
The papers presented in this book are the result of a series of researches and conferences sponsored by the American Cancer Society, with an emphasis on the role of learning in smoking behaviour. As Dr. Hunt puts it ‘the Committee desired to try a small mix of “learning people” and “smoking people”, in the belief that innovative and cooperative approaches to the problem of smoking would be facilitated in the future’.

The first part of the volume reviews the current literature on smoking behavior, the 2nd part offers the findings and comments of psychologists, physicians and psychiatrists about the relationships between learning mechanisms and smoking, the 3rd part introduces the views of sociologists on smoking and the influence of chronic alcoholism on smoking attitudes. The point is made that 1 of every 2 adults learns (or has learned) to smoke. The emphasis is on learning. And the assumption is that an attitude which has been learned can, also, be unlearned. But when this theoretical assumption is given the test of hard facts, optimism does not prevail. In ‘The Modification of Smoking Behavior’, Bernstein reminds us that efforts at teaching the American public to unlearn to smoke have been largely unsuccessful. Neither anti-smoking campaigns of all kinds, nor legislative action, nor techniques involving the smoker directly, like personal decision-making approaches, or the new learning theory approach, have evoked significant responses from the smoking segment of our population. The therapies used in smoking clinics, whether they utilise drugs, group therapy, or hypnotherapy, do not result in permanent discontinuation of smoking. The main complaint is that, in a significant number of cases, smoking is resumed after therapy is interrupted. Moreover, techniques which have the advantage of presenting alternatives to smoking, ranging from breathing exercises and cold showers or food chewing to using profane language, have unfortunately not been assessed as to their results. If one considers that the smoker must, if he wishes to stop smoking, modify his environment (smoking being, to a large degree, his environment), such techniques may not appear too kindergartenish. Deep-breathing exercises, in particular, are known to produce pleasure in the chest possibly similar to that of smoke inhalation. Conditioning techniques have also been employed, including ‘punishing’ electro-shocks inflicted to volunteer smokers. Here one cannot but wonder if the remedy is not worse than the malady, and one is not surprised that 50% of the volunteers dropped out of such an experiment before its completion. Reference is made to the now well-known system of Wolpe in the field of psychotherapy, which, to this reviewer’s knowledge, has not been employed in smoking therapy. It is the theory of ‘reciprocal inhibition’, which, simply expressed, is the possibility to overcome a habit (presupposed undesirable) by the creation of a new and antagonistic habit; of course the stimulus situation must be the same for the technique to be effective.

In the chapter on ‘Personality and Smoking’, Smith reviews the variety of tendencies to which smoking has been linked: extraversion, antisocial attitudes, impulsiveness, orality and others. The value of this type of classification is clear: if we know the whys of smoking, it should, theoretically, help us in our approaches to the hows of non-smoking. A very clear-cut, and to this
reviewer, accurate, classification of smokers according to types, has been made by Tomkins and Horn, which, briefly, is: (a) Habitual smoking: in this case smoking has become automatic, (b) Positive affect smoking: here smoking is actually pleasurable, (c) Negative affect smoking: smoking relieves stress only, (d) Addictive smoking: without a cigarette the smoker is really suffering. Breaking the habit should assume a pattern dependant upon the type of smoking habit. For instance, the ‘positive affect’ smoker, who is somewhat a hedonist, who uses smoking as a pleasure, might learn to substitute another pleasure for that of smoking. One such pleasure is the deep-breathing exercises mentioned higher, with holding of the breath—a yoga exercise which not only gives a pleasurable sensation in the chest but is also very relaxing.

The 2nd part of the book deals with ‘Learning Mechanisms and Smoking’. Hunt and Matarazzo feel that it is necessary to redefine habit with regard to smoking. They view smoking as ‘overlearning’ as compared to other learned behavior, and they feel that the behavioral sciences have dealt more with the acquisition of habits than with the maintenance of behavior, obviously an important point for the smoker, for it is the maintenance of his habit which is to be broken. Since overlearning shows itself in the reappearance of habits forgotten (under stress for instance), since smokers oftentimes resume smoking after therapy has been discontinued for a certain length of time, it would seem necessary to booster the decision of the smoker, to reinforce at a later date the abstinence learned in therapy. The authors introduce awareness as a useful concept in training smokers to abandon their habit. In overlearned behavior, awareness has, to a large degree, disappeared. The return to awareness in all areas of behavior would possibly reinforce a decision not to smoke.

In the ‘Mechanisms of Self-Control’, Premack (and other authors in this volume) makes a distinction between the intrinsic consequences of smoking (for example the inhalation of smoke) and the extrinsic consequences of smoking (as social anxiety). The smoking problem should be attacked on both fronts: cigarettes without nicotine could hopefully reduce the intrinsic consequences (but how does one get a smoker to shift to non-nicotine cigarettes?), and a technique such as the ‘desensitization’ technique of Wolpe could produce a reduction of anxiety and eliminate the urge to smoke as an anxiety-reductor.

