PSYCHOLOGY IN THE PUBLIC HEALTH ARENA:
SMOKING CONTROL AS AN EXAMPLE


Thesis submitted in fulfilment of the requirements
for the Master of Arts (Applied Psychology)

Department of Psychology
UNIVERSITY OF ADELAIDE
December, 1988
ABSTRACT

This thesis focuses on the emerging field of public health psychology, particularly upon the issues involved in planning, implementing and evaluating health promotion programmes in a public health setting (Kling, 1984; Roberts, 1987). It seeks to highlight the complexities in applying psychological theory to the development of health promotion programmes and the difficulty of evaluating such programmes in an often politically and bureaucratically turbulent environment.

The objectives of my course of study were:

1) to acquire skills in applying psychological theory to health behaviour change and the development of health promotion programmes;
2) to develop skills in the design, implementation and evaluation of health promotion interventions;
3) to demonstrate an ability to think critically about applied psychology and health promotion, and;
4) to develop skills in working in a multidisciplinary setting.

These objectives were to be met by undertaking work in a placement capacity at one or more appropriate organisations and to be demonstrated by producing a thesis containing two reports or reviews (Chapters 4 and 5) and one research study (Chapter 6).

For the first six months, I was enrolled as a full-time student and attended a placement for 1.5 days each week at Health Promotion...
Services, South Australian Health Commission. After this time, I gained part-time, and later, full-time employment with this organisation. Over my almost six-year association with this agency, as Research Officer, and later Senior Research Officer, I have contributed to the planning, development and evaluation of health promotion programmes for smoking cessation, breast self-examination, drink-driving, immunization, high blood pressure control, cervical cancer and mammography.

As a result of my involvement in these programmes, I produced a substantial number of reports for the South Australian Health Commission, as well as a number of publications. These reports and publications are included in this thesis as evidence of having met the objectives of my course of study.

The work presented in this thesis has therefore been undertaken over a six year period. The two small reports (Chapters 4 and 5) were originally written in 1982, early in the course of my placement, while data for the larger study (Chapter 6) were collected in late 1984. Because of the time lag between the original writing of these reports and their inclusion in the final thesis, a commentary on new developments in the subject area and their implications for the original conclusions has been included toward the end of Chapter 5, and in the discussion of Chapter 6. The reports that I have additionally elected to include date from 1984, and the publications date from 1986. It should be noted that the authorship of reports prior to 1985 uses my married name (Bullock), but subsequent reports have my present name as author.
Chapter 1 introduces the area of health promotion and the field of public health psychology.

Chapter 2 gives a description of the venue that served as my placement and an overview of the programmes I contributed to, as well as selected reports and publications.

Chapter 3 gives an introduction and background to the subject of smoking cessation, a field that consumed much of my time on placement and on which the following three chapters are based.

Chapter 4 gives an account of an attempt to introduce psychological theory to the planning of a health promotion intervention. Specifically, it examines the role of self-attribution in smoking cessation and its potential application in guiding the style and content of television commercials to encourage and support smoking cessation.

Chapter 5 presents the theoretical background to the development of a programme for general practitioners to assist their patients to quit smoking. This chapter discusses the reasons why the programme was not implemented and reviews more recent intervention results which would lead to the development of quite a different programme than originally recommended.

Chapter 6 details an investigation of relapse crises experienced by ex-smokers using a telephone 'Stay Quit Line'. This piece of research was undertaken to examine the situations in which an
ex-smoker is led closer to relapse, and the affective factors making relapse more likely.

Finally, Chapter 7 provides an overview of the issues at the interface of public health and psychology. It also attempts to identify some of the training needs for psychologists intending to work in this area, and discusses some of the promising directions that are emerging.
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STATEMENT

This thesis contains no material which has been accepted for the award of any other degree or diploma in any university and, to the best of my knowledge and belief, the thesis contains no material previously published or written by another person, except when due reference is made in the text of this thesis.

If accepted for the award of the degree, I consent to the thesis being made available for photocopying and loan.

Melanie Wakefield
December, 1988
ACKNOWLEDGEMENTS

I wish to express my appreciation to my supervisors, Dr. Mike Innes, Department of Psychology, University of Adelaide, and Dr. Neville Owen, Department of Community Medicine, University of Adelaide, for their sound advice, encouragement and patience. Their constructive criticism and comments on the several drafts of this thesis were of immense value.

I would also like to thank the South Australian Health Commission for enabling me to undertake placement activities toward the fulfilment of my course requirements, particularly: James Cowley, former Director of the Health Promotion Branch, who agreed to the placement; David Wilson, formerly Research Manager, Health Promotion Branch, for his support and encouragement during the times I thought this thesis would never be finished; Deborah Massey, who typed early drafts of the thesis; Richard Rohrsheim, for data processing, and; Adrian Esterman for occasional statistical advice.
CHAPTER 1: PUBLIC HEALTH AND PSYCHOLOGY

- AN INTRODUCTION
1.1. Introduction

The last ten to fifteen years has seen a gradual embracing of the fields of psychology and public health. In the United States, psychologists are beginning to fill positions in schools of public health (Matthews & Avis, 1982) and more and more psychologists are gaining employment in State and Federal Public Health departments (Stapp, Fulcher, Nelson, Pallack & Wicherski, 1981). Within psychology itself, the subspeciality of health psychology this year has its tenth birthday, following its proclamation as a formal division of the American Psychological Association in 1978 (Matarazzo, 1980), and its journal, Health Psychology, is now enjoying its seventh year of publication. In addition, there has been a spate of articles appearing in the literature seeking to clarify and extend the overlap between psychology and public health (Michael, 1982; Roberts, 1982; Singer & Krantz, 1982; Coates & Demuth, 1984).

This chapter first traces the gradual development of public health from its early concern with controlling infectious and communicable disease to its incorporation of measures designed to change personal lifestyle behaviours deleterious to health. The interest in, and contribution of psychologists to this direction, will be discussed and finally, the field of health promotion is introduced as an area where the knowledge and skills of psychologists can offer important contributions.
1.2. Historical development of public health

Public health, as an organised system of health protection for the population, came into being in England during the nineteenth century (Chave, 1984). However, much of the knowledge on which the first measures to protect the public's health were to be based, had been acquired long before. Rosen (1958) traces the roots of public health back to the writings of Hippocrates, but notes that it was during the Middle Ages that the importance of sanitation in controlling the spread of disease was recognised. It was also during this period that segregation and quarantine of those with leprosy were made compulsory. This move was instituted more as a social response to the terror that leprosy instilled in the population, but in fact served to almost eradicate leprosy in Europe and represents an early, albeit unplanned, victory for public health (Hanlon & Pickett, 1984).

During the Renaissance, great advances were made in the technological basis of medical practice. Leeuwenhoek's work in microscopy and Morgagni's contributions to autopsy laid the groundwork for germ theory, which eventually replaced the long-held conception that illness was a manifestation of God's punishment for evil-doing (Kaplan, 1975).

John Snow's work, first reported in 1855, is often cited as the first empirical example of the public health approach (Runyan, DeVellis, DeVellis & Hochbaum, 1982). In mapping the distribution of cholera cases in London, Snow observed that the disease was
strongly associated with the use of a specific water source - the Broad Street pump. In removing the pump handle, he prevented further water being taken from this source and so prevented further spread of the disease.

This example illustrates many of the characteristics of the public health approach still evident today. In particular, Snow's action aimed to prevent disease, rather than treat it, and there was a focus on the population as the unit of interest, rather than the individual. Furthermore, the investigation of the problem and the choice of solution were derived through empirical means, rather than by recourse to a theoretical model of causal mechanisms. Finally, the initiative did not require the voluntary participation of the individuals at risk, but was carried out by regulatory action.

There have been many attempts to define public health, but over time, it is evident that these definitions reflect a gradual extension of the horizons of public health. Early definitions were linked to sanitary measures, but with the bacteriologic and immunologic advances of the late nineteenth and early twentieth centuries, they were extended to incorporate the concept of prevention of disease in the individual (Hanlon & Pickett, 1984). In the last several decades, public health has also had a concern with the social and behavioural aspects of personal health.

This comparatively recent expansion of the realm of public health has largely been accounted for by the dramatic changes in the profile of disease since the beginning of this century. In 1900,
infectious diseases such as tuberculosis and pneumonia were the most common causes of death and illness (Radford, 1979). Today, cardiovascular diseases, cancer and accidents account for nearly three-quarters of all deaths (Australian Bureau of Statistics, 1986).

The evidence is strong that public health measures of improved sanitation and purified food and water, together with advances in microbiology, pharmacology and therapeutics, have played a crucial role in the decline of infectious and gastrointestinal diseases (Matarazzo, 1984). The major causes of death in present times are from diseases where personal habits and lifestyle behaviours are important etiologic factors.

1.3. The role of lifestyle behaviours in health and disease

Matarazzo (1984) notes that passages in the Old Testament indicate that mankind has long sensed the relationship between good health and such personal behaviours as regularity of meals and sleep, moderation in food and alcohol consumption, and physical activity and exercise. Efforts to quantify these relationships more precisely occurred as a corollary of the partnerships formed between behavioural scientists and biomedical health specialists following the large post-World War II investments of research and training funds that were deliberately targeted at furthering these alliances (Matarazzo, 1980).

During the 1950's, psychologists began to study the determinants of individual participation in programmes for disease screening
(Hochbaum, 1958), immunization (Rosenstock, Derryberry & Carriser, 1959) and dental care (Kegeles, 1961). Then, in 1972, Belloc and Breslow published the results of their 1965 survey of American adults, which suggested that seven specific health practices were strongly related to health status. The health practices entailed (1) sleeping seven to eight hours daily, (2) eating breakfast almost every day, (3) never or rarely eating between meals, (4) currently being at or near prescribed height-adjusted weight, (5) never smoking cigarettes, (6) moderate or no use of alcohol and (7) regular physical activity. A subsequent paper by Belloc (1973) confirmed and extended these findings, in demonstrating that, for both males and females, the risk of death over a five year period was lower for those practising more of the seven health behaviours.

