

What Can Long-term Follow-up Teach us About Relapse and Prevention of Relapse in Addiction?

GEORGE E. VAILLANT, M.D.

Department of Psychiatry, Dartmouth Medical School, Hanover, NH 03756, U.S.A.

Summary

This article reviews the treatment history of 100 hospital-treated heroin addicts and 100 hospital-treated alcohol-dependent individuals. The two cohorts were prospectively followed for 20 and 12 years respectively and factors related to relapse and freedom from relapse were sought. Premorbid social stability, especially stable employment history, proved a more effective predictor of long-term outcome than the severity or chronicity of addiction. Inpatient treatment exerted little effect on long-term course. For both samples, encountering one or more of the following—community compulsory supervision, a substitute dependence, new relationships, and inspirational group membership—appeared associated with freedom from relapse. The challenge of preventing relapse in diabetes is offered as a useful analogy for preventing relapse in the addictions.

Introduction

The treatment of addiction has posed a perplexing challenge for modern society. In spite of several decades of research our efficacy in preventing relapse has remained unclear (Marlatt & Gordon, 1985). For example, at the same time that one large American study asserted that publicly funded alcoholism treatment centers led to improvement in 67% of admissions (Armor *et al.*, 1978), another noted American expert on alcoholism (Gordis, 1976) editorialized that there had been no progress in the prevention of relapse in alcoholism in the last 25 years.

There are several reasons for our uncertainty about relapse prevention. First, the control that a drug exerts over an individual's behaviour depends only modestly upon its pharmacological properties (Marlatt & Rohsenow, 1980). Second, to a remarkable degree relapse to drugs is independent of conscious freewill and motivation. Finally, most studies of substance abuse have been too brief to clarify the recovery process. On the one hand, it has been repeatedly demonstrated that a majority of treated alcoholics will be functioning better and

drinking less during a given month *after* treatment than they were during the month immediately prior to admission (Gottheil *et al.*, 1982; McLellan *et al.*, 1982). Yet in any chronic illness with a fluctuating course, hospitalization is usually sought during clinical nadirs; thus, seeming post-hospital improvement may be attributed either to treatment or to the natural history of any fluctuating disorder.

In an effort to bring order to such confusion this paper will describe 10-20 years in the lives of 100 treated heroin addicts and in the lives of 100 treated alcoholics. The paper will pay attention both to clinical course and to non-pharmacological variables affecting that course. Because this paper will confine itself to two quite parochial treatment cohorts, generalizations must be made with appropriate caution and with reference to existing literature reviews (Stall & Biernacki, 1986; Brownell *et al.*, 1986).

The sample of heroin addicts contained only male first admissions to the United States Public Health Service Hospital at Lexington, Kentucky in 1952. All were from New York City and were less than 50 years old. On average, these men were aged 25 years

on admission and had been addicted to heroin for 2 years. Seventy-five per cent had sought hospital admission voluntarily and 95% required methadone during withdrawal. The sample is described in detail elsewhere (Vaillant, 1966a).

The sample of alcoholics included 83 male and 17 female alcoholics admitted to Cambridge Hospital at Cambridge, Massachusetts in 1971 at a mean age of 45 years. The sample was significantly biased toward severity of illness. Alcohol abuse of at least 10 years' duration was noted in 87% of patients; 80% had undergone previous detoxifications; and 95% required benzodiazepines during withdrawal. Upon admission to Cambridge Hospital, only a quarter were working, only a third were living with a spouse and half lived in single rooms or 'on the street'. Sixty-eight per cent were rated poorly (0 to 1) on the Straus-Bacon (1951) scale for premorbid psychosocial stability. (Only 18% of the patients in Straus and Bacon's original New Haven alcoholism clinic had been so disabled.) However, unlike the heroin addicts, prior to their addiction the alcoholics in the present sample had not been a particularly socially disadvantaged group. The sample is described in greater detail elsewhere (Vaillant *et al.*, 1983).

During their hospital stay, all patients received individual counseling and several hours of group discussion. Alcoholics attended Alcoholics Anonymous meetings twice weekly and stayed about 10 days. On discharge, they were encouraged to attend twice weekly group meetings, and all knew that they could return to the program indefinitely at no charge. The heroin addicts were encouraged to stay in hospital for 5 months.

Within 2 years after leaving the hospital 95% of both groups of patients had relapsed. But if 95% of the alcoholics relapsed to alcohol dependence—a criterion often used to indicate treatment failure—at some point 59% of the same 100 patients achieved at least 6 months of abstinence—a criterion often used to indicate recovery. Thus, a majority of our alcoholics could have been classified as *both* treatment successes and treatment failures. To clarify such confusion the dimension of time must be attended to.

Life Histories or 'Cumulative Records' of Addiction

Schedules of reinforcement are important in determining effects of drugs on behaviour (Morse & Kelleher, 1970). Long-term follow-up helps to

clarify the regular sequence of events or schedules under which drugs of abuse are sought, and facilitates understanding the structure of an addict's life that facilitates recovery.

