidance behavior are also taken into account. The theory also holds that cues to action, or triggers, are important to instigating the behavior, once the necessary beliefs about severity, susceptibility, and the benefits are in place. The cue or stimulus may be internal, such as a symptom or perception of a body state, or external—from the mass media, interpersonal communication, and so on (Maiman & Becker, 1974; Rosenstock, 1974).

In the cases of both marijuana and cocaine, it would appear that young people's assessment of the severity of the consequences that can follow from use have changed. Cocaine, for example, is now widely acknowledged to have the potential for addiction and for death from overdose—beliefs that were not widely held, even among professionals in the field, as recently as the late 1970s. Perceived susceptibility has also changed in that the perceived probability of such severe consequences has risen even for experimental and occasional use. Thus, dangers previously seen as relevant only to heavy users, which probably very few young people ever expected to become, are now seen as relevant to lighter users, which many more of them are. In this case, the efficacy of the preventive behavior in question—namely, quitting or abstaining from use—is fairly obvious, and really need not be demonstrated.

So, although abstaining from drug use does not fit the mold of positive behavior aimed at preventing disease which is typical of the Health Belief Model, nor are all of the positive goal states sought relevant to disease (e.g., goals such as compliance with the law, with parental wishes, or with changing peer norms), this model does have a considerable amount of applicability to the phenomenon under study here. Of particular relevance, perhaps, is the application of rational decision-making processes in the explanation of much adolescent drug-using behavior. (Maiman & Baker, 1974, present a comparison and integration of the Health Belief Model with six other psychological theories of decision making.)

A Possible Case of Reversed Effects of Perceived Risk

Before leaving the role of perceived risk in the decline phase of a number of drugs, I would like to mention that this model—and the Health Belief Model more generally—is based on the assumption that a considerable portion of the user and potential-user populations are motivated to protect their own health and will act rationally toward that end. In other words, an increase in the perceived dangers of a drug will motivate them to abstain from use or cease it. The data from the Drug Abuse Warning Network, however, show that even when the dangers of a drug become widely recognized—as in the case of PCP—there are still significant pockets of use in certain inner-city populations. It is my hypothesis that in some youth populations—particularly inner city males who spend a lot of time on the street—the risks associated with a drug have little or no deterrent value, either because their motivation to protect their health is lower generally, or more likely, because using such drugs is seen as an effective way to express one's fearless and "macho" nature.⁵ (Put in terms of the Health Belief Model, it may amount to an unrealistic denial of personal susceptibility.) Such beliefs may actually make such drug use *more* likely, by defining use as a "macho" statement. If I am right in this regard, it would help to explain why some of the most dangerous forms of drug use—heroin, PCP, and crack, for example—appear to occur disproportionately in these populations. It might also suggest that prevention efforts in these areas need to be directed more at challenging the notion that using such drugs is macho than at solely emphasizing the dangers of the drugs.

PUBLIC ROLES IN THE DECLINE PHASE OF AN EPIDEMIC

The time it takes for the population to come to recognize the risk of a drug and begin to modify its behavior accordingly depends in large part on the functioning of people in three additional social roles of importance to a drug epidemic—the knowledge providers, the educators, and the unfortunate public role models.

The Knowledge Providers

The knowledge providers are the clinicians, social scientists, and biomedical scientists who give rise to a body of factual information about the consequences of using a drug. Probably most of that information is accurate,

⁵In Washington, DC PCP is known on the street as "Saint Elizabeth's," after the Federal mental hospital to which so many PCP users get taken. Obviously these youngsters know something about the extremely adverse consequences of this drug, but still a number of them continue to use it.

although I do not assume that it need be to have an impact. Although the effects of this knowledge are important, the occupants of these roles are usually not publicly visible figures. Nevertheless, they play an important function in reversing an epidemic by providing the knowledge base necessary for later persuasive communication.