Since this time, a plethora of research studies have sought to clarify the relationship between particular behavioural practices and specific disease outcomes. As early as 1952, tobacco smoking was strongly implicated as a cause of lung cancer (Doll & Hill, 1952). The classic Framingham study, which followed the mortality experience of a cohort of males in Massachusetts provided firm evidence that certain dietary habits were related to cardiovascular disease (Kannel, Castelli, Gordon & McNamara, 1971). Table 1 shows the major causes of death in Australia and what are generally accepted to be their behavioural risk factors.
<table>
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<th>CAUSE</th>
<th>PERCENTAGE OF ALL DEATHS</th>
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<td>Heart disease</td>
<td>33.9</td>
<td>smoking, hypertension, elevated serum cholesterol, diet, lack of exercise, diabetes, stress, family history</td>
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<td>Malignant neoplasms</td>
<td>24.3</td>
<td>smoking, worksite carcinogens, environmental carcinogens, alcohol, diet</td>
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<tr>
<td>Stroke</td>
<td>10.9</td>
<td>hypertension, smoking, elevated serum cholesterol, stress</td>
</tr>
<tr>
<td>Motor vehicle accidents</td>
<td>2.6</td>
<td>alcohol, no seat belts, speed, roadway design, vehicle engineering</td>
</tr>
<tr>
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<td>smoking, vaccination status</td>
</tr>
<tr>
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<td>1.0</td>
<td>alcohol abuse</td>
</tr>
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**TABLE 1:** Major causes of death and associated risk factors, Australia, 1986. (Adapted from Matarazzo (1984), using data from the Australian Bureau of Statistics (1986)).

This dawning recognition of the role of behavioural factors in disease outcome naturally captured the interest of psychologists.

The search for techniques to change behaviours deleterious to health...
has produced a major new focus alongside the mainstream biomedical approaches that characterise medical health care. This focus is made up of a number of sub-disciplines.

One of these, health psychology, is the field within psychology which seeks to understand the psychological influences on how people stay healthy, why they become ill and how they respond when they do get ill (Taylor, 1986). Two terms frequently heard in conjunction with health psychology are 'behavioural medicine' and 'behavioural health'. Behavioural medicine originated as an outgrowth of the theoretical tradition of behaviourism, but is now defined as a broad, interdisciplinary field concerned with health, illness and related dysfunction, incorporating both overt and covert behaviours as objects of study (Matarazzo, 1980). It draws on the field of psychology, as well as a range of other disciplines such as anthropology, epidemiology, physiology, pharmacology and endocrinology. Behavioural health is an interdisciplinary sub-specialty within behavioural medicine which stresses individual responsibility in the maintenance of health and the prevention of illness and dysfunction (Matarazzo, 1980). Behavioural medicine and behavioural health are distinguished from health psychology by the fact that they are interdisciplinary in nature, while health psychology is one of the specific disciplines that contributes to the fields of behavioural medicine and behavioural health (Taylor, 1986).
1.4. Health promotion: a challenging field for the psychologist

Unlike these disciplines, which have an emphasis on theoretical development, the field of health promotion is more empirical in its approach. Health promotion is a multidisciplinary field which has popularly been defined as "any combination of health education and related organisational, economic and environmental supports for behaviour conducive to health" (Green, 1984). The origins of an organised health promotion movement date back to the 1974 publication of the Lalonde report in Canada which laid out a national plan for lifestyle intervention under the auspices of public health (Lalonde, 1974). Since that time, health promotion has become increasingly popular.

Health promotion interventions range across a number of levels - from one to one interventions, through to small group approaches, mass media programmes, environmental changes, and policy, regulatory and legislative reforms. While these activities hold the promise of influencing behaviour and they do so with mixed success, it is undoubtedly the fact that, in general, health promotion has been long on rhetoric and short on results. As Jackson (1985) writes, both State health bureaucracies and politicians "have been seduced by the 'good news' public relations value of health promotion campaigns, providing welcome diversions from the continuing 'bad news' of reduced health expenditure" (p.1.). Furthermore, health promotion activities are often embraced to counter the charge that health budgets are dominated by curative services. Thus, the potential of health promotion programmes to address other system
needs beyond the promotion of health has led to an uncritical initiation of such programmes and an unrealistic expectation of their success.

The reliance on mass media alone to change behaviours deleterious to health, for example, will achieve political and bureaucratic objectives in demonstrating very visibly that something is being done. Further, since the cost of using electronic mass media is by no means inexpensive (Warner, 1987), it is often interpreted by naive observers that the use of such a strategy to change behaviour is evidence that a government is serious about health promotion. Although the mass media, in general, is useful in achieving health behaviour change (Flay, 1987), the point is that we do not yet know enough about the use of the mass media to reliably predict success whenever it is used, yet politicians and bureaucrats have come to expect it.

The lack of information as to why particular strategic options do or do not achieve success is by no means confined to the use of mass media, but pervades the entire field of health promotion. The theoretical poverty evident in the planning of many health promotion programmes has played a major role in contributing to and sustaining this situation. In addition, the practice of accurately documenting what was done to achieve a successful outcome is not widespread (Wakefield & Wilson, 1986). All of these factors make the planning of successful health promotion programmes a difficult exercise.
Having said this, there is a slow realisation that for a developing field like health promotion to prove its worth and compete for scarce health resources, past failures must be learned from, and programmes need to be planned more soundly and evaluated more rigorously (Kling, 1984). In this context, psychologists have a unique mix of skills and experience which has allowed them to usefully contribute to the development of health promotion programmes. There has been widespread use of behavioural techniques in one to one and small group interventions assisting people to stop smoking (Lichtenstein & Mermelstein, 1984), lose weight (Wilson & Brownell, 1980), become physically fit (Epstein & Wing, 1980), drink sensibly (Miller, Pechacek & Hamburg, 1981) and reduce stress levels (Benson, 1975). Mass media programmes are very visible examples of health promotion in action and some of these have benefited from a consideration of psychological principles in behaviour change (e.g. Stanford Heart Disease Prevention Programme (Solomon & Maccoby, 1984)).

As a trainee psychologist interested in the health promotion field, I was pleased to be given the opportunity to undertake a placement in the South Australian Health Commission's (then) Health Promotion Unit as part of the the requirements for my course of study. The following chapter describes the placement in detail and some of the work undertaken there.
2.1. Introduction

This chapter first outlines the nature of the organisation that constituted my placement for the period of my enrolment, and my role within it. Next, a selected number of my reports and publications are presented as an example of the work undertaken whilst on placement.

2.2. Description of placement

The venue which served as a placement for the duration of my enrolment was 'Health Promotion Services', a branch of the South Australian Health Commission. Its stated functions at the time I first became associated with the Unit (early 1982) were:

(a) to support and coordinate health promotion in South Australia;
(b) to provide advice on policies and legislation, as it influences individual's health;
(c) to provide advice on the provision of grants for health promotion programs, and;
(d) to run a health promotion centre ('Healthy State Centre'), providing easy access to information on how to be healthy, and acting as a focus for mass media based public awareness programs about health.

At this time, the Unit had a staff of approximately twenty, with backgrounds in nursing, education, psychology, social work, marketing and health surveying.
I began the placement in early 1982, attending 1.5 days per week, but after six months, I accepted a half-time position as a Research Officer within the Unit. My duties at this time were to conduct literature reviews and make recommendations for the development of health promotion programs, to design and implement program evaluations and, to conduct surveys.

Throughout the following year, the demands of the job increased and I accepted a full-time Research Officer position. From 1982 to 1984, the Unit increased in size to approximately thirty staff members, and undertook major health promotion programs for smoking cessation, breast self-examination, immunisation and drink driving, as well as many smaller initiatives.

At the end of 1984, the Unit was subject to a Ministerial review and, during 1985, became a branch of the Public Health Service of the South Australian Health Commission. The focus of its activity changed from a reliance on mass media, to programs designed to augment already existing health services. The project areas which the Unit given the highest priority in the Unit at this time were smoking control, high blood pressure education, immunisation, breast self-examination and the promotion of condom use.

During 1987, the Unit was again subjected to a review as part of a restructuring of the entire South Australian Health Commission. The project planning and implementation functions were retained in the restructured Public and Environmental Health Division, whilst policy, training and media functions were transferred to other parts...
of the Commission. As a member of the research team, I was placed in the Epidemiology Branch as Senior Project Officer. Essentially, my duties remain the same, as do the priority project areas.

Over my six year association with the Health Commission, I have been involved in the planning, development and evaluation of many of the health promotion programmes in these health areas. To give the reader some insight into my activities over this period, and to document the results of work done in meeting the objectives of my course of study, I have included a selected number of reports prepared for the South Australian Health Commission, as well as a number of publications. A discussion of each of these reports and papers will outline the background to the project, the extent of my involvement, the methodology employed and the outcome of the project.

A full list of the reports and publications produced over the period of my enrolment is contained in Appendix 1. The publications referred to in this chapter are bound into the thesis in subsequent Appendices.

2.3. EXAMPLE NO. 1: Improving the public's perception of road accident risk

Publications bound in Appendix 2:


In mid 1983, Health Promotion Services was instructed by the new Labor Minister for Health to plan and implement a campaign to discourage drink driving amongst South Australian youth. The campaign was to involve television and radio commercials over a four week period, commencing before Christmas 1983 and finishing a week after New Year. Although I played some role in the identification of the target group for the campaign by assisting in the production of a working paper and literature review of traffic accidents and alcohol among 16 to 24 year olds (Wilson & Bullock, 1984), much of the campaign development was undertaken by other staff in the Unit.

The theme of the campaign was "Friends don't let friends drink and drive". The television commercial featured a young male who had been injured in a drink driving accident and was now confined to a wheelchair. Three radio commercials were also developed, and a range of community activities was organised to coincide with and complement the media messages.