Behaviour over time, however, is difficult to study. It differs from moment to moment. Thus, the variations in an addict's career, like those in a symphony, are hard to conceive of in their entirety. If over long periods, however, aspects of lifetimes can be presented graphically, it becomes possible to see dynamic interrelations between behaviour and temporal variables. The physiologists' *polygraph*, the *cumulative records* devised by B. F. Skinner (1953) to chart animal behaviour over time and the *life chart* that Adolph Meyer (1919) conceived to study the lives of psychiatric patients are all methods that allow behavioural scientists to visualize the dimension of time.

Fig. 1 represents a schematic drawing of 15 years of a representative addict's life. The addict's career is represented graphically and the variables of addiction, employment and imprisonment are charted as illustrated. As can be seen, simple relapse or non-relapse to drugs is no longer the chief question. The course of an individual's addiction usually involves multiple relapses and often spans a decade or more. Thus, the problem under study becomes: if most urban addicts and alcoholics relapse after treatment—which they do—how often, in what conditions and for how long are they abstinent? In the figure three kinds of behaviour—*abstinence, addiction and work*—may be conceived as dependent variables. Data collection was made as objective as possible. For the heroin addicts work history and imprisonment data were verified by obtaining records of social security payments and police department fingerprint records. At a single point in time such data seem crude, but when plotted over time, the data summarized in Fig. 1 provide patterns that become extremely meaningful. The effects of life structure upon an addict's use of drugs become visible.

Clearly, the history of abstinence and of drug use is more difficult to measure objectively than a history of arrest or employment. To assess drug use, information about relapse during the 10–20 year period of follow-up was obtained from multiple sources. First, most of the heroin addicts were prospectively followed-up each year for the first 3–6 years after they left Lexington (Duvall *et al.*, 1963). Twelve years after discharge, I tried to interview relatives of relapsed addicts and to interview personally all addicts who appeared to be abstinent.

Criminal and hospital records were searched for 20 years. Thus, if the discharged addicts were re-admitted to institutions—prisons or hospitals—their records provided information contemporary with that period in the addict's life.

The 100 alcoholics were followed up every 18 months for 10 years. Two more years of follow-up were gathered on a majority. At each follow interval, abstinent alcoholics were interviewed personally. Information was obtained from relatives or hospital records if the subject had relapsed. At any single point in time, classification of drinking status depended on merely the report by the patient or a relative about alcohol abuse over the preceding 12 months. Over time, however, we assembled a large number of supporting observations (up to 100) for each person. The records on all subjects from five half-way houses, three detoxification units, and four other counseling programs were reviewed. In these ways information about abstinence or addiction was

gathered at *five* or more different points in time for more than 95% of the subjects in both studies.

Table 1 represents the sequential addiction status of the 100 heroin addicts. As time passed, the number of heroin dependent individuals steadily decreased. The number of addicts with a *marginal* adjustment remained more or less constant; such individuals were not clearly dependent but either continued substance abuse intermittently or were institutionalized for illness or crime related to abuse. The number of *abstinent* subjects steadily increased; but there did not seem to be a special point of life when patients remitted (Vaillant, 1973).

Table 2 depicts a similar decline in the number of actively alcohol dependent individuals over time. Over 8 years, the average alcoholic in our study was detoxified 15 times and made at least that many emergency room or clinic visits. At last contact 11-14 years after index admission, 37% of the

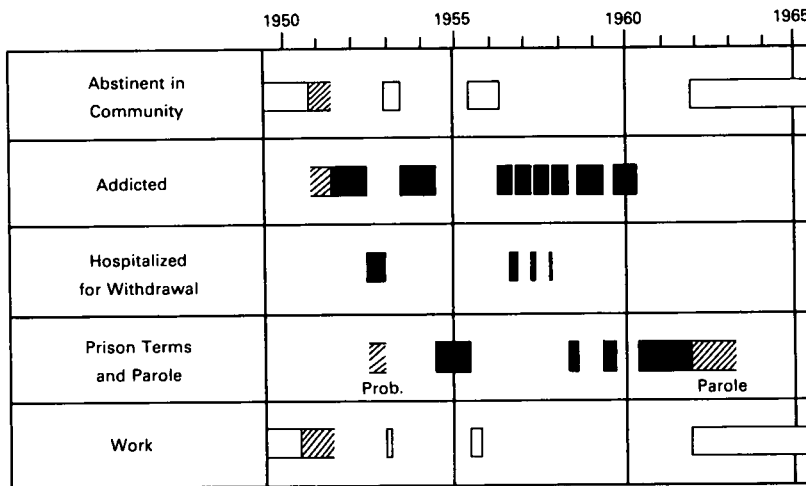


Figure 1. An idealized case history to illustrate the methods of data organization in a longitudinal study of narcotic addiction. By charting life events in this way, unanticipated correlations become apparent [originally published in H. STEINBERG (Ed.) (1969) *Scientific Basis of Drug Dependence*, p. 344 (London, J. & A. Churchill)].

Table 1. Outcome of 100 Heroin Addicts at 3 Points in Time After Index Hospital Discharge

	Time after first hospitalization		
	5 years	10 years	18 years
Stable abstinence	10%	23%	35%
Uncertain status	31%	25%	17%
Dead	6%	11%	23%
Active narcotic addiction	53%	41%	25%

Table 2. Outcome of 100 Alcohol Dependent Individuals At 3 Points in Time after Index Hospital Discharge

	Time after index hospitalization		
	4 years	8 years	c. 12 years
Stable abstinence	24%	32%	25%*
Uncertain status (or institutionalized)	3%	17%	21%
Dead	12%	27%	37%
Alcohol dependence	61%	27%	17%

*38% were abstinent at time of death or last contact.

alcoholics had died (virtually all before age 65) and 38% had been abstinent at time of death or last contact.