Institutional mechanisms in turn play a key role in developing this knowledge base, because government agencies like the National Institute on Drug Abuse set funding levels and priorities for the work of the knowledge providers. Data-collection systems such as the Drug Abuse Warning Network and the cocaine hotlines also provide important clinical data about the rates at which various kinds of clinical consequences occur for the various drugs. These, too, add to the knowledge base of relevance.

The relative importance of the clinical data versus data coming from experimental or large epidemiological studies depends partly on the nature of the effects of the drug. To the extent that the effects are short-term or acute, that is, they occur during or immediately following ingestion (e.g., as in the case of PCP), clinicians dealing with emergency medicine are likely to be the ones to sound the alarm first. To the extent that the effects are long-term, and to the extent that they occur with relatively low probability (e.g., as in the case of cigarettes), it is more likely to be the epidemiologists or biomedical scientists who establish convincing evidence of the dangers involved.

The Educators

Within the present theoretical framework the educators are those individuals, groups, and organizations who disseminate to the public what the knowledge providers have found. In other words, they make the public aware of the hazards of drug use—particularly the addiction, and other physical and psychological hazards. (Often the antagonists attempt to play this role but, as I have said, they are usually unsuccessful because their objectivity, and therefore their credibility, becomes questioned.) The educators might be recognized public figures, but during this epidemic they have mostly been people not in the public eye.

One important group of educators is comprised of those in the media who package and present new knowledge to the public in a variety of ways, such as in news programs, dramatic programs, documentary specials, and so on. Such media coverage of drugs and their hazards—in particular, marijuana and cocaine—has been particularly ubiquitous since the late 1970s. In recent years the media have also played a more conscious and intentional role as educators through their public service advertising campaigns against drug use. The National Institute on Drug Abuse dissemi-

nated the ad campaign entitled "Cocaine: the Big Lie" with the help of the Advertising Council, and the National Media-Advertising Partnership was formed to develop an ongoing series of campaigns that have focused on marijuana and cocaine. They run the risk of acquiring the role of untrustworthy antagonists, rather than that of educators, but so far our evidence suggests that they have maintained a high level of credibility with their intended audience (Johnston, in press).

Scientific and governmental organizations may also play important intervening roles between the knowledge providers and the educators in compiling and giving credibility to a body of knowledge. Recent examples would include the summary reports by the Institute of Medicine (1982) and Canada's Addiction Research Foundation (1981) with regards to the health consequences of marijuana.

Of course, outside of the public media, important educator roles are played by schools and parents and youth organizations in teaching young people face-to-face about the hazards of various drugs. Their effectiveness no doubt depends in part on the knowledge base to which they have access and on their credibility, just as does the effectiveness of the more public educator figures. It may never be possible to separate out the relative importance of these different educator groups in bringing about the changed beliefs about the dangers of drug use that we observe among young people. Nevertheless, it seems to me likely that they have a synergistic effect to the extent that each tends to reinforce the cautionary messages youth receive from the other educator groups.⁶

Unfortunate Public Role Models

Finally, the education of the public may also be carried out in an unintentional way by those whose adverse consequences from drug use serve as object lessons for large segments of the population. These are the public role models who get into trouble with drugs and thus provide an opportunity for vicarious learning by the general public. Overdose deaths of public figures like rock stars and actors likely had some educational effects, although because many of these have involved heroin—and because heroin has long been seen as very dangerous—they may not have had a great impact. On the other hand, the cocaine-related deaths of athletes Len Bias and Don Rogers in 1986 were initially thought to be related to casual cocaine use, and because these levels of cocaine use were not widely assumed

⁶Note that I have emphasized here only one of the traditional functions of educators, broadly defined—that of communicating knowledge about the consequences of drug use. There are a number of important functions they play in relation to drug use, not the least of which is social skills training.

to be dangerous (Johnston et al., 1989), these deaths very likely had considerable impact. Certainly our evidence on trends is consistent with that interpretation (see Table 6.4). Put another way, vicarious learning about the hazards of drugs can occur both in the public arena, as well as in one's own role set as discussed earlier. Within the context of the Health Belief Model, these highly public events may have served as the "cues" or social stimuli needed to precipitate changes in behavior for many young people. The more day-to-day events, described as the work of the educators, through the mass media and elsewhere, may also provide these stimuli, although the importance of such a cuing function may be less in the arena of drug use than in other areas addressed by the Health Belief Model, because it is not the undertaking of a behavior that is to be brought about by the educators—as is usually true under the Health Belief Model—but rather the avoidance of a behavior.