The planning team decided to use one of the radio commercials to inform the target group that they were heavily over-represented in drink driving accident statistics. The Research Manager and I were given the task of developing the content of this commercial.

My background in psychology led me to expect that there was much in the literature on risk perception that would be useful in guiding the development of this commercial (Slovic, Fischoff & Lichtenstein, 1980; Lee, 1981). The Research Manager's background in epidemiology, and more specifically, his knowledge of life table
analysis, led him to consider this technique as a possible way of presenting statistical information. As the calculation of the life table was more complicated than expected, we also sought the assistance of a demographer (G.J Hugo).

In a paper published in a National public health journal (Wilson, Hugo & Wakefield, 1986), we argued that......

"...In spite of the fact that the road toll receives considerable exposure in the media, lay people underestimate the risk of themselves being involved in an accident and many see themselves as personally immune from tragic events such as road accidents.

In a series of studies of a range of population subgroups, Slovic and his colleagues showed that most people incorrectly rated the risk of death from a road accident and grossly underestimated the annual death rate from road accidents (Slovic, Fischoff & Lichtenstein, 1980). Sabey and Taylor point out that 'travel by road is understood by most of us to involve some risk although this level of risk is only dimly perceived because it has been with people almost all of their lives (Sabey & Taylor, 1980)....

Underestimation of actual risk is compounded by the fact that most people consider themselves to be above average in driving skillfulness and safety (Svenson, 1981). Many policies and programs aimed at avoidance of accidents are based upon an assumption that there is an accurate assessment of risk among the general public. If this assumption is incorrect, people are likely to ignore such policies and programs because they will not see them as being applicable to themselves. Furthermore, there is evidence with other health hazards that changing an individual's perception of risk can have an effect on behaviour (Aral, Cates & Jenkins, 1985; Horowitz, Hulley & Alvarez, 1980; Riggs & Noland, 1983).

Slovic and colleagues point out that when people make assessments of risk, they rarely have statistical data available to them (Slovic, Fischoff & Lichtenstein, 1981). Invariably, they rely on what they remember hearing or seeing about the hazard in question. A number of subjective inferential devices, known as heuristics, come into play and may help to distort or bias the individual's risk perception...
Currently, road accident data are compiled in terms of relative frequencies, relative risks, rates and even absolute numbers. In this form, they can be used for administrative and planning purposes by professionals to compare relative performance, identify problem areas, or assess the benefits of countermeasures (Sabey & Taylor, 1980). Statistics are usually still in this form when they are communicated to the general public. It is rarely considered that this may be misleading and help to develop faulty risk perceptions, or that it lacks meaning and impact for the individual road user....

If, as Sabey and Taylor (1980) suggest, there is a need to personalise risk, then it may be more appropriate to communicate accident data in terms which are generally used by lay people, namely probability theory. In lay terms, probability theory is normally expressed as chance, such as the chance of winning a race, a lottery or a premiership, the chance of someone who is seriously ill getting better, or the chance of getting a job."

By using a modified life table approach, we calculated that...

"... one in five South Australian males aged 16 in 1981 will die or be injured in a motor vehicle accident before he reaches age 25, if current patterns of public attitudes, road behaviour, legislative restraints and environmental factors are maintained over the next decade. We believe that this is a dramatic figure which young people and their parents may be able to relate to and personalise....

Slovic argues that 'we need creative new indices and analogies to help individuals translate risk estimates varying over many orders of magnitude into simple, intuitively meaningful terms' (Slovic, 1985). In the case of road accidents, the figure of one in five means that two to three members of each cricket team, four in each football team and one or two in each tennis team are likely to experience death or injury during their late teens or early twenties. These analogies are potentially meaningful communication strategies which could form the basis of a campaign to improve perception of road accident risk among 16 to 24 year old males.'

Unfortunately, we had limited opportunity to assess the effectiveness of this approach, due to other project commitments. The production of such a startling statistic generated considerable media interest with newspaper coverage in The Advertiser and The News, as well as an
interview on the National television programme Good Morning Australia, and the planning team were satisfied with this outcome.

In assessing the target group's recall of the television and radio commercials, a convenience cluster sample was taken of 890, 16 to 24 year old males. The sample was made up of apprentices (n = 464), unemployed males (n = 166), Year 11 and 12 students (n = 162), production workers (n = 42) and office workers (n = 56). A full discussion of the methodology is contained in the report by Wilson & Bullock (1984).

When queried about the chance of a 16 year old being injured or killed in a road accident before the age of 25, 49.9 per cent of the males correctly nominated the '1 in 5' statistic from four response options. As expected, the radio commercials had a lower rate of recall than the television commercial, but the '1 in 5' message had the highest recall rate of any of the radio commercials. Given this extremely 'soft' evaluation, one would have to conclude that the efficacy of this information in raising awareness and changing drink driving behaviour remains untested for this target group.

Nevertheless, presentation of statistical data in this form is in keeping with the recognition by risk perception theorists that risk communications need to be simple and able to be personalised.

2.4. EXAMPLE NO. 2: Selecting priorities for health promotion

One of the major problems encountered by centralised health promotion
agencies, such as Health Promotion Services, is that they receive a consistently large number of requests for assistance from community agencies, in the form of money or manpower resources. Almost certainly, one of the main reasons for this is the (accurate) perception that centralised agencies are better funded and staffed than community groups. In the case of Health Promotion Services, this perception was strongly reinforced by the high profile (and costly) use of mass media. Requests for assistance were frequently for very innovative projects (many poorly conceived), and for strategies that had time and again been found to be ineffective.

For a centralised health promotion agency, the practical consequences of attempting to be all things to all people are potentially disastrous. Of necessity, such an agency must be selective in what it seeks to achieve, must set limits and be able to account for why limits fall where they do. The research team was given the task of considering a set of criteria most appropriate for this purpose. My involvement entailed reviewing the literature to determine how other similar agencies had made decisions about resource allocation, assisting in the tabulation of morbidity and mortality data, and reviewing literature pertaining to each of the health areas finally selected.

In reviewing the literature and after consultation with a variety of programme planners and administrators, there were at least six identified influences that could impinge upon priority selection. The first influence relates to expressions of community concern for a particular health issue. Although this is an important component in health promotion programmes, it is difficult to ensure that demand
from sections of the public is representative, and that the public is informed about the relative size of different health problems and the potential for improvement.

It would be expected that other influences, such as media-inspired reactions to health issues and government directives, will always be present, and cannot be ignored. Nevertheless, the expectation that a central health promotion agency should always respond to such influences would be less likely if a well publicised and understood set of criteria guided the agency's selection of projects.

Similarly, personal interest by staff members in a disease, health related behaviour or health promotion strategy, as well as the influence of trends or fashions in health promotion should not dictate project selection or development. Rather, a more objective rational planning process using criteria of disease prevalence, severity and preventability was chosen. In working toward this conclusion, Wilson and Wakefield (1986) recognised that...

"...one of the first problems the Health Promotion Branch has to confront in selecting priorities for action is that many preventive practices are still at the demonstration stage in modifying risk factors for disease. This is particularly true where lifestyle or behaviour are involved as aetiological components. The most rational basis for selecting health promotion priorities is where reliable epidemiological information is available to identify problem groups, risk factors and the aetiological process, successful interventions and the mechanisms by which they work. If a large scale community project is proposed without this information, then preventive capital is at risk. In such cases, a great deal more preliminary work is required prior to action.

A second consideration is that since resources are limited, additional criteria must be available to
discriminate between priorities and allow them to be ranked objectively.

Such criteria have been developed by the U.S. Department of Health, Education and Welfare Task Force on Prevention which identified as a high priority for action those problems which are: (1) predominant factors in disability or death; (2) prominent societal concerns; (3) currently supported at inadequate levels, hence most likely to yield significant benefits at the margin and; (4) amenable to intervention.

Two of these criteria require clarification. First, it is understood that 'prominent societal concerns' refers to those disease problems which have a high frequency in the population and not only to problems which are of political concern or receive dramatic media attention.

Secondly, the term 'amenable to intervention' could have various interpretations. It needs to be clarified so that it discriminates between projects on the basis of their research quality and transferability, in order to make the process of priority selection more precise and allow problems to be grouped in priority order for action.

The Branch's suggested revision is as follows: (4) amenable to intervention (i) large scale studies conducted here or elsewhere are of a high quality and lead to the conclusion that sustainable results can also be achieved in South Australia and; (ii) studies conducted here or elsewhere suggest that the problem is amenable to intervention, but further research is required on a pilot basis in South Australia before large scale intervention is recommended.

These criteria can now be used to create groupings of projects in priority order as follows:

GROUP I: Criteria 1,2,3,4(i)
GROUP II: Criteria 1,2,3,4(ii)
GROUP III: Criteria 1,2,3

Group I priorities therefore include only those problems where there is the need for preventive action and the likelihood of producing a successful local intervention on a community basis is high. Group II priorities would include problems where there is a need for preventive action and there is some evidence to suggest that successful interventions are available, but where it is necessary to replicate the intervention on a pilot basis before it is recommended as a community project. Group III priorities include those problems where there is a need for preventive action, but as yet there is no evidence to suggest that successful interventions are available.
It may also be necessary to apply the criteria prospectively. There are some problems which are not currently 'prominent societal concerns' and 'predominant factors in disability', but could become so unless preventive action is taken or maintained. The best example of this is immunization where a decline in the numbers of people being immunized could lead to an outbreak of disease.

In addition to the three groups mentioned, it may be necessary to add a fourth which includes special problems experienced by population sub-groups, or which are localised geographically. Examples of these would be the current concern with AIDS, or the Port Pirie lead problem. It should be noted that problems in this group may also fulfill all of the criteria for inclusion in Group I and differ only in the size of the problem. There may even be considerable advantage in using some of these as health promotion priorities because of the fact that the problem is localised and the target group easily accessible, as in the latter of these examples.