Tables 1 and 2 suggest the bold findings of the study: addicts recover—albeit slowly—but the tables do not tell us *why*. Why should the cycle of detoxification and relapse finally be interrupted? To understand the phenomenon of relapse we must consider three questions: Why does addiction begin? Why does relapse occur? Why does relapse not occur? Only when these questions are answered can we *predict* and *alter* the addict's fate. I will try to use my two longitudinal studies to illustrate the importance of non-pharmacological variables in affecting answers to these questions.

Why Does Addiction Begin?

Heroin addicts, like delinquents in general, have past histories of very unpatterned social behaviour. Several studies have shown that the young urban addict cannot be easily distinguished from the young urban delinquent. In the terminology of operant conditioning, addicts have had little experience with stable schedules of reinforcement; they have been badly 'shaped' and have been often exposed to conflicting stimulus control. In the language of everyday, heroin addicts have come from broken homes, where maternal supervision and affection in the pre-school years was inadequate, where the father was absent, where there was little family cohesion, and where there was often parent-child cultural disparity (Vaillant, 1966e). These rather sweeping generalizations have been documented by comparing delinquents and addicts with non-delinquent and non-addict controls matched for variables like social class, place of residence, intelligence and ethnic background (Glueck & Glueck, 1950; Chain *et al.*, 1964; Vaillant, 1966a and c).

In contrast, the childhoods of alcoholics are more

unstable than controls largely because of a greater incidence of parental alcoholism (Vaillant, 1983). Similarly, the social disorganization and the lack of patterned behaviour noted on admission among the alcoholics are often secondary to unemployment and marital instability that *result* from rather than *contribute* to their alcohol abuse. Thus, more than half of the addicts described in this paper and less than 5% of the alcoholics were known to have been delinquent *before* drug abuse. The majority of addicts had either not qualified for the draft, or they had been discharged as unfit. This was in spite of their own good health and intelligence and the fact that the United States had been engaged in the Korean war. Although the average age on admission to the Lexington hospital was 25 years, a third of the addicts had never worked for as long as a year and few had regular work histories before addiction. In short, the addict *begins* drug-seeking behaviour more because he has very little opportunity to engage in other competing forms of independent activity than because morphine or heroin *per se* is a powerful reinforcer or temptation. The alcoholic is rendered susceptible to *relapse* because alcohol dependence has destabilized patterned activities.

Why Does Relapse Occur?

First, as noted above, heroin addicts have trouble engaging in alternative careers. One study observed that by age 40 years New York addicts had spent only 20% of their adult life actively addicted, but they had spent 80% of this period unemployed (Vaillant, 1966b). In someone whose daily life is unpatterned by a job, addiction imposes a very definite and gratifying, if rather stereotyped, pattern of behaviour. Having often been adolescent misfits—both in school and in street gangs—addicts finally achieve a means of social reinforcement. Thus, drug addiction provides an ersatz occupation—but a very absorbing one. In similar fashion Hodgson and co-workers

(1978) have noted that alcohol dependence can be defined by the degree to which alcohol seeking and consumption had become the individual's most salient and preoccupying source of gratification.

Second, with chronic use, narcotics provide little or no conscious gratification, and even early in an alcoholic's drinking career alcohol becomes an ineffective tranquilizer (McNamee *et al.*, 1968). Thus, once dependence is established the reinforcing properties of drug self-administration serves in large part to avoid the discomfort of real or imagined withdrawal. Addiction is also maintained, in part, by many non-pharmacological reinforcers. Friends, syringes, pubs and *bierstuben*, rituals of injection and of drinking, acquire reinforcing properties.

Even withdrawal symptoms themselves are not simple physiological responses to the withdrawal of biologically active substance. Withdrawal symptoms, too, are under considerable control of *schedules* and past *experience*. On research wards men who have been abstinent for months can experience acute craving and signs of withdrawal (e.g. lacrimation, runny nose and goose flesh) while watching another addict receive an injection of narcotics. It is not uncommon for an addict, who has sincerely told the admitting physician that he has a large habit, to discover that his withdrawal symptoms are much less severe than he expected. His worst suspicions are realized; for months his peddler had been selling him heroin that is virtually 100% milk sugar. The withdrawal symptoms of monkeys can be effectively relieved by injections of saline if the saline is administered in settings where morphine was given in the past (Thompson & Schuster, 1964).

The converse is also true. If morphine-addicted monkeys are given nalorphine withdrawal symptoms are abruptly precipitated. When morphine-satiated monkeys were given saline instead of nalorphine, withdrawal symptoms still occurred (Goldberg & Shuster, 1966). Studies in humans suggest that the memory of mental discomfort that in the past was relieved by opiates can evoke conditioned withdrawal signs. At the Rockefeller Institute, Dole & Nyswander (1965) reported that when some addicts were maintained on high doses of methadone they got no effect from heroin; but in the presence of psychological stress they still reported symptoms of withdrawal. In short, due to conditioned withdrawal symptoms relapse to drugs remains a danger long after the addict has left the treatment center.

