TOWARDS THE UNDERSTANDING AND EFFECTIVE TREATMENT OF ALCOHOLISM

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Professional workers in the field who proclaim alcoholism an 'illness' or a 'disease' have largely abandoned their pejorative overtones. Even clergymen these days seldom resort to lectures on morality or regard alcoholism in the light of 'weak will power', or 'bad character'. This undoubtedly represents progress, and from the alcoholic's point of view it is infinitely preferable to be afflicted with a mysterious disease than to endure the pull-yourself-together doctrine with its concomitant threats, promises and emotional appeals. One of the reasons why a 'disease factor' has been postulated is because of the empirical fact that some people become addicted to alcohol, whereas others merely remain 'heavy drinkers', even though they drink to relieve their tensions.

The difference between the heavy drinker and the person whose drinking habits are compulsive and uncontrolled is then presumed to rest on a 'physiological defect', or some unspecific biological inability to metabolize alcohol in the normal way.* This so-called disease factor has variously been attributed to an 'allergy', a 'liver deficiency', 'endocrine imbalance', 'metabolic disorders', 'cerebral lesions', etc. Relationships have even been found between alcoholic intoxication and a physiological need for more oxygen.[1] Yet, no one has conclusively demonstrated that the physiopathological factors associated with alcoholism are not in fact entirely the result of prolonged over-indulgence. The main point, however, is that even if the root cause of the alcoholic's craving for, and sensitivity to, alcohol is to be found in his physiological interior, the evidence still supports the necessity for *training* the alcoholic to modify his drinking habits and responses.

Personality

The search for 'pre-alcoholic' personality types has also met with little success. There is in fact no acceptable evidence in favour of a personality type (or even of a variety of well-defined personality types) in which a relatively constant combination of psychological traits is known to render an individual especially susceptible to the intemperate use of alcohol. Most of the work in this area, however, suffers from the fact that the personality criteria employed have been based on unvalidated concepts

*Instead of postulating an underlying disease, Franks[2] has suggested that the alcoholic's characteristic inability to control his drinking may be attributable to factors like excessive drive and ease of conditionability.

and subjective impressions.[2] Actually, few personality theories now in vogue satisfy the usual criteria for acceptable scientific research.[3] Thus, even when a relatively clear personality picture has been obtained[4] it is impossible to know whether a true pre-morbid pattern has emerged, or whether the chronic aftermath of alcohol addiction has merely been reflected.

The use of more objective tests (e.g. indices of conditionability in the laboratory[5]), together with factorially pure measures of personality,[6] might conceivably yield useful clinical and theoretical information in this regard.[7] Nevertheless, attempts to seek for homogeneity among alcoholics as a whole are not likely to prove very fruitful. Hidden alcoholics are presumably different from alcoholics whose families seek out professional help. Patients who are prepared to undergo unpleasant forms of aversion therapy are probably different from those alcoholics who refuse this form of treatment. Beer-drinking alcoholics probably differ from those who prefer harsh spirits, and so forth. It is not surprising, therefore, that research during the past decade has not altered the fact that there is at present no general agreement on the aetiology, dynamics and treatment of alcoholism,[8] and hence no known method of therapy with alcoholics appears to be outstandingly successful.[9]

Definition

The vast majority of people who imbibe alcohol are not alcoholics. What is an alcoholic and how can one best explain the reasons for this condition? It should be emphasized that the term 'alcoholism' is purely descriptive. The diagnosis 'alcoholism' carries no causative or explanatory meaning. Yet the following type of circular reasoning is only too frequent:

Question: Why does John drink so much?
Answer: Because he is an alcoholic.
Question: How do you know he is an alcoholic?
Answer: Because he drinks so much.