It should be emphasised that when setting health promotion priorities for South Australia, any decision to conduct large scale interventions which have not already demonstrated success elsewhere could lead to a waste of limited resources. South Australia is not in the resource position to fund original projects of the scale and quality of the Stanford or North Karelia studies, unless resources are obtained from other agencies. A more realistic approach is to fund projects for action from Group I which have considerable chance of success. Secondly, projects can be selected from Group II where there is already some research data, but where local pilot studies are required before large scale intervention is recommended. A third strategy would involve encouraging local research interests to look at priorities where there is little or no evidence of successful intervention and bring them to the attention of other funding agencies as requiring support in the form of research resources.

The health problems identified with the highest priority were control of high blood pressure and immunization for childhood disease. As a direct result of the paper, the Health Promotion Branch commenced planning for a programme to reduce rates of uncontrolled high blood pressure. Unlike many previous programmes undertaken by the Branch, this was heavily based on experience from the United States and is viewed as an ongoing programme to extend over many years. There is
less reliance on television and radio commercials and more emphasis on already tested strategies that assist the maintenance of blood pressure control.

Apart from this outcome, a large seminar for health workers was conducted, where the criteria for selecting priorities were explained. Over the following year, the number of ad hoc requests for assistance dwindled and it was much easier to make those requesting help understand why it would not be given. However, there were other coincident influences that were likely to have also contributed to this – for instance, the Branch had a change of Director, and the programmes that were developed during this period did not rely on electronic mass media.

In working on this project, and in dealing with some of the requests for assistance, it is notable that many individuals and groups who wish to promote health by implementing various programmes are reluctant to consult the literature to benefit from previous experience. In many respects, innovative programmes are still held in higher esteem than those that have already been tested. Yet, as Kling (1984) remarks, "it is no virtue to be innovative in making basic program planning decisions. The quality of our practice is best reflected not by a desire to do something new and different, but by the care taken in assuring that our programs are based on the best available evidence." (p.343).

In working in the health promotion area, where one necessarily must work in a multidisciplinary environment, it is crucial to have some
understanding of the obstacles people face in their own work environments that limit their conceptualisation of how to plan and implement well researched programmes.

First, access to the literature is a problem. Because health promotion has many academic fields that can contribute, relevant literature is likely to be scattered among epidemiological, medical, educational, psychological and sociological journals. It is a daunting task for any project officer to make time to comb through such literature, particularly in the many organisations where there is an emphasis on publicly visible program activity rather than results.

Another barrier is the project officer's constant complaint of being "too busy". Kling (1984) explains the tendency of such staff to become overloaded as a response to the 'Demand for Trivia'. When examined, much of a health promotion project officer's time is spent on tasks that run the least risk of changing behaviour - for example, responding to requests for one-off talks to different groups, assistance with the design of pamphlets and taking part in an endless array of committee meetings. However, this state of affairs is often due to a lack of insight about health promotion on the part of other health professionals - it lies with the project officer to demonstrate, rather than simply exhort, that more worthwhile and effective programmes can be run.
2.5. EXAMPLE NO. 3: Community organisation for health promotion

Publication bound in Appendix 3:


During 1985, the Unit was restructured on the recommendation of a Ministerial Review and became a branch of the Public Health Service. One of the major recommendations was that the Unit should place less emphasis on mass media and explore the role of community organisation more fully in developing health promotion programmes.

I was instructed to refer to the literature to examine the community organisation aspects of large scale health promotion programmes. Again, I used this opportunity to argue that effective programmes should be chosen in preference to those which are innovative or ad hoc, and focussed on the role of theory in guiding community organisation.

"...The development of large scale health promotion programs essentially reflects a desire (or a need) to optimise the use of health promotion resources...

Large scale community based health promotion programs, unlike clinics and small group interventions, can service the entire community and therefore hold the promise of bringing about changes in health behaviour which are apparent at a population level...

The substantial resources required to implement large scale community based programs mean that experimentation is costly and failure is extremely expensive. This means that the planning and implementation of large scale programs should be based on sound principles. Yet, frequently what is implemented is ad hoc or not what was intended, or...
reflects specialised professional interests (Gottfriedson, 1984). As Kling (1984) remarks, it is a serious failing to base program choices on 'the latest prevention slogans, on a slick presentation heard at some conference, or on the several year old preferences of one's graduate school professors'.

Health promotion programs can gain much from being based on sound theory. Kurt Lewin is often quoted as saying that there is nothing so practical as a good theory (Marrow, 1969). Theory helps focus efforts in achieving health behaviour change and provides a framework for the identification of key variables, strategies and processes of change (Solomon & Maccoby, 1984; Lee & Owen, 1985). In addition, theory can be seen to provide a baseline for the revision of one's beliefs about the efficacy and importance of various program components, thereby enabling replication of the critical factors in achieving health benefits.

In a developing field like health promotion where failed experimentation is costly in both economic and political terms, it is good practice to make basic program planning decisions on the basis of what has already been shown to work elsewhere.

Encouraging preliminary results have been achieved by a number of large scale health promotion programs, a summary feature of which is that they have drawn upon communication, social psychological and organisational theories to mobilise community resources to achieve health promotion objectives.

Cartwright's theory of action structures has been influential in the planning and development of a number of mass media campaigns; most notably the Stanford Heart Disease Prevention Program (Solomon & Maccoby, 1984). In his analysis of the sale of war bonds, Cartwright found that behaviour change was more likely when personal solicitation occurred in the context of a campaign. He proposed that action which confronts a person with the need to decide about a particular health behaviour may be a 'trigger' or 'cue' to make the adoption of such behaviour more likely, given that cognitive and motivational factors are consistent with behaviour change. Action structures serve not only to remind an individual of the cognitive and motivational messages communicated by the media: they also act as a prompt to behaviour change or provide a way in which motivation, usually stimulated by mass media, can be turned into action.

Applied to health promotion programs, action structures are situations that confront individuals with the opportunity to choose a healthy alternative. Action structures therefore give people an opportunity to translate motivation or desire for change into behaviour....
Bandura's (1977) social learning theory has also provided a basis for community organisation within large scale programs...

Social learning theory postulates that there is a continuous reciprocal interaction between cognitive, behavioural and environmental factors, so that a person can be the agent for, as well as the object of, change. This concept is known as reciprocal determinism.

The Pawtucket Heart Health Program has applied the concept of reciprocal determinism to four major levels of the social structure of the community: individual, small group, organisation and community. In order to put the principle of reciprocal determinism into practice, the Pawtucket Program has attempted to induce simultaneous changes in individuals and their most immediate, relevant and frequently encountered social networks and physical environments. The major theoretical principle on which the Pawtucket Program is based, is that change and maintenance of healthful changes will be enhanced if members of a family, and other environments where an individual spends most of his/her time, are also reciprocally supporting new patterns of healthy behaviour...

One of the central concepts in social learning theory is modelling, or learning through the observation of the behaviour of others. Behaviour change by modelling occurs through seeing, hearing, or reading about the principle components of a behaviour and adopting them into one's own behavioural repertoire (Bandura, 1977). Social learning theory proposes that modelling is particularly influential if the model is......perceived as socially competent, trustworthy and attractive, although there may be additional traits which endear the model to the target group. Powerful influences on beliefs and decisions are most likely to occur when observers perceive similarities between models and themselves.

A second important aspect of modelling is that acquisition of skills to change complex behaviour is more likely to be successful when there can be feedback on the results of practising new behaviours. Although modelling has obvious implications in the design of mass communication messages (Solomon & Maccoby, 1984), the feedback dimension of modelling is lacking in mass media communications and can be provided best at a community level.

The concept of modelling is useful in guiding the selection of people or organisations to act as models and the content of their health enhancing communications.

The application of the concept of modelling in the Pawtucket Program rests on the premise that one organisation can influence another organisation to adopt a health promotion program (organisational level modelling
and peer pressure) in much the same way as individuals influence each other (individual modelling and peer pressure) (Elder, McGraw, Abrams, Ferreira, Lasater et al., 1986). The influence of organisational (and community) models can be exploited by initiatives which make the model more visible in the community, such as more publicity and inter-organisational activity....

Diffusion of innovations theory provides another tool for community organisation in health promotion programs...

Diffusion is the process by which innovations are communicated through certain channels over time among members of a social system. The innovative element may be a new understanding, a different attitude, or a decision regarding a different behaviour. This theory classifies rates of adoption according to a series of psychological and sociological characteristics of respondents. It contributes to an understanding of the barriers to change and the stages of community organisation which must be achieved if changes in health behaviour are to occur and be sustained. In any given community and for any given behaviour, at one extreme there will be a particular group of people who are eager to make change and, at the other extreme, a group who will only adopt a behaviour when it is completely entrenched in the community. The receivers, in order of their rates of adoption, are classified as innovators, early adopters, early or late majorities and laggards. These categories basically identify the level of interpersonal communication involved in persuasion....

Diffusion of innovations theory also views opinion leadership as fundamental to the diffusion process (Rogers, 1983). Opinion leaders are individuals who are able to informally influence attitudes or behaviour in a desired way with relative frequency. It is necessary to identify the opinion leaders in the community under study and to incorporate them as agents of change by involving them in the communication chain. Rogers (1983) asserts that opinion leaders are typically more amenable to change and have many social contacts: therefore they are likely to be found in the ranks of the early adopters. While the primary target group of most government sponsored programs may be the early and late majorities, the mechanisms for diffusing a health promotion message lie in mobilising the opinion leaders from amongst the early adopters (Green & McAlister, 1984).

This paper has viewed community organisation in the context of large scale public health education programs which have invariably been initiated by a central health authority. It can be seen, however, that information dissemination, behaviour change and the maintenance of that change relies heavily upon the involvement and influence of community groups and organisations. Therefore, one of the practical challenges in planning and implementing successful large
scale programs lies in the extent to which central health authorities and community organisations can work co-operatively in the pursuit of common goals. Failure to involve community organisations in the decision-making and planning process of large scale programs will inevitably produce a low level of community commitment to the objectives and strategies of the program, and will limit the degree to which programs can achieve on-going community based initiatives.