To sum up, I am suggesting that many of the

reinforcing consequences and antecedents of drug addiction have no direct pharmacological basis. For a given individual the temporal pattern of drug use may be maintained almost entirely by secondary reinforcers. It is not surprising, then, that addicts upon release from weeks of hospital treatment can relapse into the substance abuse within a few months—despite firm conscious resolutions to the contrary. Not only does a history of poorly patterned social behaviour, then, contribute to the initiation of addiction, but the substitute behavioural patterns that evolve due to addiction become strongly associated with relapse. What is needed is that addicts alter their whole pattern of living. But how can this be done?

Why Does Relapse Not Occur?

Certainly, Table 3 suggests that detoxification does not prevent rapid relapse. Instead, the table dramatizes the basis for some investigators' unwarranted therapeutic nihilism. Among 100 heroin addicts over 770 detoxifications via voluntary hospitalizations or short term imprisonment led to a year of abstinence in only 3% of instances. Among the 100 alcoholics in the study, over 1500 detoxifications seemed equally ineffective.

But therapeutic pessimism is not the lesson to be drawn from Table 3. Therapists must change their focus. As suggested earlier, pharmacological dependence *per se* cannot be blamed for chronicity of addiction. On the one hand, relapse—not dependence—must be seen as the addict's most dangerous enemy. On the other hand, there is cause for optimism as well. Table 3 illustrates several 'treatments' that did appear to mitigate an addict's fate. External interventions that restructure the patient's life in the community—parole, methadone maintenance and Alcoholics Anonymous—often were associated with sustained abstinence. The analogy between the treatment of addiction and that of diabetes is helpful. In diabetes, hospitalization saves lives but does not alter the course of the disease. Once survival is achieved a patient's control over his illness must take place in the community through sustained self medication, altered life habits and through a conscious awareness that relapse is always possible. Conscious awareness of relapse is maintained by daily rituals like urine testing and diet control.

Table 4 compares the 30 heroin addicts who during the first 12 years after discharge remained most chronically addicted with the 30 addicts who

Table 3. Relative Efficacy of Different Modes of Treatment

	Known 'treatment' exposures	% Followed by 1 year of abstinence
<i>For 100 Heroin addicts</i>		
Hospital detoxification	361	3%
Short imprisonment	363	3%
Prison and 1+ year parole	34	71%
Methadone maintenance	15	67%
<i>For 100 Alcoholics</i>		
Hospital detoxification	c.1500	3%
300+ visits to AA	19	74%

achieved a stable abstinence of 3 years or more. Relapse depended on largely non-pharmacological variables. Just as detoxification was not a predictor of remission, severity of prior addiction did not predict repeated relapse. (This observation has been confirmed in a much larger study of Robins (1974).) Rather, it was the premorbid capacity for sustained structured behaviour and the discovery of competing sources of gratification that distinguished the best from the worst outcomes. Prior to first hospital admission, three times as many of the eventually good outcomes had been employed 4 years to more ($p < 0.01$). Twice as many men who achieved stable abstinence had been raised in the same culture in which their parents had been raised. Three times as many of the worst outcomes never married.

Table 5 makes the same comparison between the

29 alcoholics with most stable abstinence and the 47 alcoholics with the most chronic alcoholism after discharge. The more patterned the alcoholic's pre-morbid life had been, the most likely was he or she to recover from addiction. However, the duration of alcohol abuse prior to admission to Cambridge Hospital correlated only weakly with prognosis. Pharmacology is but one variable contributing to relapse.

Table 6 presents four general factors useful to relapse prevention. The left hand column of Table 6 illustrates the determinants of abstinence of a year or more in a naturalistic study of alcohol abusers. These men were not patients. They were identified in a study of 400 school boys who were followed from age 14 to age 47 years (Vaillant, 1983). At some point in time 110 developed alcohol abuse. Of

Table 4. Admission Variables Predicting 12 Year Prognosis For 100 Heroin Addicts

	Outcome Addiction Status	
	Stable abstinence <i>n</i> =30	Sustained addiction <i>n</i> =30
<i>Important</i>		
Employed 4+ years prior to index admission	43%	12%*
Raised in parents' culture	46%	24%
Ever married	89%	68%
Employed for half of adult life	63%	0%*
<i>Unimportant</i>		
Antisocial before heroin dependence	50%	50%
Family History of criminality	30%	33%
Years addiction before index admission	2.0 years	2.5 years

*Significant $p < 0.01$ chi-square test.

Table 5. Admission Variables Predicting 8-Year Prognosis for 100 Alcohol Abusers

Admission variables	8 Year outcome drinking status		
	Stable abstinence (n=29)	Intermittent alcoholism (n=24)	Chronic alcoholism (n=47)
'Skid row' social adjustment	21%	25%	53%*
Living with spouse	45%	38%	28%
Employed	31%	50%	13%*
Never before detoxified	21%	27%	11%
Never previously in jail	41%	46%	13%*

*Significant $p < 0.05$ chi-square test.

those, 49 became abstinent for a year or more. In only 30% of cases was this year of abstinence associated with any sort of alcohol clinic attendance or hospitalization. Rather, four other factors seemed more important than treatment in relapse prevention. Two or more of these factors were present in a majority of cases. These four factors were: (1) Compulsory supervision or experiencing a consistent aversive experience related to drinking (e.g. use of disulfiram or a painful ulcer); (2) Finding a substitute dependency to compete with alcohol use (e.g. meditation, compulsive gambling, overeating, etc.); (3) Obtaining new social supports (e.g. a grateful employer or a new marriage); and (4) Inspirational group membership (e.g. discovering a sustained source of hope, inspiration and self esteem in fundamentalist religion or Alcoholics Anonymous). In their literature review of remission from abuse of tobacco, food, opiates and alcohol, Stall & Biernacki (1986) also identified these four factors among others.