Thus, descriptively, a person who is apparently unable to control his compulsive drinking is labelled an alcoholic. Attempts to account for the genesis of this affliction in pure biological terms, as we have mentioned, have not proved very illuminating. Similarly, the notably feeble impact of professional uncovering psychotherapy upon alcoholics[10] emphasizes the futility of endeavouring to treat or account for alcoholism according to Freudian theories, such as oral and narcissistic drives. Besides, as one enlightened analyst[11] has emphasized, the psychoanalytic paradigm seems to be drying up as a source of new ideas for therapy. On the other hand, the application of the principles of modern *learning theory*[12-17] not only provides more plausible explanations and apparent therapeutic successes[9,18,19] but its superior methodology permits the use of more rigorous controls and scientific predictions.[20] 'Behaviour therapy' (i.e. psychotherapeutic methods that are directly based on experimentally established principles of learning), might well provide a much brighter future for the victims of alcohol addiction if properly applied.

Learning Theory

An upsurge of interest in applying the principles of the learning theory to the rational understanding and modification of psychiatric problems[18,21-23] is evidenced by the fact that 'the number of published studies using conditioning therapy during the past decade is greater than those listed for a combination of all previous years'.[24] Nevertheless the application of what might be termed 'broad-spectrum-behaviour-therapy' remains completely unexplored in many fields. In the treatment of alcoholism for instance, 'conditioned reflex therapy' has become synonymous with 'aversion therapy'. Presently we shall explore the theoretical and therapeutic consequences of combining aversion therapy with several other conditioning techniques as part of an all-embracing re-educative programme in the treatment of chronic alcoholism.

A learning theory interpretation of 'problem drinking' or 'alcoholism' must take cognizance of the effects of ethyl alcohol on the human brain and upon conditionability. Animal research indicates that alcohol is a general depressant acting both peripherally and centrally.[25] Masserman's[26,27] work on cats, however, showed that in small doses, alcohol may act as a mild stimulant of both cortex and hypothalamus. At the human level, the first effect of alcohol on the brain is usually the anaesthesia of the higher centres. These centres inhibit and control behaviour, thus their narcotization results in a pharmacological depression of the drinker's tensions, self-criticisms, inhibitions, anxieties and general inadequacies. Franks[2] has shown that a small amount of a higher alcohol depresses conditioning in man, and that alcohol probably reduces those conditioned responses we term 'socialization'. Above all, alcohol reduces or abolishes conditioned fear or anxiety responses. Thus, in 1956,[28] I proposed the following sequence of events leading to alcoholism as a learned response:

Stress

The individual in stress situations makes a number of different responses, one of which might be the consumption of alcohol, which affords him temporary relief. Repetition of this behaviour pattern eventually leads to a conditioned response between *stress* and *consumption of alcohol*. The consequent increase in drinking behaviour may cause financial difficulties, domestic problems, etc. This may soon occasion feelings of guilt and perhaps a deterioration in health, which in turn add to the already mounting stress. This 'self perpetuated stress' precipitates further drinking (in terms of the already-established conditioned response) which affords the individual the usual short-lived relief. When this wears off the individual is again faced with his difficulties and problems, and in this manner, a circular pattern of causation is pre-eminently the psychological mechanism maintaining the phenomena of alcoholism. (There are, of course, many variations of the pattern, but the vicious circle is apparent in all cases. It may be indicated at this stage that it is usually necessary to break the vicious circle at several strategic points, not only at one, if a 'cure' is to be effected.)

Excessive drinking may in fact be reinforced by a variety of stimulus-response connections. Apart from the avoidance or reduction of aversive stimuli owing to the biochemical effects of ingesting ethyl alcohol, many social reinforcers may be available—a sense of acceptance and recognition among drinking companions; an antidote to boredom and loneliness; attention, care and pity from

family members; decreased social ineptitude; increased sexual acuity; the fact that drunkenness often acts as an exoneration for anti-social behaviour; an otherwise punitive and rejecting wife displaying concern over complaints of physical illness arising from a hang-over; and so forth. It cannot be too strongly emphasized that the alcoholic is controlled by, and in turn controls the individuals with whom he comes into contact.[29]

'Compulsive Drinking'