It is unfortunate that most published literature relating to large scale programs concentrates heavily upon outcome measures, so that there is a lack of detail about how programs were actually implemented and, specifically, how barriers to effective community organisation were overcome. Outcome evaluations are crucial to a developing field competing for scarce resources: basic theoretical and practical program planning information is needed, also, to reproduce successful health promotion programs."

The principles outlined in this paper are guiding the development of the South Australian High Blood Pressure Education Programme, of which I am a member of the planning team. In particular, continuing education for general practitioners is planned to be heavily based on the use of opinion leaders, relying on interpersonal influence, as well as printed guidelines.

2.6. EXAMPLE NO. 4: Banning the sale of cigarettes in packs of 15.

Publications bound in Appendix 4:

(1) Wilson, DH, Wakefield, MA, Esterman, A. & Baker, CC.


In late 1985, the Philip Morris tobacco company introduced in Australia smaller packets of 15 cigarettes under the brand names 'Peter Jackson' and 'Alpine'. There was concern amongst health authorities that the introduction of packets of 15 was intended to induce children to smoke, by making cigarettes cheaper and more accessible. Advertising for the packets of 15, especially the 'Alpine' brand, was extensive and featured themes likely to appeal strongly to teenagers.

In light of this concern, the research team conducted a survey to assess the popularity of 15's among young adolescents (Wilson, Wakefield, Esterman & Baker, 1987). My role in this was to assist in the calculation of sample size and sample selection, oversee data collection and assist with data analysis and report writing.

"...During May 1986 a cross-sectional sample of 649 male and female adolescents aged 14 and 15 years was taken from nine high schools in the Adelaide metropolitan area to examine current smoking behaviour, and to assess the impact on this age group of new cigarette marketing methods whereby two leading brands names ('Alpine' and 'Peter Jackson') were sold in packets of 15.

It was necessary to resort to a sample of convenience because resources were insufficient to conduct a population based probability sample. Originally, ten schools were selected, based on their ability to represent a broad cross-section of adolescents from different socioeconomic backgrounds. One school withdrew from the survey for administrative reasons just prior to interviewing and was not replaced. All year 10 adolescents who were present on the day interviewers attended the school completed a self-report questionnaire.

Based on an estimate that 40 per cent of the 25,000 children in this age group in South Australia would be smokers, and setting 95 per cent confidence intervals of 35 - 45 per cent, the required sample size for a simple random sample was calculated to be 363 (Moser & Kalton, 1977). This was multiplied by a factor of 1.3 to allow..."
for the clustered design, giving N+472 (Australian Bureau of Statistics, personal communication, 1986), and then boosted by 20 per cent to allow for refusals. A final sample size of 567 was aimed for.

Respondents were asked to state the number of cigarettes smoked on each of the seven days prior to the survey. They were also asked whether or not they had purchased a packet of 15 cigarettes ('Peter Jackson' or 'Alpine') during the four weeks prior to the survey. Respondents were asked to give their reasons for purchasing these cigarettes and replies were coded after return of the questionnaires.

In the data analysis, schools were classified into low, medium and high socioeconomic status according to the proportion of children receiving government assistance for school books (South Australian Education Department data, 1985).

Two weeks prior to the adolescent survey, in late April, an adult survey was commissioned to investigate the knowledge and perception of tar levels among adult cigarette smokers (Profile SA, Management Consultants, 1986). This survey also examined adult purchasing patterns of 15's. A sample size of 500 adults was selected by the random cluster method with 10 interviews per starting point. The starting points were selected on the basis of probability using the Commonwealth Statistician's Collectors Districts (CD's) defining the Adelaide Statistical Division. The method of selection was such that the probability of a CD being selected was proportional to the size of the CD. Starting points for interview were randomly selected within each of the CD's included.

The survey found that 40.5 per cent of 14 and 15 year olds classified themselves as smokers, a figure not significantly different from an earlier survey of a random sample of South Australian school children (Anti-Cancer Council of Victoria, 1984). 56.3 per cent of 14 and 15 year old smokers were found to have purchased a packet of 15 cigarettes in the previous month. This compared with only 8.8 per cent of adult smokers surveyed two weeks earlier (Chapman, Wilson & Wakefield, 1986). Overwhelmingly, the reason adolescents gave for choosing 15's was that they were cheaper.
Although tobacco companies repeatedly deny that they market cigarettes to adolescents, this is ipso facto evidence of a successful marketing campaign. The Minister for Health, on being informed of the results of the survey, requested that a provision to prohibit the sale of packs containing less than 20 cigarettes be added to the set of legislative provisions on smoking to be introduced to parliament later in the year.

In the event, this survey proved central to the Government's successful case against 15's and represents an important example of the way that research evidence can play a crucial role in precipitating government action.

2.7. Concluding remarks

These four examples of projects in which I have been centrally involved demonstrate that the ability to review the literature, to understand the value of theoretical principles, and to undertake research are important components of an attempt to develop well-founded health promotion initiatives. These skills are all part of a psychologist's experience and prepare them well for contributions to the health promotion field.

Furthermore, the importance of being able to work in a multidisciplinary environment should not be understated. Other allied health professionals possess knowledge and skills that can complement those of the psychologist (e.g. epidemiologists (example
1); sociologists (example 3); legal professionals (example 4)).

These examples have also demonstrated the capacity to contribute to health promotion interventions at the various strategic levels at which they are undertaken (e.g. media, community organisation, legislation).
CHAPTER 3: TOBACCO SMOKING - A CHALLENGE FOR
THE PUBLIC HEALTH PSYCHOLOGIST
3.1. Introduction

Although the activities of the Health Promotion Branch and my involvement in them have been wide ranging, my main field of interest and the subject of three subsequent chapters of this thesis lies in the area of smoking cessation. In order to put the reader in context, this chapter gives an overview of the relevant issues in smoking cessation research and intervention from a health promotion perspective.

3.2. The health consequences of smoking

There is now overwhelming evidence from more than 30,000 published articles and reports that cigarette smoking is injurious to health. The Surgeon General’s report on smoking and health in 1979 (United States Department of Health, Education and Welfare, 1979) commented that "cigarette smoking is the single most important environmental factor contributing to premature mortality in the United States" (p.2/9) – a statement that is generalisable to all other modern industrial societies, given their similar patterns of mortality and cigarette consumption. In a Western Australian study, Holman and Shean (1986) calculated that smoking is responsible for an estimated 25 per cent of male deaths and 15 per cent of female deaths annually. Extrapolated to the whole of Australia, this means approximately 24000 deaths each year (Australian Bureau of Statistics, 1985).
The first epidemiological evidence that smoking was harmful to health was obtained over 30 years ago with a study that strongly linked smoking to cancer of the lung (Doll & Hill, 1952; 1954). Hundreds of subsequent studies have suggested that the contribution of cigarette smoking to all cancer deaths is approximately 30 per cent (United States Department of Health and Human Services, 1982). Apart from cancer of the lung, cancers of the mouth (Rogot & Murray, 1980), larynx (Hirayama, 1967) and oesophagus (Doll & Peto, 1976) have all been found to be strongly associated with smoking. Less dramatic, but clear cut, associations have been found between smoking and cancer of the urinary bladder (Doll & Peto, 1976) and pancreas (Hammond, 1966).

Cigarette smoking, high blood pressure and elevated blood cholesterol are the three major risk factors for coronary heart disease (US Department of Health and Human Services, 1983), the most frequent cause of death in Western countries. The occurrence of coronary disease in smokers is related to the number of cigarettes smoked per day, the duration of smoking and the habit of inhaling. Atherosclerotic peripheral vascular disease is also strongly associated with smoking (US Department of Health and Human Services, 1983).

Smoking is known to be the major cause of death and disability from chronic obstructive lung disease (US Department of Health and Human Services, 1984). Cigarette smokers have higher mortality rates from chronic bronchitis and emphysema, an increased prevalence of respiratory symptoms and diminished performance on pulmonary
function tests compared to non-smokers. These differences become more marked as the number of cigarettes smoked increases (Doll & Peto, 1976).

The association between smoking and peptic ulcers in the stomach and duodenum is also well recognised. Men who smoke have twice as many such ulcers as non-smokers and their ulcers heal more slowly and are more likely to lead to fatal outcome (Domschke & Domschke, 1984; Kikendall, Evaul & Johnson, 1984).

There is also an extensive literature indicating that maternal smoking is harmful to the development of the fetus. This evidence is most clear for the effect of maternal smoking on birthweight, where between 1957 and 1986 over one hundred publications, based on studies of more than half a million births, reported that women who smoked during pregnancy had infants of lower birthweight than women who did not (Lumley, 1987). Low birthweight babies (less than 2500 grams) suffer a higher rate of morbidity and have a much higher perinatal mortality rate than babies of normal birthweight. Apart from effects on birthweight, maternal smoking results in a significant increase in the risk of spontaneous abortion and certain complications of pregnancy relating to placental attachment and growth. There is also evidence from a number of studies that maternal smoking may increase the likelihood of Sudden Infant Death Syndrome, although the mechanism by which this occurs is not fully understood (US Department of Health and Human Services, 1980).

Over the past decade, there has been growing concern that the
exposure of non-smokers to the cigarette, pipe or cigar smoke of smokers also has adverse health effects. Apart from the previously mentioned effects on the developing fetus, the evidence that passive smoking causes cancer of the lung in adults is strongly suggestive (National Health and Medical Research Council, 1986). Furthermore, the association between parental smoking and respiratory infection in children during their first year of life is well-established (Colley, Holland & Corkhill, 1974; Ferguson, Horwood, Shannon & Taylor, 1981), but the relationship is less certain at later ages (Guyatt & Newhouse, 1985).

3.3. Patterns of smoking cessation

Despite the well-documented evidence for the deleterious effects of smoking on health, most recent South Australian figures estimate that 34.7 per cent of males and 25.5 per cent of females are smokers (Australian Bureau of Statistics, 1987). These figures represent only a small decrease from those obtained in a previous comparable survey (South Australian Health Commission, 1981), but mask significant trends in smoking for particular age groups. In this respect, rates of quitting appear to be highest among middle aged males (Hill & Gray, 1984), whilst the prevalence of smoking among adolescent females has increased (Hill, Willcox, Gardner & Houston, 1987).