Public Roles and the Lag Time in Knowledge Development and Dissemination

It is unfortunately the case that the time lag between the onset of the widespread use of a drug in the population and the accumulation of evidence about adverse consequences can be a long one. Most often the clinical and scientific data needed from the knowledge providers by the educators is not gathered until the epidemic is already occurring—partly because the clinical evidence may take some time to accrue if there is much of a time lag between the initiation of use and the occurrence of the adverse consequences, and partly because the planned scientific laboratory or epidemiological studies may not be initiated in great number until the drug is identified as having attained some appreciable level of use in the population. Those studies then have their own time lag to completion.

As was mentioned earlier, cigarettes probably illustrate the extreme case in the time required for the knowledge providers to gather the necessary evidence on the consequences to deter use, and this was because the effects come almost entirely from chronic use. Most of the illicit drugs took less time for their adverse consequences to be recognized. Still, in the case of cocaine, although the epidemic of use began about 1976, it was not until the early 1980s that enough clinical and other scientific evidence accumulated so that the educators could begin to drown out the reassurers in their calls for caution. This happened because there tends to be quite a long time lag, on the order of 6 or 7 years, between the initiation of use and the development of addiction and other severe consequences (Gold, 1984). Marijuana also had quite a long delay between the onset of an epidemic of use (in the late 1960s) and the accumulation of convincing evi-

TABLE 6.4
Trends in Annual Prevalence of 18 Types of Drugs

	Percentage who used in last 12 months														'87-'88 Change
	Class of 1975	Class of 1976	Class of 1977	Class of 1978	Class of 1979	Class of 1980	Class of 1981	Class of 1982	Class of 1983	Class of 1984	Class of 1985	Class of 1986	Class of 1987	Class of 1988	
Approx. N =	(9,400)	(15,400)	(17,100)	(17,800)	(15,500)	(15,900)	(17,500)	(17,700)	(16,300)	(15,900)	(16,000)	(15,200)	(16,300)	(16,300)	
Marijuana/Hashish	40.0	44.5	47.6	50.2	50.8	48.8	46.1	44.3	42.3	40.0	40.6	38.8	36.3	33.1	-3.2ss
Inhalants ^a	NA	3.0	3.7	4.1	5.4	4.6	4.1	4.5	4.3	5.1	5.7	6.1	6.9	6.5	-0.4
Inhalants Adjusted ^b	NA	NA	NA	NA	8.9	7.9	6.1	6.6	6.2	7.2	7.5	8.9	8.1	7.1	-1.0
Amyl & Butyl Nitrites ^{c,h}	NA	NA	NA	NA	6.5	5.7	3.7	3.6	3.6	4.0	4.0	4.7	2.6	1.7	-0.9s
Hallucinogens	11.2	9.4	8.8	9.6	9.9	9.3	9.0	8.1	7.3	6.5	6.3	6.0	6.4	5.5	-0.9s
Hallucinogens Adjusted ^d	NA	NA	NA	NA	11.8	10.4	10.1	9.0	8.3	7.3	7.6	7.6	6.7	5.8	-0.9
LSD	7.2	6.4	5.5	6.3	6.6	6.5	6.5	6.1	5.4	4.7	4.4	4.5	5.2	4.8	-0.4
PCP ^{c,h}	NA	NA	NA	NA	7.0	4.4	3.2	2.2	2.6	2.3	2.9	2.4	1.3	1.2	-0.1
Cocaine	5.6	6.0	7.2	9.0	12.0	12.3	12.4	11.5	11.4	11.6	13.1	12.7	10.3	7.9	-2.4sss
"Crack" [§]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.1	4.0	3.1	-0.9s
Other cocaine ^c	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.8	7.4	-2.4ss
Heroin	1.0	0.8	0.8	0.8	0.5	0.5	0.5	0.6	0.6	0.5	0.6	0.5	0.5	0.5	0.0
Other opiates ^c	5.7	5.7	6.4	6.0	6.2	6.3	5.9	5.3	5.1	5.2	5.9	5.2	5.3	4.6	-0.7s
Stimulants ^c	16.2	15.8	16.3	17.1	18.3	20.8	26.0	26.1	24.6	NA	NA	NA	NA	NA	NA
Stimulants Adjusted ^{e,i}	NA	NA	NA	NA	NA	NA	NA	20.3	17.9	17.7	15.8	13.4	12.2	10.9	-1.3s
Sedatives ^c	11.7	10.7	10.8	9.9	9.9	10.3	10.5	9.1	7.9	6.6	5.8	5.2	4.1	3.7	-0.4
Barbiturates ^c	10.7	9.6	9.3	8.1	7.5	6.8	6.6	5.5	5.2	4.9	4.6	4.2	3.6	3.2	-0.4
Methaqualone ^c	5.1	4.7	5.2	4.9	5.9	7.2	7.6	6.8	5.4	3.8	2.8	2.1	1.5	1.3	-0.2
Tranquilizers ^c	10.6	10.3	10.8	9.9	9.6	8.7	8.0	7.0	6.9	6.1	6.1	5.8	5.5	4.8	-0.7
Alcohol	84.8	85.7	87.0	87.7	88.1	87.9	87.0	86.8	87.3	86.0	85.6	84.5	85.7	85.3	-0.4
Cigarettes	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes: Level of significance of difference between the two most recent classes: s = .05, ss = .01, sss = .001. NA indicates data not available.