If we regard alcoholism as 'compulsive drinking', we must view the problem in the light of a learning theory interpretation of compulsive behaviour in general. There are 2 processes involved in the formation of compulsive habits (i) the conditioned autonomic drive (CAD), usually anxiety, from which (ii) the motor reactions develop.[30] Fundamental therapy presupposes the extinction of both the CAD and the motor habits. Eysenck[21] has warned against the partial cures that might result should only the motor reaction be extinguished and the historically earlier CAD, mediating these, be ignored. It may be argued, however, that in some cases, although the original cause may once have been elements of stress, conflict and anxiety, these factors are in some instances no longer of any relevance or direct concern. Wolpe[31] for instance, has drawn attention to the existence of seemingly autonomous obsessive-compulsive habits which may persist even when there is no longer any apparent basis for them in terms of anxiety. In such cases, treatment of the motor responses alone may well be permanently effective. Thus, Lemere and Voegtlin[32] found that of over 4,000 alcoholics treated by aversion therapy 23% remained abstinent for 10 years or longer after their first treatment. May one infer, therefore, that approximately 1 patient in 5 requires only 'symptomatic' treatment? Do these 23% represent what Bacon[33] would classify as 'secondary type compulsive drinkers'? i.e. alcoholics who were reasonably well-adjusted before they became abnormal drinkers. The majority of alcoholics, however, would appear to require treatment of the CAD as well as their drinking behaviour if relapses are to be avoided.

Abstinence

Most practitioners familiar with the conventional approach to psychiatric problems will have no difficulty in recognizing the necessity for treating 'underlying conditions' (although the CAD is a very different conception from the traditional notions of 'underlying causes', both from the point of view of its origins, as well as from the point of view of the appropriate method of extinction[20]). Why is it also necessary to devote specific therapeutic attention to the drinking habit *per se*? This is perhaps best explained in terms of Eysenck's[34] conception of alcoholism as a socially disapproved type of response in which the conditioned stimulus evokes *parasympathetic* reactions. The implication is that even if the alcoholic is enabled to accept his difficulties and develops profound insight into his problem, alcohol will always represent a personal anodyne, unless it has been adequately paired with aversive stimuli (which would produce *sympathetic* reactions). Certainly those practitioners who believe that total abstinence is the only 'cure' for alcoholism should take active steps to ensure that the ex-alcoholic will always associate drink with immediately unpleasant effects, instead of resisting the temptation of its narcotic, analgesic, and anaesthetic drug effects, or the even more pleasant tranquillizing, sedative, or hypnotic properties of alcohol. One might, however, question the conventional opinion that if the alcoholic is to maintain sobriety, he must be a complete and total abstainer for all time. 'No occasional beer for lunch, no sherry in the trifle, no brandy on the Christmas pudding, no compromise'.[35] Experimental evidence clearly establishing the need for teetotalism has not been furnished. The findings of Davies[36] in fact tend to indicate that total abstinence may not be a necessity.

THERAPY

It is well known that alcoholism may be a symptom of organic brain disease, or a manifestation of an underlying psychosis. The present discussion refers to the treatment of alcoholics in whom features like psychosis, psychopathy, mental retardation and brain damage have been reliably excluded.

Aversion

The method of treating alcoholics solely by creating an aversion to alcoholic beverages dates back many centuries. In 77 AD Pliny the Elder advocated the use of several nauseant substances such as 'two and one-half sea grapes allowed to rot in wine', or a combination of alcohol and 'eggs of a night owl'. Modern therapists employ intramuscular and oral administration of emetine hydrochloride in much the same way. Apart from using nauseant drugs as the unconditioned stimuli, intravenous injections of succinylcholine (scoline) have recently been reported.[37] The patient's preferred alcoholic beverage is then paired with apnoea for a period of 60 seconds. Kantorovich[38] successfully produced a conditioned aversion to the smell and taste of alcohol as well as to a photograph of the bottles by means of electric shocks. On the whole, however, the conditioning therapies have not as yet yielded an impressive record of therapeutic success in the treatment of alcoholism. This is probably owing to the fact that most workers have failed to combine aversion therapy with other conditioning procedures. In addition, it should be pointed out that unless the laws of learning are rigidly adhered to, failure is almost inevitable.