The regularity with which these four factors were associated with relapse prevention in the two treatment groups was equally impressive. This is

illustrated by the two right hand columns of Table 6. Two or more of the four factors were present during the first year of abstinence in a majority of both of these groups as well. Thus, even when it occurs outside of the treatment setting relapse prevention is anything but spontaneous. Instead, it behooves clinicians to examine these four general factors in greater detail.

Compulsory Supervision

Table 3 suggested that for the heroin addicts a year of parole was vastly more effective than either short imprisonment or voluntary hospitalization. This was in spite of the fact that only the more severe offenders ever received sentences that included at least a year of parole and in spite of the fact that the past histories of paroled individuals did not contain more of the favourable prognostic factors noted in Table 4 (Vaillant, 1966d). Indeed, virtually all such parole successes had previously relapsed after other forms of treatment. Yet parole was not successful because it punished. Rather parole was useful because it altered an addict's schedule of reinforce-

Table 6. Factors Associated with Absence of Relapse for a Year or More

	Untreated abstinent alcoholics n=49	Treated abstinent heroin addicts n=30	Treated abstinent alcoholics n=29
Compulsory supervision	49%	47%	34%
Substitute dependence	53%	60%	55%
New relationships	32%	63%	31%
Inspirational group membership	49%	c.20%*	62%

*During the period of followup (1952-1970) Narcotics Anonymous and self-help groups were not yet well established. Three addicts, however, became involved in fundamentalist religion or self help groups and three became employed in agencies helping other addicts.

ment. Parole required weekly proof of employment in individuals previously convinced they could not hold a job. It altered friendship networks. Parole—like the disulfiram and the painful alcohol-induced medical complaints that provided compulsory reminders for abstinent alcoholics—provided an external superego and external source of vigilance against relapse. It was probably no accident that several addicts with no other history of regular employment successfully completed tours of duty in the highly supervised setting of the armed forces. Work provides structure to the addict's life and structure interferes with addiction. Again, in numerous structured laboratory settings (e.g. Sobell & Sobell, 1978; Merry, 1966) alcoholics who binge uncontrollably in community settings can drink alcohol in moderation. The sources of relapse do not depend upon purely pharmacological determinants, or lack of conscious motivation. Rather the price of relapse prevention, like that of liberty, becomes eternal vigilance.

Substitute Dependence

The useful, albeit limited, blinders of behavioural pharmacology allow another virtue of parole and Alcoholics Anonymous (AA) to appear. They, like methadone maintenance, provide a substitute for drugs. The importance of providing a competing dependency to prevent relapse is illustrated by the failure of disulfiram administration alone to prove more effective than placebo in facilitating *long term* abstinence (Mottin, 1973). Disulfiram inhibits alcohol use but it does not provide an alternative. However, competent parole does not demand that the addict abandon one set of behaviours without providing him with an alternative set. In order to keep his parole the addicted felon must not only avoid certain of his associates, but must maintain both stable employment and contact with a helpful authority figure. AA provides a busy schedule of social and service activities with supportive former drinkers, especially at times of high risk like holidays. A requirement of AA is that a member 'work the program', and like compulsory supervision AA encourages its members to return again and again to group meetings and to sponsors who provide an external conscience.

Methadone maintenance provides the most obvious example of a competing dependency, but methadone maintenance also provides an analogue to compulsory supervision. During the years 1964 to 1970, New York saw the introduction of methadone

maintenance programs. Thus, it was possible to compare the effects of this newer treatment on a sample exposed for 12 years to a variety of other treatments. Of the 10 addicts in Table 3 who achieved stable social adjustment and freedom from illicit drug use on methadone maintenance, all had failed to become abstinent from heroin after both imprisonment and voluntary hospitalization. Indeed, the average previous treatment experience for *each* methadone success was one long imprisonment, five short imprisonments, and nine voluntary hospitalization—all followed by relapse within a year! None of the five methadone failures had ever responded to any form of treatment.

New Relationships

The formation of a new stable relationship with a non-blood relative was often associated with abstinence in both groups of patients. In contrast, studies suggest that couples therapy is not particularly useful in facilitating abstinence in alcoholism (Orford & Edwards, 1977). During recovery it is probably valuable for alcoholics to form bonds with people they have not hurt in the past. In this regard an AA sponsor or a new spouse may be more useful than the dyadic relationship with a long-suffering family member, which must repeatedly re-awaken old guilts and old angers—conditioned reinforcers of alcohol use.

Mothers of the Lexington heroin addicts had often gained gratification by the prolonged dependence of their children. Such mothers had often tacitly participated in their child's addiction. In contrast, the new human relationships associated with a heroin addict's abstinence were often ones where another person was openly dependent on the addict or conversely trusted him to be independent. Such relationships seem analogous to 'taking the twelfth step' in Alcoholics Anonymous.