^aData based on four questionnaire forms. N is four-fifths of N indicated.

^bAdjusted for underreporting of amyl and butyl nitrites.

^cData based on a single questionnaire form. N is one-fifth of N indicated.

^dAdjusted for underreporting of PCP.

^eOnly drug use which was not under a doctor's orders is included here.

^fBased on the data from the revised question, which attempts to exclude the inappropriate reporting of nonprescription stimulants.

[§]Data based on a single questionnaire form in 1986 (N is one-fifth of N indicated), and on two questionnaire forms in 1987 (N is two-fifths of N indicated).

^hQuestion text changed slightly in 1987.

dence about its potential hazards (by the late 1970s), and even now many questions about the effects of long-term use remain unanswered.

Not all drugs took so long for evidence to accumulate about their adverse effects. Methamphetamine got a bad name on the street early in the epidemic as word got out that "speed kills." LSD use began to fall in the early 1970s as concerns about the possible dangers of chromosomal and brain damage spread. It is quite possible that this new "knowledge" was, in fact, wrong, but it had the same effect nonetheless, because it was believed. Concern about "flashback" experiences with LSD also mounted. In the mid to late 1970s a new drug, PCP (phencyclidine), entered the scene and rose rapidly in popularity as its proponents spoke glowingly of its benefits. But its capacity to lead people to violent and sometimes self-destructive behavior became known within a few years, because these are acute effects, not long-term ones, and, as a result, its popularity plummeted as fast as it had risen (see Fig. 6.4). In the mid-1980s crack cocaine began to rise in popularity fairly suddenly, as awareness of the drug spread rapidly, as did widespread access to it (Johnston et al., 1989). In this case, the evidence of its addictive potential accumulated quite quickly, because the "honeymoon period" for crack is relatively short, and word of its dangers was carried in a great surge of media coverage in 1986 (Merriam, 1989). The Monitoring the Future data suggest that crack use leveled among seniors by 1987—and started to decline in 1988. The fact that this turnaround started only a couple of years after the epidemic of crack use took hold may make it one of this society's most successful experiences in controlling the epidemic of use of an illicit drug. The knowledge base on its hazards accumulated quickly—not because of the rapid application of planned research but because the drug's very short time to addiction quickly generated convincing clinical evidence. The media then virtually flew with the story and, judging by our data on the perceived risks of crack (see Table 6.3), the message was indeed convincing to young people.