In learning situations the *immediate* consequences of behaviour will determine future behaviour. In aversion therapy, not only is split-second timing essential, but the correct juxtaposition of conditioned and unconditioned stimuli must be closely scrutinized. The aversive stimulus must be presented about half a second *after* the conditioned stimulus, e.g. drinking. Yet many workers who have endeavoured to treat alcoholics by means of aversion conditioning have ignored, overlooked, or been ignorant of these crucial factors of conditioning. Some have administered the conditioned stimulus (alcohol) only after the patient has already reached the height of his nausea. The adverse effects on conditionability of presenting the unconditioned stimulus before the conditioned stimulus (known as backward conditioning) are beyond dispute. Alternatively, if the alcohol is given too soon before the aversive stimulus, it may be absorbed into the system

and thereby reduce the patient's conditionability and modify the effects of the noxious agent. Thus, it should also be emphasized that although the conditioned stimulus must always precede the unconditioned stimulus, the aversive stimulus (e.g. faradic shock or nausea) should nevertheless precede the positive reinforcement resulting from the ingestion of alcohol, because the desired learning is most unlikely to occur if the rewarding consequences come first.[39] Furthermore, those clinicians who use apomorphine as the chemical nauseant may be reducing the effectiveness of the procedure by virtue of the fact that apomorphine may have hypnotic or narcotizing effects and is therefore likely to impede the formation and retention of conditioned responses.[9]

Breaking the Vicious Circle

The implications of breaking the vicious circle at several strategic points, not at one alone, must now be considered. This is perhaps best illustrated by reference to a case history.

Case 1. Mr. K.A., aged 42 years, a chemical engineer by training, had been the managing director of a large industrial concern from the ages of 31 - 38 years. He was then forced to resign since his addiction to alcohol seriously interfered with his work. In an endeavour to support his wife and 2 children, he drifted unsuccessfully from job to job. He twice sought treatment in an institution, but each time the beneficial effects were extremely shortlived. His wife then obtained a judicial separation and the patient went to live alone in a boarding house. He was then consuming more alcohol than ever before.

He had grown accustomed to 'drinking with the boys' from the age of 17 years, but within 10 years he was almost entirely a solitary drinker. 'But man I could hold my booze .. I'm telling you I could drink a bottle of brandy and still walk in a straight line... People don't mind how much a guy drinks just so long as it doesn't show.'

A significant feature of the patient's life history was his father's premature demise through a coronary thrombosis when the patient was 15 years old. His mother remarried soon afterwards and the patient (an only child) was sent to boarding school. He played a passive homosexual role with 2 older boys in his dormitory. After that year he had no further homosexual contacts. He met and married his wife when he was 24 years old and attained a satisfactory heterosexual adjustment.

At work he was inclined to be over-conscientious and found that 'a good many stiff drinks were needed before I could keep the office out of the home and stop worrying about work'.

He was referred for behaviour therapy by his cousin, a physician. The biographical data outlined above was gathered during the initial interview. The patient was rather emaciated and had pronounced tremors in both hands. He also complained of frontal headaches, gastric spasms and was prone to 'blackouts' after spells of heavy drinking. He was admitted to a nursing home for 2 weeks, medically investigated and treated for anaemia. Stelazine (2 mg. *t.d.s.*) was also prescribed for a month. The therapist visited the patient at the nursing home and obtained further details of his life history. Mr. K.A. was then given a nontechnical explanation of the behaviour therapeutic rationale with special emphasis on the need to eliminate the CAD as well as the drinking habit. He agreed to cooperate with the therapeutic proposals.