Inspirational Group Membership

In *The Varieties of Religious Experience* William James (1902) articulated the close relationship between religious conversion and recovery from intractable addiction. Undoubtedly, 'conversion' to inspirational groups often occurs through Knupfer's (1972) 'strangely trivial' significant accidents that she felt often triggered stable remission. Such group membership also provides the 'new nonstigmatized identity' cited as important by Stall & Biernacki

Table 7. *The Association of Alcoholics Anonymous Attendance Since Discharge with Outcome 8 Years Later*

	Status in 1971		Status in 1979
	0-99 meetings n=68	100+ meetings n=32	100+ meetings n=32
Stable psychosocial adjustment	22%	6%*	47%
Living with spouse	41%	22%*	32%
Employed	29%	22%	58%
Never before detoxified	25%	3%*	n.a.

(1986). The Lexington heroin addicts belonged to an historical cohort (1950-1960) that preceded the popularity of self-help groups and Narcotics Anonymous in America. Among the 100 heroin addicts only one man was known to have been admitted to a self-help house, and only two joined fundamentalist religions. Thus, the effectiveness of inspirational group membership on that sample cannot be fairly judged.

However, Table 6 illustrates that AA appeared to play an important role in the recovery of the 100 alcoholics. Among the 29 alcoholics abstinent for 3 years or more 14 had attended 300 or more Alcoholics Anonymous meetings. Of course, there is need to question the direction of causality. Adherence to a treatment regimen is sometimes the result, not the cause of abstinence. In addition, Baekeland *et al.*, (1975) and Costello (1975) have documented that when favorable *premorbid* characteristics of alcoholic patients are controlled, then the apparent superiority of a variety of treatment interventions disappears.

Table 7 illustrates that the strong association of AA utilization with remission—noted in Table 6—cannot be attributed to *premorbid* social stability. Although *premorbid* psychosocial stability in 1972 predicted subsequent clinical remission in Table 5, Table 7 shows that *lack* of *premorbid* social stability in 1972 predicted subsequent utilization of AA. Table 7 also illustrates that among the 32 men and women who frequently attended Alcoholics Anonymous, there was a significant increase of stable psychosocial adjustment from two individuals in 1972 to 15 individuals by 1980. In short, frequent Alcoholics Anonymous attendance (mean=600 meetings) may have played a casual role in both social and clinical improvement.

The fact that freedom from relapse was so enhanced by AA is at variance with our psycho-

dynamically derived knowledge of free choice in adults. Yet if we view AA in the terms of Jerome Frank's (1961) valuable book *Persuasion and Healing*, the effectiveness of AA makes good theoretical sense. The model for effective psychotherapy described by Frank closely resembles AA. For Frank, successful psychotherapy involves the sharing of suffering with a sanctioned healer who is willing to talk about the patient's problem in a symbolic way. The sanctioned healer should have status and power, be equipped with an unambiguous conceptual model of the problem, and should raise the patient's expectancy of cure. The point is that if one cannot cure an illness, one wants to make the patient less afraid and overwhelmed by it. One wants to enhance what Bandura (1977) calls self-efficacy—a person's belief that he or she can respond effectively to a situation by using available skills.

Finally, Frank suggests that, at Lourdes, pilgrims prayed for each other, not for themselves. He believes that this stress on service counteracts patients' morbid self-preoccupation, strengthens their self-esteem by demonstrating that they can do something for others and cements groups ties among patients. It was perhaps no accident that three of the stably abstinent heroin addicts and five of the stably abstinent alcoholics became formally involved in the addiction treatment field.

Conclusion

We must cease to conceptualize drug addiction as a more or less conscious use of an active drug in order to provide either emotional solace or exquisite self indulgence. If instead we conceive of drug addiction as a whole constellation of conditioned, unconscious behaviours, then the relative success of parole, methadone maintenance and Alcoholics Anonymous over conventional clinical intervention begins to

make sense. These community interventions serve to impose a structure on the addict's life. This structure interferes with drug-seeking behaviour based upon conditioned withdrawal symptoms and upon conditioned reinforcers like the ritual of 'belting up', the friendship of hard drinking friends and the experience of purposeful behaviour that precedes self medication.

A second reason why abstinence under parole and AA may be more enduring than abstinence achieved during voluntary hospitalization is that such community abstinence occurs in the presence of many conditioned reinforcers (other addicts, peddlers, community stresses, etc.). Such secondary reinforcing events lose their effectiveness in controlling the addict's behaviour most rapidly when they continue to occur, but in the absence of any reinforcement. Thus, it may be most therapeutic for addicts to be required to give up drugs in situations closely resembling those where they have self-administered drugs in the past.

Controlled studies (Edwards & Guthrie, 1966; Stinson *et al.*, 1979) and literature reviews (Edwards & Grant, 1980) suggest that prolonged 2- to 4-week inpatient treatment of alcoholism achieves results no better than those obtained by outpatient treatment advice or brief detoxification. Indeed, a comparison of three studies of alcoholic patients who received only brief advice with four studies of similar patients receiving inpatient treatment revealed no significant differences in outcome at the end of a 2-year period (Vaillant, 1980).