OTHER FACTORS CONTRIBUTING TO THE RECENT DECLINES

I am not suggesting that perceived risk is the major corrective force for all drugs—just that it has the potential to be a powerful corrective force for many drugs for which the knowledge base about risks has yet to accumulate. Several other factors are suggested here.

Two psychotherapeutic drugs for which we have long-term information on both use and perceived risk—amphetamines and barbiturates—have both shown significant declines, but there is very little evidence that shifts in perceived risks have been the determining factors. The annual prevalence

of barbiturate use fell by two thirds between 1978 and 1987, yet perceived risk actually fell a little during that interval, instead of rising. It did not begin to rise until 1987 (Table 6.3), which may have resulted from the health concerns about marijuana, cocaine, and crack beginning to generalize to all illicit drugs. It could also be argued that the decreasing number of users provided less collective reassurance for possible new recruits. Amphetamine use began its decline considerably later—after 1982—but the sharp drop in use between 1982 and 1986 was not accompanied by any change in perceived risk. Again, perceived risk did not begin to rise until 1987. Nor did the norms regarding the use of these two drugs shift much before 1986 (Table 6.2). As mentioned earlier, because these are established psychotherapeutic drugs, it would seem likely that their risks have been fairly accurately known for some time.

A Possible Substitution Across Drugs

It thus appears that other factors contributed to the decline in the use of these two drugs. According to the trend data on perceived availability, it does not appear that any significant change in access occurred either, and surely awareness of these drugs remained widespread. In the case of amphetamines it could be that those most interested in the effects obtained with stimulant drugs chose cocaine over amphetamines—particularly as the price of cocaine declined—although the cross-time trend curves for amphetamines and cocaine do not show reciprocal trends: both were rising in popularity in the late 1970s, and cocaine use remained relatively stable in the early to mid-1980s when amphetamine use was dropping. However, it might be argued that cocaine would have begun to decline earlier had there not been some shifting over from amphetamine to cocaine use. Although it is not entirely clear at this point whether substitution or other factors account for the considerable decline in amphetamine use in recent years, it is useful to be reminded that substitution of one drug for another can be the cause of such a decline.

Reduced Motivation to Attain the Drug's Effects

One set of factors not discussed up to this point are the reinforcing properties of the drugs themselves. These obviously differ dramatically across drugs in both quantitative and qualitative terms. Put another way, different drugs are used to attain quite different psychological states (e.g., Johnston & O'Malley, 1986), and it is quite conceivable that young peoples' desire or motivation to achieve those states will vary over time. This may well explain why barbiturates and tranquilizers have been declining steadily

in popularity since the mid-1970s, because both are central nervous system (CNS) depressants. Heroin use also fell by half, to virtually trace levels among seniors, in the latter half of the 1970s. (Methaqualone, another CNS depressant, rose slightly in popularity in the late 1970s—quite likely because it was used in conjunction with cocaine, which was also rising then—but its use also has fallen quite dramatically, since 1980.⁷) I am inclined to conclude from these several facts that the demand for illicit CNS depressants in general declined because young people became less interested in attaining their effects. In other words, there was a decline in demand which was not driven by perceived risks, or by availability. Were we to enter another historical period like the Vietnam era, which was both very painful and very anxiety provoking for young people, I would predict that CNS depressants may well rise again in popularity.⁸

Factors Influencing the Overall Epidemic

There were some additional factors that have played a role in the decline in the proportion of young people using drugs, other than the increases in perceived risk for a number of drugs (and, in particular, the lead drug, marijuana) or a decrease in interest in particular drug effects. Perhaps most important was the passing of the Vietnam War and the alienated, youthful, counter-culture to which it gave rise. The Woodstock generation has grown up and the symbolic value of drug use among youth has dissipated. Also of importance in my opinion, but hard to demonstrate empirically, was the wearing off of the "fad" quality of drug use—it simply no longer was something new and outrageous; thus some of the other social and symbolic gains from use have also dissipated. For as long as the current cohorts of adolescents can remember, American adolescents have been using drugs.