On his discharge from the nursing home, a programme of aversion therapy was initiated. The sight, taste and smell of alcohol were paired with strong faradic shocks to his left palm and forearm. He was also provided with a portable faradic unit and instructed to switch on the current whenever the need for a drink arose. In order to offset the effects of discrimination learning, aversion therapy sessions were conducted at the patient's boarding house as well as in the consulting room. Within 2 weeks he had become extremely sensitive to and anxious about the faradic shocks. The following technique of conditioning 'anxiety-relief'[15,40] was then employed: A glass of brandy was placed before the patient. He was instructed to lift the glass and to try and drink its contents. As soon as his fingers touched the glass, a mildly unpleasant current was passed into his hand. As the glass approached his lips, the current was increased. If it went past his lips, the current was made distinctly noxious. The shock would cease about half a second after replacing the glass on the table and withdrawing his hand. After one session he seldom raised the glass more than 6 - 8 inches off the table and would then immediately replace it, showing obvious signs of relief at the fact that he had thus avoided the noxious stimulus.

Progressive-relaxation procedures were also administered together with additional diagnostic interviews in which attempts were made to elucidate the basic dimensions of his anxieties (or the CAD). It was clear that Mr. K.A. reacted with anxiety to numerous innocuous stimuli. These were finally divided into 3 separate but related categories: (i) hypersensitivity to statements of personal devaluation; (ii) difficulties at work; and (iii) dwelling on past and present regrets. The specific items making up each of these themes were ranked in order of the amount of anxiety evoked.

Devaluation series. He reacted to being called thin; unkempt; stupid; selfish; callous; weak; sick; a drunk; an animal; gutless and spineless; and a failure. These remarks were generally less upsetting when directed at him by an acquaintance, but when said by his mother or his wife, he was inclined to feel 'desperately unhappy'.

Work series. Situations connected with his work, which made the patient unhappy, included: being reprimanded for arriving late; forgetting to telephone a client; misquoting a price; not knowing the answer to a client's questions; failing to obtain promotion; the boss expressing dissatisfaction with his work; being shown up by a fellow employee; and being dismissed.

Past and present regrets. Circumstances which he regretted included: having disappointed his late father by failing one year at school; the vast amount of money he spent on drink; having cursed his mother; recalling his homosexual encounters; remembering his adolescent drinking sprees which set him on the road to chronic alcoholism; the occasions when he was unkind to his wife and children; the day he lost the position of managing director; and the fact that his family left him.

Systematic desensitization psychotherapy[41] was administered by instructing Mr. K.A. to imagine or reflect upon these items while in a state of deep hypnotic relaxation. During some of the more exacting items he was inclined to weep and ask for a drink. His reactions of anxiety, guilt and remorse were counterposed by deep relaxation again and again. Finally, after 20 sessions (held three times a week) the patient reported as follows:

'None of these things bother me any more. I sort of feel "who cares!" or "so what!" or "that's just too bad!" or "that's forgiven and forgotten!" . . . I'm just human and that means no one can expect me to be perfect.'

It was also apparent that Mr. K.A. had high levels of unexpressed resentment. His previous training had taught him always to 'bottle up his feelings'. The therapist encouraged the outward expression of his resentments, but stressed that these should be 'acted out' in a reasonable and assertive (as opposed to an aggressive) manner. The patient was assisted in this regard by means of 'behaviour rehearsal'[42]—a special form of role playing in which the patient's outward expression of resentment was systematically rehearsed by enacting imagined inter-personal encounters.

At this stage, approximately 9 weeks had elapsed since his initial interview with myself. Apart from the small quantities of alcohol he had imbibed during the aversion therapy sessions, he had been totally abstinent. He had gained nearly 20 lb. in weight and there was no sign of his former tremors. He stated: 'I've never felt so fit in my life.' A wealthy relative then offered him a free holiday at the coast for a month. The therapist had strong misgivings about the wisdom of this venture, but Mr. K.A. was adamant that he would be 'all right'. Before leaving for his holiday

the patient had indicated that he very much desired to effect a reconciliation with his wife and children. He had approached his wife on 2 occasions and had been rebuffed each time.

The therapist telephoned the patient's wife and arranged for an interview. She stated that although she felt a good deal of compassion for her husband, she had nevertheless become sensitized to the entire aura of drunkenness, 'especially to the way he looks and the things he says while drunk'. She agreed to undergo a course of desensitization therapy designed to render her relatively impervious to her husband's past misdemeanors. After 9 sessions she stated that she could contemplate living with him, but that she was still 'terribly afraid that he'll go back to the drink again'.