Although the current level of cigarette smoking is substantially lower than that prior to the release of reports by the United States Surgeon General (1964) and the Royal College of Physicians of London.
(1962) documenting the hazards of smoking, there is concern that the prevalence of the habit is not decreasing more rapidly. In addition, there has been some evidence of an earlier onset of smoking, particularly amongst females (U.S. Department of Health, Education and Welfare, 1980) and recognition that the increasing number of years of cigarette exposure will lead to a higher probability of developing smoking related diseases.

For the last two decades, psychologists have sought to understand why people continue to smoke in the face of widely publicised health hazards relating to this behaviour. This search has been spurred on by the realisation that smoking is not simply a pharmacological addiction, but that psychological processes are additionally at work in making cessation or an attempt at cessation, less likely to occur.

Although many smokers achieve permanent cessation, approximately three-quarters of current smokers report that they have tried to quit (Australian Bureau of Statistics, 1987). Of these smokers, 70 per cent have tried to quit on more than one occasion. There is, therefore, a potentially large demand for information which would make the process of quitting easier. Given the health implications of smoking, the interest in smoking as a behaviour, and the demand for easier ways to quit, it is little wonder that there has been a vast number of techniques developed to help motivated smokers achieve cessation.
3.4. Effectiveness of smoking cessation interventions

Many of these techniques represent applications of learning theory principles and/or incorporate considerations related to the addictive properties of nicotine. One to one and small group therapies have provided data on the impact of many techniques on initial behaviour change and maintenance of change months or years after the intervention. Such methods have included operant procedures such as stimulus control or reinforcement of non-smoking (Marston & McFall, 1971); aversive conditioning with shock (Dericco, Brigham & Garlington, 1977); imagination of aversive scenes (Berecz, 1972); warm stale smoky air or rapid smoking (Lichtenstein, Harris, Burchler, Wahl & Schmal, 1973); contingency contracting (Spring, Sipich, Trimble & Goeckner, 1978); self monitoring (Karoly & Doyle, 1975); sensory deprivation (Suedfeld & Ikard, 1974); hypnosis (Agee, 1983); nicotine fading (Beaver, Brown & Lichtenstein, 1981); use of nicotine gum (Raw, 1985); as well as multicomponent approaches (Lichtenstein, 1982); and group therapy in clinics (West, Graham, Swanson & Wilkinson, 1977).

Two findings consistently emerge from the clinical research on smoking cessation. The first is that success rates for different treatment techniques are not markedly different, leading to the conclusion that it is simply better to do something than nothing. Secondly, although most of these techniques demonstrate an impressive decrease in smoking during treatment, this behaviour change is not maintained over time, so that one year after an intervention, only 20 to 30 per cent of subjects who were abstinent
at post-treatment are likely to have remained non-smokers (Hunt & Bespalec, 1974). Reviewers of the psychological literature have been virtually unanimous in their call for increased attention to be paid to helping those who do achieve cessation to maintain their non-smoking. (Benfari, Ockene & McIntyre, 1982; Bernstein & Glasgow, 1979; Leventhal & Cleary, 1980; Lichtenstein, 1982; Lichtenstein & Brown, 1980). Clearly, from a health promotion perspective, if changes in smoking behaviour are to decrease health risks effectively, they must be maintained in the long term, rather than being transient or sporadic.

3.5. Reducing population smoking prevalence: a health promotion objective

It is also important to recognise that if death and illness from smoking are to be significantly decreased, then the methods used to facilitate cessation must be amenable to mass application in order to impact upon national smoking prevalence. The shift in focus from methods appropriate to individual and small group therapy to those designed to impact upon whole communities is a crucial one for psychologists working in the health promotion arena.

One to one and small group therapies can necessarily treat only a small number of smokers and are extremely labour-intensive. The level of staffing required to administer the techniques used in these modes of service delivery could not be replicated sufficiently to achieve a population wide reduction in smoking prevalence. Such therapies may well be effective to the extent that they can achieve
a success rate of 30 per cent, but they have a very limited impact on overall smoking rates. Chapman (1985) points out that a 5 per cent success rate among 10,000 people is over 333 times more efficient than the 15 successes obtained from a 30 per cent rate achieved in a stop smoking group population of 50 people. Both Levitt (1983) and Chapman (1985) have calculated that smoking cessation groups and clinics benefit between 0.02 and 0.1 per cent of smokers, representing an utterly insignificant element in the overall pattern of smoking cessation, where the criterion of judgement is in the reduction in national smoking prevalence.

While the search for more effective maintenance procedures has produced a plethora of studies and reports in the psychological literature, a focus on developing strategies appropriate to impact upon national smoking prevalence has only recently begun to emerge. This is not to imply a criticism that psychologists have misplaced their efforts in helping people to quit. Because their clinical skills and knowledge relate to assisting individuals, and they have had a long professional interest in dependency problems, it was natural to design therapies appropriate for individuals or small groups. It is only with the emergence of health promotion activities and the change in focus that this implies, that psychologists have begun to identify how psychological principles might contribute to the planning and implementation of these alternatives.

In the last decade, there has been increasing interest in two particular approaches with the potential to impact on national
smoking prevalence. First, large scale mass media based programmes aimed at making health related behaviours such as smoking more amenable to change are now widespread in Western countries (Flay, 1987). Second, smoking cessation interventions that can be integrated with existing sources of health care that already have extensive contact with smokers are being vigorously explored (Russell, Wilson, Taylor & Baker, 1979).

Mass media based programmes deserve consideration because they have the potential to reach such a large number of smokers at any one time, including those who make little use of health services and who would otherwise go without assistance (Warner, 1987). Mass media approaches also recognise that the majority of smokers who quit do so on their own with no or minimal assistance (South Australian Health Commission, 1981), and that many smokers wanting to quit express a desire to preserve anonymity, preferring methods that do not involve other people or attendance at a clinic (Schwartz & Dubitzky, 1968; Gallup, 1974). Another advantage of mass media programs is that they may assist changes for which the smoker can feel largely responsible. This is particularly important in the light of research which suggests that change attributed to one's own efforts may be more likely to endure than change attributed to external causes (Kopel & Arkowitz, 1975).

Mass media programmes have generally been used in three main ways (Flay, 1987). First, mass media has been used to inform the public of the negative health consequences of smoking in order to motivate smokers to quit (e.g. O'Keefe, 1971; Warner & Murt, 1982; Hauknes,
A second use of mass media has been to promote specific activities designed to assist smokers to quit — such activities include quitting for a day, printed hints or kits for home use, or enrolling in a clinic or with community agencies (e.g. Donovan, Fisher & Armstrong, 1984; Cuckle & Van Vunakis, 1984; Puska & Koskela, 1983; Maccoby, Farquhar, Wood & Alexander, 1977). Finally, mass media has been used to provide smoking cessation self-help clinics to those smokers who wish to quit (e.g. LeRoux & Miller, 1983; Mogielnicki, Neslin, Dulac, Balestra, Gillie & Corson, 1985).

Flay (1987), in reviewing the effectiveness of forty mass media programmes designed to influence cigarette smoking, concluded that such programmes can be more effective than many have thought. However, he points out that the knowledge necessary to ensure such success is seriously lacking and that a great deal of theoretical development and scientifically valid research is necessary to determine the crucial elements of successful mass media programmes. To date, psychological theory has played an important role in the planning and implementation of several large scale mass media based health promotion programmes (Maccoby & Alexander, 1980; Wakefield & Wilson, 1986). For example, Bandura's (1977) social learning theory has helped guide the development of mass communications within the Stanford Heart Disease Prevention Programme (Solomon & Maccoby, 1984).

In early 1983, the Health Promotion Branch of the South Australian Health Commission received funding to plan and implement a mass media based programme to encourage smoking cessation. As a research officer employed in the Unit, I was requested to provide input to
decision making about the content and delivery of the mass media messages. My background in psychology led me to expect that the attribution theory literature could prove useful in guiding the development of such initiatives (Kopel & Arkowitz, 1975; Antaki, 1982; Sonne & Janoff, 1982). This line of thinking is expanded further in Chapter 4, with a review of the literature on the role of attribution in behaviour change and a discussion as to how this body of knowledge might be used to advantage in motivating cessation by a mass media approach.

Apart from mass media approaches, the potential for a population wide reduction in smoking prevalence relies on integrating smoking cessation interventions with services that already have extensive contact with smokers. Medical practitioners, in particular, are in an excellent position to present authoritative and personally relevant advice to their patients that they should stop smoking in the interests of their health. It has been shown that firm advice to quit from a medical practitioner can produce one year cessation rates of approximately 5 per cent (Russell et al., 1979). Although such a cessation rate may seem low, this type of intervention has the potential to influence large numbers of smokers. Given that 77 per cent of the population visit a doctor at least once a year, a 5 per cent quit rate on a national basis would produce 190,000 ex-smokers each year (Australian Bureau of Statistics, 1983).

Psychologists can play a useful role in designing stop smoking interventions which complement the skills and abilities of medical practitioners and other professional groups that have regular
contact with large numbers of smokers. Psychologists have the potential to advise medical practitioners on tailoring stop smoking strategies and techniques to different stages of readiness to quit (Owen, 1985). Psychological principles can also be used to guide the development of brochures, 'quit kits', books and audiotapes which can be used to augment advice to quit (Owen & Halford, 1988). A further discussion of these issues is presented in Chapter 5, where psychological principles were used to guide the development of a stop smoking intervention for general practitioners to use with their patients.
CHAPTER 4: THE ROLE OF SELF-ATTRIBUTION IN SMOKING CESSATION AND ITS POTENTIAL APPLICATION TO MASS MEDIA COMMUNICATIONS
4.1. Introduction

The use of the mass media based approach in promoting health behaviour change, as has been discussed, offers a number of advantages over more labour-intensive strategies, in that it is more likely to effect population wide changes in smoking and resembles the type of 'minimal' intervention for which most smokers express a preference. In addition to these considerations, mass media based programmes hold the potential to assist changes for which the smoker can feel largely responsible. This is particularly important in the light of research which suggests that change attributed to one's own efforts may be more likely to endure than change attributed to external causes (Kopel & Arkowitz, 1975; Sonne & Janoff, 1982).