The severe recession of the early 1980s brought about a shortage of entry level jobs for the baby-boom generation, which I believe caused greater concern with job attainment and, derivatively, school performance. Drug use tends to be seen as inimical to good performance in school. Finally, a healthy lifestyle movement was evolving in the country in the early 1980s, which may have made the health consequences of drug use all the more

⁷It is true that the legal manufacture of methaqualone ceased in the early 1980s, but had there been a strong demand, it seems likely that an illicit production or importation system would quickly have evolved to provide a ready supply.

⁸One might well ask why demand for alcohol did not decline steadily across the same period since it too is a CNS depressant. The major differences, it would seem, are that alcohol use has many social benefits associated with it and an industry constantly promoting it. It is also a traditionally accepted behavior, modeled and condoned by older age groups. Even in the case of alcohol, there has been some gradual decline in use in recent years.

salient. I believe all of these forces—issues of war and peace, economic prosperity and recession, and general shifts in lifestyle—influence levels of illicit drug use, and often in ways that we never really quantify very accurately. Nevertheless, they should be recognized as potentially important factors in the beginning of the decline phase of this epidemic, and as examples of potentially important classes of variables that may influence future ones.

Finally, there may be some evidence that the bad reputation being acquired by some of the most popular drugs—in particular, marijuana and cocaine—may be generalizing to the full range of illicit drugs. It also appears that the normative constraints against illicit drug use, which eroded so badly among young people in the 1960s and 1970s, are returning (as evidenced both by a hardening of peer norms across the board and by increased support for legal restraints on the use of drugs; Johnston et al., 1989). These should help to reduce the proportion of youth willing to try or use any of the illicit drugs, regardless of their perceived dangers.

SUMMARY

I have tried to offer a theory—derived largely from the American drug epidemic since the 1960s—which accounts for both an overall epidemic and for changes in the use of specific drugs. Forces contributing to three general phases—expansion, maintenance, and decline—have been described. A set of necessary conditions for expansion was postulated: awareness, access, motivation, reassurance, and willingness to violate certain laws and predominant social mores. Four public social roles which help to bring about these conditions for various drugs were also postulated: the proponents, the reassurers, the public role models, and the antagonists.

A number of forces were put forward to explain how the forward momentum of an epidemic continues, even beyond the point where some of the historical forces that gave rise to it (e.g., the Vietnam War) have ceased to exist. These included continued awareness of alternatives, continued access through a supply system that has become established and that seeks to perpetuate itself, and continual inter-cohort role modeling for younger adolescents by slightly older ones.

Finally, it is argued that the decline phase for many drugs occurs as a result of users and potential users becoming increasingly aware of the hazards of use. This interpretation can be construed as a specific application of the Health Belief Model, which has been used to explain health-motivated behavior in a number of other domains. Three public social roles were posited as being important to bringing about such an increase in perceived risk: the knowledge providers, the educators, and the unfortunate

public role models. It is argued that as perceived risk increases, use declines, as well as tolerance for use.

It was pointed out that an increase in perceived risk cannot account for the decline in the use of all drugs, and also may not be enough to cause a decline in all subpopulations. In particular, a decline in motivation to achieve the effects obtained with CNS depressants is hypothesized as accounting for declines in the use of tranquilizers, barbiturates, methaqualone, and possibly heroin. Nevertheless, an increased concern about the dangers of use appears to have been a critical factor in the general decline of several very important drugs; in particular, marijuana, cocaine, crack cocaine specifically, LSD, and PCP.

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