Mr. K.A. returned from his holiday and stated in a matter-of-fact tone of voice that he had imbibed no alcohol whatsoever. He went on to say that he had met the personnel officer of a chemical plant who had offered him a senior post with excellent prospects. 'Much against my own better judgment I took your advice and told him that I am an ex-alcoholic . . . but he didn't change his mind.'

He was delighted to learn that his wife had undergone therapy during his absence, 'It might be different from now on,' he said, 'I've never really felt before that she was on my side'.

He was instructed to return for booster treatments of aversion conditioning every month. After 4 weeks he telephoned to inform the therapist that he felt 'happy at home, happy at work and happy within myself'. He therefore insisted that he required no further treatment. Approximately 2 months later he telephoned again to report that he had 'done a terrible thing'. He explained how, impelled by sheer curiosity, he had entered a bar and had a tot of brandy and then another. 'I didn't feel any compulsive need to devour the whole bottle and get picked up in a gutter . . . After 2 drinks I quit.' The therapist advised the patient to make another appointment. He then explained that although the consensus of opinion was that teetotalism was essential, conclusive evidence on this point was sorely lacking. An experiment in controlled drinking was therefore inaugurated on the understanding that its failure would necessitate retraining along lines of complete and total abstinence. The patient was hypnotized and exposed to repeated suggestions that should he ever engage in solitary drinking, or have more than 2 tots of any harsh liquor, or more than 2 glasses of wine or beer, he would immediately develop violent abdominal cramps with nausea and vomiting for periods of up to 10 minutes.

A systematic follow-up investigation showed that the patient remained a successful social drinker for over 14 months. I then went overseas and lost contact with Mr. K.A. who has since emigrated to Australia with his family.

DISCUSSION

This case history exemplifies the use of 'broad-spectrum-behaviour-therapy' in the treatment of an alcoholic. The main features embraced by the treatment programme were as follows:

1. Specific steps were taken to ensure that the patient regained his physical well-being.
2. Active measures to break the compulsion were then introduced (aversion therapy and 'anxiety-relief' conditioning).
3. Diagnostic tests and interviews were conducted with a view to evaluating the interaction of the patient and his social environment. Special attention was devoted to ferreting out specific stimulus antecedents of anxiety.
4. The anxiety-response habits were then eliminated by several counter-conditioning procedures—desensitization therapy, assertive training, behaviour rehearsal, as well as hypnosis.
5. Cooperation from the patient's spouse was elicited and she too was afforded the benefits of behaviour therapy.

Other cases may require operant conditioning techniques* in order to facilitate the acquisition of new adaptive responses.[23] Socio-economic intervention is also sometimes called for. The therapist, if necessary, should be prepared to persuade, cajole and exhort employers to lend their full cooperation. Assistance may also have to be lent in securing the correct employment, as well as in smoothing out numerous inter-personal incompatibilities such as faulty associates, domestic crises, etc. Leisure and recreational pursuits from sports and hobbies to membership in the local church or in Alcoholics Anonymous may be fostered in certain cases. Finally, other adjunctive measures such as drugs or chemotherapy (e.g. non-addictive tranquillizers and/or antidepressants, as well as Antabuse, Dispan, Temposil and similar products) may play an important role in certain cases. In short, the emphasis in the rehabilitation of the alcoholic must be on a *synthesis* which would include aversion therapy combined with psychotherapeutic and socio-economic procedures, together with educative measures and environmental manipulation plus numerous adjunctive procedures as part of a wide and all-embracing reconditioning programme.

SUMMARY

After questioning some commonly accepted notions about alcoholics and alcoholism, this paper approaches the problem from the standpoint of modern learning theory. The virtues of 'broad-spectrum-behaviour-therapy' are illustrated by means of a fairly detailed case presentation. The need for a wide and all-embracing reconditioning programme in the treatment of alcoholism is emphasized.

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*Mertens and Fuller's *Manual for the Alcoholic*[43] provides a self-contained operant learning approach for the control of alcoholism.

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