A brief review of research and literature on the role of attribution in behaviour change was undertaken (Kelley & Michela, 1980; Antaki, 1982), with the objective of determining how this body of knowledge might be used to advantage in motivating cessation by a mass media approach. Specifically, it was hoped that the review would assist in the development of television commercials for a stop smoking campaign (named 'Quit. For Life.').

4.2. Attributions and the maintenance of behaviour change

Attribution research is the field of social psychology concerned with people's everyday explanations for events and experiences. Stemming from the early work of Heider (1958), the field has
expanded to encompass a diversity of methods and theoretical perspectives (Antaki, 1982). Kelley & Michela (1980) distinguish between 'attribution theories', which are principally concerned with the antecedents of interpersonal perceptions, and 'attributional theories', which are primarily concerned with the consequences of attributions, such as changes in expectancy and behaviour.

It is the attributional approach that is of interest here. Attributional theories broadly assume that an individual's response to an event or experience will be significantly influenced by the perception of its cause (Kelley & Michela, 1980). As such, they adopt a highly cognitive view of the relationship between the person and the environment. Rodin (1978) explains:

"Attributions are significant because people respond not to events per se but to their cognitive representations of these environments. Thus their perceptions and explanations for events are critical in determining their behaviour" (p.531).

One focus of attributional research has centred around people's explanations for their own behaviour and experiences. Kopel & Arkowitz (1975) produced strong evidence for the tenet that self-attribution of behaviour change (perceived as caused by oneself) increases the likelihood of maintenance of that change, compared with instances where the behaviour change was attributed to external factors (eg. the action of a drug; the skills of a therapist). It was suggested that self-attributions for successful behaviour change would lead to positive self-inferences about the
individual's dispositional factors (i.e. capabilities), which would generalise beyond the treatment milieu. Conversely, environmental attributions would only be relevant to the setting and time during which the specific environmental conditions were present and thus, not generalisable (Kopel & Arkowitz, 1975).

In an early classic study, Davison & Valins (1969) formulated and tested this hypothesis in an experiment where subjects underwent an electric shock tolerance test. Following a shock exposure, subjects were given a drug (actually a placebo) and exposed to half the shock intensity, although they were led to believe the shock intensity was the same as the first exposure. When half of the subjects were then told the drug had been a placebo, (self-attribution group), they subsequently perceived shocks as less painful and tolerated more shock than the group who attributed the difference in intensity to the effect of the drug (external attribution group). The authors posited that the self-attribution condition permitted the subjects to infer that something about their shock-taking ability had changed, as opposed to inferring that a mere temporary state had been brought about by a drug.

In a later study, Bowers (1971) led subjects to observe a change in their preference behaviour, through hypnosis and an amnesic suggestion concerning the fact that they had been hypnotised. Half of the subjects received concurrent verbal reinforcement for their observed behaviour change, while the remaining subjects were not given any external cues to explain their behaviour change. The significant group differences on subsequent persistence of the
behaviour change lent support to the superiority of self-attribution for maintenance of the original behaviour change.

Support has also been provided for self-attribution as a mechanism of sustained behaviour change for such behaviours as insomnia (Davison, Tsujimoto & Glaros, 1973), obesity (Jeffrey, 1974; Sonne & Janoff, 1979), problem drinking (Chaney, O'Leary & Marlatt, 1978) and smoking (Chambliss & Murray, 1979; Eiser, 1982).

In an early clinical application of the self-attribution research, Davison et al. (1973) administered a drug, as well as training in self-relaxation and scheduling, to all insomniac subjects. Half the subjects were subsequently told that the drug was too weak to account for any clinical improvement, so that they would be more likely to attribute any improvement in falling asleep as more due to their own efforts (self-attribution group). The remaining subjects were told they had received a strong and optimal dose of the drug which would assist them to fall asleep (external attribution group). It was predicted and found that the self attribution group showed greater maintenance of therapeutic improvement than did the external attribution group.

Jeffrey (1974) investigated the differential effect of self-control and environmental control procedures on the maintenance of weight loss and appropriate eating habits. The self-control programme stressed the subjects' responsibility for weight management and the role of self-reinforcement, while the environmental control condition emphasised the therapist's role in reinforcement and
promoting weight loss. Although the interventions were equally effective in promoting a reduction in weight over the seven week programme, the self-control group were significantly better at maintaining weight loss at a six week follow-up. A later study (Sonne & Janoff, 1982) replicated these conclusions, additionally finding that at an eleven week follow-up, the maintenance of weight loss was even more marked in the self-control group.

A procedure similar to Davison et al.'s (1973) experiment with insomniacs was carried out with smokers by Chambliss and Murray (1979). Smokers were given tablets to take each day of the therapeutic procedure and instructed in self control techniques. As expected, smokers who were then told that the tablets were placebos (self attribution condition) demonstrated a significantly greater reduction in smoking, than smokers who were not debriefed about the tablets (external attribution condition).

Blittner, Goldberg & Merbaum (1978) also instructed smokers in self control techniques. However, half of their smokers were led to believe they "had strong willpower and great potential to control and conquer their desires and behaviour", while the other half were simply trained in the self control techniques. At almost all of the follow up periods, and after 14 months, the 'primed' group of subjects were significantly more effective in maintaining a reduction in smoking. Thus, smokers who were led to believe they possessed skills or characteristics that allowed them to exert control over their smoking behaviour, were more successful at maintaining cessation.
Other work in the smoking cessation arena has generally supported and extended these findings. A series of studies by Eiser and his colleagues (Eiser & Sutton, 1977; Eiser, 1978; Eiser, Sutton & Wober, 1978; Eiser, 1980; Eiser, 1982) have suggested that a belief on the part of smokers that they are addicted to cigarettes allows them to attribute smoking to forces outside of their personal control, thus making continued smoking more likely. In a study of 1800 smokers, Eiser (1982) found that those who saw themselves as addicted and therefore had an external attribution for failure to quit, had lower expectancies of success in being able to quit, and less firm intentions to stop smoking. At a one year follow up, smokers who had viewed themselves as addicted were significantly less likely to have tried to quit, and were less likely to maintain cessation if they did try to quit. Eiser therefore argues that the subjective belief in addiction prevents an attribution of control over the smoking habit, and maintains that anti-smoking campaigns and stop smoking groups should attempt to counter or modify such external attributions of control.

To summarise, the tenet that self attributed behaviour change is better maintained than change attributed to external factors, is one that has received consistent experimental support. In addition, there is consistent empirical evidence from a range of health related behaviours which support this assertion.
4.3. The experience of ex-smokers who quit without assistance

A number of additional sources of support for the hypothesis under consideration are provided by the experience of ex-smokers who quit without assistance.

First, the majority of ex-smokers have quit without formal sources of help. In a statewide survey of community smoking habits, 84 percent of ex-smokers reported that they "just stopped" (South Australian Health Commission, 1981). Quitting smoking by one's own efforts may therefore be more successful than formal methods of cessation (eg. stop-smoking groups, counselling), although Schachter (1982) points out that this in part may be explained by a higher success rate with multiple attempts to quit, as compared to the single attempt characterized in the evaluation of formal methods. Nevertheless, 20.8 percent of the South Australian population are ex-smokers (Australian Bureau of Statistics, 1987). This means that most of the 226,561 ex-smokers have quit on their own and remained so.

Second, studies of self-initiated quitters (Pederson & Lefcoe, 1976; Perri, Richards & Schultheis, 1977; Baer, Foreyt & Wright, 1977) show that ex-smokers use a variety of strategies to quit and maintain their non-smoking status. Davidson (1976) recommends the use of cafeteria style behavioural programmes of smoking cessation which teach a variety of quitting skills and encourage the client to choose an alternative that best suits him, hence increasing self-attribution. Indeed, Kopel & Arkowitz (1975) and Sonne &
Janoff (1982) suggest that self-attribution of behaviour change could be enhanced by allowing the client to play an active role in the planning and execution of his own treatment. The majority of successful quitters therefore tend to have quit on their own, and to have selected their own strategies for quitting and maintaining abstinence.

4.4. Implications for a mass media based stop smoking programme

So far, this discussion has suggested that where people are able to feel that they have personal control over smoking behaviour, they are more likely to maintain cessation. It follows that one of the objectives of any strategy designed to achieve continued smoking cessation should be to convince smokers that they are the engineers of their own behavioural change. In terms of the 'Quit. For Life.' programme, the self-attribution concept has implications for both the delivery and content of programme components.

The first application relates to the products and services that the programme offers to smokers to help them quit. A range of smoking cessation options would be most consistent with Davidson's (1976) recommendation for cafeteria-style approaches to smoking cessation. The stop smoking options could be offered through press advertising, and the self-attribution concept made explicit by the suggestion that the smoker is the best judge of what will help him or her to quit.
In terms of the content of health messages, the literature also suggests that training the smoker selectively to make attributions about his smoking behaviour which enhance his perception of personal control may increase his confidence in his ability to remain abstinent (Danaher & Lichtenstein, 1978). This could be communicated by television commercials that emphasise the 'inner strength' of the smoker and the amount of control he/she has over smoking. As an adjunct to the images portrayed on television commercials, slogans and jingles which stress the smoker's own responsibility for quitting smoking may be readily incorporated into a mass-media anti-smoking campaign. For example, the chorus of an anti-smoking television commercial used in the North Coast Healthy Lifestyle Programme (Chapman & Egger, 1980) reads:

"You're born non-smoker
We knew you had it in you
We knew you could do it
We knew you were a winner."