On the other hand, alcoholism and drug addiction produce enormous suffering, and to deny palliation to alcoholics because we are not certain how to effect long-range cure is as inhumane as denying palliation to hypertensives or to diabetics. If clinics do not always cure, they do reduce mortality and suffering, and, no matter how refractory addiction seems, addicts should not be excluded from medical insurance coverage, from treatment by emergency rooms and detoxification centers, or from shelters for the homeless. Besides, at least 12 controlled cost-benefit studies (Jones & Vischi, 1979; Reiff *et al.*, 1981) conclude that the expense of providing outpatient alcoholism programs in health maintenance organizations and in industry is more than repaid by declines in medical care utilization, in sick days, and in sickness and accident benefit costs.

In any case, the goal of treatment should not be detoxification but prevention of relapse. Thus, the lesson of this paper is not therapeutic nihilism. The lesson is that the treatment of drug and alcohol

addiction, like the treatment of diabetes and hypertension, requires that clinicians take a long range view. Eventually, stable remissions may occur among the most unlikely prospects. If treatment as we currently understand it does not seem more effective than natural healing processes, then we need to understand natural healing processes better than we do at present. As the science of immunology teaches us, natural healing is never spontaneous.

Acknowledgements

The preparation of this manuscript was supported by Grants AA-01362, KO5-MH00364 and MH42248 from the National Institute of Mental Health, U.S. Public Health Service.

An early version of this paper was delivered as the Dent Memorial Lecture at the Centenary of the Society for the Study of Addiction, London, England, October 25, 1984.

References

- ARMOR, D. J., POLICH, J. M. & STANBUL, H. B. (1978) *Alcoholism and Treatment* (New York, John Wiley).
- BAEKELAND, F., LUNDWALL, L. & KISSIN, B. (1975) Methods for the treatment of chronic alcoholism: a critical appraisal, in: R. J. GIBBINS, Y. ISRAEL, H. KALANT, R. E. POPHAM, W. SCHMIDT & R. G. SMART (Eds) *Research Advances in Alcohol and Drug Problems*, Vol. 2, Chapter 7 (New York, John Wiley).
- BANDURA, A. (1977) Self-efficacy: toward a unifying theory of behaviour change, *Psychological Review*, 84, pp. 191-215.
- BROWNELL, K. D., MARLATT, G. A., LICHTENSTEIN, E. & WILSON, G. T. (1986) Understanding and preventing relapse, *American Psychologist*, 41, pp. 765-782.
- CHEIN, I., GERARD, D. L., LEE, R. S. & RESENFELD, E. (1964) *The Road to H* (New York, Basic Books).
- COSTELLO, R. M. (1975) Alcoholism treatment and evaluation. II. Collation of two year follow-up studies, *International Journal of Addiction*, 10, pp. 857-867.
- DOLE, V. P. & NYSWANDER, M. (1965) A medical treatment for diacetylmorphine (heroin) addiction, *Journal of the American Medical Association*, 193, pp. 646-650.
- DUVALL, H. J., LOCKE, B. Z. & BRILL, L. (1963) Follow-up study of narcotic drug addicts five years after hospitalization, *Public Health Reports*, 78, pp. 185-193.
- EDWARDS, G. & GRANT, M. (Eds) (1980) *Alcoholism Treatment in Transition* (London, Croom Helm).
- EDWARDS, G. & GUTHRIE, S. (1966) A comparison of inpatient and out-patient treatment of alcohol dependence, *Lancet*, I, pp. 467-468.
- FRANK, J. D. (1961) *Persuasion and Healing: a comparative study of psychotherapy* (Baltimore, Johns Hopkins Press).
- GLUECK, S. & GLUECK, E. (1950) *Unraveling Juvenile Delinquency* (New York, Commonwealth Fund).