In ‘The Smoking Habit’, Logan asserts that learned behavior can be modified by forming stronger habits. He, too, is well aware that old habits come back ‘from the blue’ and are well-entrenched in their victims. In his view the psychological need to smoke feed on the physiological dependance brought about by the habit, and, therefore, the 2 dependencies could be abolished by interrupting the physiological addiction.

In ‘The Role of Nicotine in the Smoking Habit’, Jarvik describes the physiological effects of nicotine, which are numerous and diverse: nicotine first stimulates, then depresses the smoker. In smoking, nicotine increases blood pressure and pulse rate, mobilizes blood sugar, brings about peripheral vasoconstriction, increase in fatty acids, impairment of reflexes. There is an arousing effect on the electroencephalogram of the smoker. In high doses nicotine can produce convulsions in non-smokers. Its action on the central nervous system is powerful, resembling that of amphetamines. Is smoking, then, an addiction to nicotine? In part, it must be, since nicotine-free cigarettes are not liked by any type of smoker. Nicotine does produce some reward mechanisms in the brain, by stimulating the medial forebrain bundle and thereby releasing norepinephrine into solution reaching the hypothalamus and the amygdalae.
The last part of the volume is taken by the sociologist point of view. Borgatta makes the very interesting point that, considered as a learned behavior, smoking consists of a drive, an incentive, and a situation. If therapies can eliminate the incentive and the situation, the drive still remains. And what is to become of this drive in a vacuum, so to speak?

Book Reviews

407

To the reviewers, this question is perhaps the most important of questions in all research and efforts at smoking therapies. It seems that all endeavour at altering the smoker’s behavior will fail until he reaches an awareness of his own motives and drives, until he decides for himself if it is more important for him to live with the risks of smoking, or to be free from them. In the practical field such deep-reaching decisions can be helped by devices such as the ‘Smoker’s Self-Testing Kit’, developed by Daniel Horn, and, since Wolpe’s methods of ‘reciprocal inhibition’ are said to result in approximately 90% of ‘apparently cured’ and ‘much improved’ patients, one would wish they would be applied to smokers.

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As the Foreword (by George Mathe) points out, evidence is accumulating to show that immunorepression increases the chances of carcinogenesis. This monograph is a careful collection of the evidence, based on an impressive and commendable international scientific cooperation. After a brief review of the experimental evidence obtained in laboratory animals (tumor incidence after administering alkylating agents, X-rays or applying thymectomy, as compared to controls), the author surveys the incidence of malignancy in men in states of immunologic deficiency. The results are given both in detailed descriptions of the individual cases and summarized in 3 tables (table I: the fate of six patients who received liver replacement for hepatoma; table II: epithelial tumors in 37 renal homograft recipients; table III: mesenchymal tumors in the same recipients). The data all indicate that tissue homotransplantation (and the necessary concommitant immuno-repression) increase the risk of cancer in patients receiving the homografts. Although there are a number of instances in which patients had tumors before or at the time of transplantation and the situation did not deteriorate after transplantation and immuno-repression, there are reports of spreading liver metastases after removal of renal tumors and kidney transplantation. In other cases there was evidence that tumors have been transmitted with the transplanted organ. The most numerous (and most significant) cases are the ones in which there was no previous history of tumors but such have developed after organ transplantation. Among 3,000 renal transplant recipients 37 had such occurrences (tables II and III), 21 epithelial and 16 mesenchymal tumors of various kinds.

The author concludes that, although the incidence of tumors due to organ transplantation and immuno-repression is ‘low enough that it should not be a deterrent to performing organ transplant operations’, further statistical data are desirable. He proposes to establish an informal tumor registry of such cases in his offices at the University of Colorado Medical Center in Denver. The monograph has a good collection of references (186 entries) and a useful subject and author index.

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408

Book Reviews
The Biochemistry of Steroid Hormone Action organized and edited by R.M.S. Smellie is a compilation of the contributions made to a Biochemical Society symposium held at University College London in May, 1970. The information presented by 12 notable contributors indicates the considerable progress which has been made in understanding the biochemical changes brought about by steroid hormones.

Seven major areas of research in this field are presented in a comprehensive manner. These are:

1. a study of the influence of steroid hormones on genetic expression (G. C. Muller);
2. interaction of steroid hormones and histones (M. Sluyser);
3. the relation of steroid hormones to ribonucleic acid synthesis and transport and the regulation of cytoplasmic translation (T. H. Hamilton);
4. steroid hormones and enzyme induction (N. Land);
5. the effect of steroids on the transport of electrolytes through membranes (R. Fraser);
6. androgen stimulation of prostatic cation-dependent ATPase (W.E. Farnsworth); and

As this list shows, the book deals with some fundamental dynamic aspects of biochemistry and thus it is not of direct interest to the clinical oncologist. But just because many of these modern aspects of biochemistry are often invoked in the theoretical speculations about oncogenesis and the nature of malignancy, the book can be highly recommended as background reading to all interested in the study of neoplasia.

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