- GOLDBERG, S. & SCHUSTER, C. R. (1966) Classic conditioning of the morphine withdrawal syndrome, *Federation Proceedings*, 25, p. 261.
- GORDIS, E. (1976) Editorial: what is alcoholism research? *Annals of Internal Medicine*, 85, pp. 821-823.
- GOTTHEIL, E., THORNTON, C. C., SKOLODA, T. E. & ALTERMAN, A. (1982) Follow-up of abstinent and non-abstinent Alcoholics, *American Journal of Psychiatry*, 139, pp. 560-565.
- HODGSON, R. T., STOCKWELL, T., RANKIN, H. & EDWARDS, G. (1978) Alcohol dependence: the concept, its utility and measurement, *British Journal of Addictions*, 73, pp. 339-342.
- JAMES, W. (1902) *The Varieties of Religious Experience* (London, Longmans Green).
- JONES, K. R. & VISCHI, T. R. (1979) Impact of alcohol, drug abuse and mental health on treatment of medical care utilization, *Medical Care* (Suppl. 17), pp. 1-81.
- KNUPFER, G. (1972) Ex-problem drinkers, in: M. ROFF, L. TOBINS & M. POLLACK (Eds) *Life History Research and Psychopathology*, Vol. 2 (Minneapolis, The University of Minnesota Press).
- MARLATT, G. A. & GORDON, J. R. (Eds) (1985) *Relapse Prevention: Maintenance strategies in addiction behavior changes* (New York, Guilford Press).
- MARLATT, G. A. & ROHSENOW, D. J. (1980) Cognitive processes in alcohol use: expectancy and the balanced placebo design, in: N. K. MARLOW (Ed.) *Advances in Substance Abuse: Behavioral and Biological Research* (Greenwich, JAI Press).
- MCLELLAN, A. T., LUBORSKY, L., O'BRIAN, C. P., WOODY, G. E. & DRULEY, K. A. (1982) Is treatment for substance abuse effective? *Journal of the American Medical Association*, 247, pp. 1423-1428.
- MCNAMEE, H. B., MENDELSON, J. H. & MELLO, N. K. (1968) Experimental analysis of drinking patterns of alcoholics, concurrent psychiatric observations, *American Journal of Psychiatry*, 124, pp. 1063-1069.
- MERRY, J. (1966) The loss of control myth, *Lancet*, 1, pp. 1257-1258.
- MEYER, A. (1919) The Life Chart, in: A. LIEF (Ed.) (1948) *The Commonsense Psychiatry of Dr. Adolf Meyer* (New York, McGraw-Hill).
- MORSE, W. H. & KELLEHER, R. T. (1970) Schedules as fundamental determinants of behaviour, in: W. N. SCHOENFELD (Ed.) *The Theory of Reinforcement Schedules* (New York, Appleton Century Crofts).
- MOTTIN, J. L. (1973) Drug induced attenuation of alcohol consumption, *Quarterly Journal of Studies on Alcohol*, 34, pp. 444-472.
- ORFORD, J. & EDWARDS, G. (1977) *Alcoholism* (Oxford University Press).
- REIFF, S., GRIFFITH, B., FORSYTHE, A. B. & SHERMAN, R. M. (1981) Utilization of medical services by alcoholics participating in a health maintenance organization outpatient treatment program: three year follow-up, *Alcoholism: Clinical and Experimental Research*, 5, pp. 559-562.
- ROBINS, L. N. (1974) The Vietnam druguser returns, *Special Action Office Monograph Series A*, No. 2. (Washington, D.C., Government Printing Office).
- SKINNER, B. F. (1953) *Science and Human Behaviour* (New York, Macmillan).
- SOBELL, M. B. & SOBELL, L. (1978) *The Behavioral Treatment of Alcohol Problems* (New York, Plenum Press).
- STALL, R. & BIERNACKI, P. (1986) Spontaneous remission from the problematic use of substances: an inductive model derived from a comparative analysis of the alcohol, opiate, tobacco and food/obesity literatures, *International Journal of the Addictions*, 21, pp. 1-23.
- STINSON, D. J., SMITH, W. G., AMIDJAYA, I. & KAPLAN, J. M. (1979) Systems of care and treatment outcomes for alcoholic patients, *Archives of General Psychiatry*, 36, pp. 535-539.
- STRAUS, R. & BACON, S. D. (1951) Alcoholism and social stability. A study of occupational integration in 2023 male clinic patients, *Quarterly Journal for the Study of Alcoholism*, 12, pp. 231-260.
- THOMPSON, T. & SCHUSTER, C. R. (1964) Morphine self-administration, food reinforced, and avoidance behaviors in rhesus monkeys, *Psychopharmacologia*, 5, pp. 87-94.
- VAILLANT, G. E. (1966a) A 12 year follow-up of New York narcotic addicts: I. The relation of treatment of outcome, *American Journal of Psychiatry*, 122, pp. 727-737.
- VAILLANT, G. E. (1966b) A 12 year follow-up of New York narcotic addicts: II. The natural history of a chronic disease, *New England Journal of Medicine*, 275, pp. 1282-1288.
- VAILLANT, G. E. (1966c) A 12 year follow-up of New York narcotic addicts: III. Some social and psychiatric characteristics, *Archives of General Psychiatry*, 15, pp. 599-609.
- VAILLANT, G. E. (1966d) A 12 year follow-up of New York narcotic addicts: IV. Some characteristics and determinants of abstinence, *American Journal of Psychiatry*, 123, pp. 573-584.
- VAILLANT, G. E. (1966e) Parent-child cultural disparity and drug addiction, *Journal of Nervous and Mental Disease*, 142, pp. 534-539.
- VAILLANT, G. E. (1968) The natural history of urban narcotic drug addiction—some determinants, in: H. STEINBERG (Ed.) *Scientific Basis of Drug Dependence* (London, J. & A. Churchill).
- VAILLANT, G. E. (1973) A 20 year follow-up of New York narcotic addicts, *Archives of General Psychiatry*, 29, pp. 237-241.
- VAILLANT, G. E. (1980) The doctor's dilemma, in: G. EDWARDS & M. GRANT (Eds) *Alcoholism Treatment in Transition*, Chapter 1 (London, Croom Helm).
- VAILLANT, G. E. (1983) *Natural History of Alcoholism* (Cambridge, Ma, Harvard University Press).
- VAILLANT, G. E., CLARK, W., CYRUS, C., MILOFSKY, E. S., KOPP, J., WULSIN, V. & MOGIELNICKI, N. P. (1983) The natural history of alcoholism: an eight year follow-up, *American Journal of Medicine*, 75, pp. 455-466.

This document is a scanned copy of a printed document. No warranty is given about the accuracy of the copy. Users should refer to the original published version of the material.