Apart from these broad background messages, efforts can be directed toward modifying what, specifically, smokers say to and about themselves. For example, the abstinent smoker should be encouraged to attend to the types of self-statements which may make continued smoking more likely (eg. "I can't handle this without a cigarette"), and to counter them with self-statements that reinforce personal control (eg. "I can relax without smoking a cigarette") (Bullock, 1981). Techniques such as these can constitute part of a newspaper or magazine article, or could be explained in more detail in pamphlets and self-help booklets.
Alternatively, a series of radio or television advertisements might be produced to equip smokers with a number of simple, specific skills they could apply in situations where they would be most tempted to smoke. In this respect, Marlatt and Gordon (1980) have identified the three most common situations in which people are likely to relapse as being feelings of negative affect, social pressure to smoke, and situations of interpersonal positive affect.

4.5. Concluding remarks

In the event, it proved difficult to determine how much influence these recommendations had in the overall design of the programme. The decisions about the development of television and radio commercials were made primarily on the basis of market research information, and as a junior member of staff, I was not involved in meetings where this was discussed. However, it was encouraging to note that two of the three television commercials portrayed a cartoon character in two situations (at work, and at a social gathering) where he was tempted to smoke. The character, in resisting the temptation to smoke, was portrayed as being very proud of this ability.

The preceding discussion has shown that there are opportunities, in theory, to apply the concept of self-attribution within a mass media based approach to smoking cessation. However, it is recognised that the evidence for the efficacy of self-attributions in maintaining behaviour change has been assembled from studies involving largely clinical populations in face to face therapies. It may be the case
that the effectiveness of the self-attribution approach has limited
generalisability to an intervention aimed at a non-clinical
population, using the impersonal medium of television. Further
research is required to extent and clarify this area of enquiry.
CHAPTER 5: DEVELOPMENT OF A GENERAL PRACTITIONER
MEDIATED SMOKING CESSATION INTERVENTION
5.1. Introduction

In considering strategies to effect a population wide reduction in smoking prevalence, the Health Promotion Branch recognised the potential of general practitioners (GPs) in motivating their smoker patients to quit. As part of the development of the Pilot Stop Smoking Programme, the Health Promotion Branch decided to develop a programme for GPs to use with their patients.

In mid 1982, I was given the task of developing the structure and content of a GP mediated smoking cessation programme, as well as an evaluation protocol to assess its efficacy and acceptability. This chapter briefly reviews the evidence available to 1982 as to the efficacy of such programmes, describes the theoretical background to the programme that was developed and discusses the reasons why the programme was not implemented. Following this, a discussion of the literature since 1982 is presented, emphasising the need to address some of the practical constraints of giving routine advice to quit in a general practice setting. Finally, a recent GP mediated programme is outlined which seeks to take account of these barriers.

5.2. The GP's influence in smoking cessation

There have been a variety of intervention studies which consistently indicate that GPs can induce small, but significant numbers of their smoking patients to quit. Several early studies, while finding impressive cessation rates from advice to quit by a GP, had no control groups included in the studies, so that the relative
efficacy of the interventions was unclear (Handel, 1973; Richmond, 1977). Mausner, Mausner & Rial (1968), in a controlled study, followed 157 general practice patients who were given either advice to quit or no such advice. At a six month follow-up, 5 per cent of the intervention group reported they had quit, compared to none in the control group. However, Porter and McCullough (1972) found no difference at six months in the smoking behaviour of 101 patients given advice to quit compared to 90 patients who were not given advice. Nevertheless, 33 per cent of the intervention group reported they had cut down the amount they smoked, compared with 9 per cent in the control group.

One of the most carefully conducted studies involved 1,567 general practice patients attending 28 GPs in five group practices in London (Russell, Wilson, Tayor & Baker, 1979). Patients were randomly allocated by day of attendance to one of four conditions: non-intervention control, questionnaire only control, advice to quit, or advice to quit plus a leaflet and a warning of follow-up. In each group, the percentage of patients who were abstinent at both one month and one year after consultation were 0.3 per cent, 1.6 per cent, 3.3 per cent and 5.1 per cent. Validation of the verbal report of abstinence on a subsample of patients, using a measure of nicotine concentration in saliva, revealed a low deception rate.

Another study in a family practice teaching unit attached to an Ottawa hospital followed 451 patients who were randomly assigned to conditions involving questionnaire only, questionnaire and advice, and questionnaire advice and pamphlet (Stewart & Rosser, 1982). No
significant difference was found in the proportion of smokers abstinent at both 5 months and 1 year after consultation, the cessation rates in each group being 3.1 per cent, 3.1 per cent and 4.3 per cent respectively. It should be noted that no chemical validation of smoking status was included in this study and that the questionnaire only control achieved a substantially higher quit rate compared with the Russell et al. study. In contrast, the questionnaire and advice to quit condition produced very similar rates to the Russell et al. study.

Another intervention in Hamilton, Ontario (Wilson, Wood, Johnston & Sigurelia, 1982) examined the effect of the advice to quit compared with advice to quit plus support and encouragement from the doctor at one, three and six months. 211 patients attending two family practices reported on their smoking status between six and fourteen months after entry to the trial. Significantly more smokers had quit in the support condition (23 per cent) compared with the advice only condition (12 per cent). These seemingly high cessation rates may be tempered by the fact that no chemical validation was undertaken. In addition, no average follow up time was reported, so that many of the follow up contacts may have been nearer to six months.

In Australia, Cripps, Messum, Breden, Lawson & Killer (unpublished) followed 336 patients aged 30 to 55 years who had visited 10 GPs in four group practices in Sydney. Patients were randomly allocated to a non-intervention control condition or a condition involving advice to quit and a pamphlet. At one year, cessation rates were not
significantly different (5.4 per cent versus 8.5 per cent), although in a favourable direction. No chemical validation was used, so that both of these results may have been over-estimates.

In sum, these studies demonstrate that advice to quit from a doctor can have a significant impact on cessation rates among asymptomatic patients. The provision of a simple pamphlet or booklet of quit smoking tips may not be as important in boosting cessation rates as continuing support or warning of follow up on the part of the doctor. The Russell et al. (1979) study did not examine the relative effect of each of these components. A non-significant increase in cessation rates was found with the addition of a pamphlet in the study by Stewart and Rosser (1982). In contrast, the Wilson et al. (1982) study suggests that the effect of supportive follow up may be quite marked.

In general, patients with smoking-related diseases who are advised by their doctor or specialist to quit demonstrate substantially higher cessation rates compared with asymptomatic patients. In a review of intervention studies with patients suffering from respiratory disease, Pederson (1982) notes that following physician advice to quit, cessation rates varied from 20 to 51 per cent. However, none of the studies included control groups, and follow up periods ranged from three months to five years.

Rose and Hamilton (1978) conducted a well designed study of 1,445 men aged between 40 to 59 years who had been identified by screening to be at high risk of cardiorespiratory disease. After random
allocation to either a normal care control or a strong advice to quit condition, patients were followed up at one and three years. At one year, cessation rates were 8.9 per cent and 39.3 per cent. These rates were maintained at the three year follow up (14.5 per cent and 35.5 per cent) and although the proportion of ex-smokers had increased in the control condition, the difference was still statistically significant.

Advice from a physician to quit given to survivors of myocardial infarction produces even higher quit rates. Pederson (1982) reports that the majority of interventions using physicians show quit rates at one year or more between 40 and 60 per cent. Danafer and Lichtenstein (1978) suggest that cessation rates appear to to be related to the patients' perceived level of personal risk as determined by the immediacy of the physical symptoms produced by smoking. Strong advice against smoking given during or after a health crisis such as a myocardial infarction may well increase the patients' receptiveness to intervention and add to the motivation required for sustained abstinence.

It should be recognised that there are alternative explanations to account for the higher quit rates among patients with smoking related diseases compared with asymptomatic patients who attend general practice. For example, many of these studies use a respiratory or cardiac specialist as the agent of change rather than a GP. Furthermore, advice to quit and physician involvement may be much more intense with patients with more severe diagnoses.
For many patients, help with quitting smoking might conceivably be the most important influence the GP will ever have on their health. From the studies available, it can be concluded that GPs are in a position to obtain relatively good results with relatively economical methods.

5.3. Theoretical basis of the GP-mediated smoking cessation intervention

The intervention developed for GPs to use with their patients was largely based upon a cognitive behavioural model of smoking cessation as outlined by Pechacek and Danaher (1979). A cognitive-behavioural model of smoking conceptualises smoking cessation as a process, and recommends the use of specific, practical intervention strategies at certain points in this process. According to Kendall and Hollon (1979), a cognitive-behavioural approach can be described as "a purposeful combination of the performance-oriented and methodologically rigorous behavioural techniques with the treatment and evaluation of cognitive mediational phenomena...Internal as well as environmental variables are targets for treatment and are scientifically evaluated as contributors to behavioural change" (p.3).

The emergence of cognitive-behavioural interventions has been assisted by four major streams of influence (Kendall & Hollon, 1979). Briefly, these are:

(1) that cognitions are subject to the same laws of learning as overt behaviours;
that attitudes, beliefs, expectancies, attributions and other cognitive activities are central to understanding and changing overt behaviours;

(3) that theoretical advances by recognised learning theorists have furthered the process of casting covert cognitive processes into testable formulations that are easily integrated with behavioural paradigms, and;

(4) that it is desirable and viable to combine cognitive treatment strategies with explicit behavioural contingency management in order to facilitate meaningful outcomes.

The cognitive-behavioural perspective offers a framework for integrating the most useful and effective elements of a diverse array of models of smoking and smoking cessation (Pechacek & Danaher, 1979). From its conception of smoking as an overlearned behaviour, the behavioural perspective provides some understanding of the factors involved in maintaining smoking. The role of cognitive and pharmacological factors in smoking cessation can also be incorporated by drawing on models of attitude change, decision-making, self-efficacy and attribution. Pechacek & Danaher (1979) have incorporated these models into a cognitive-behavioural model of smoking that "offers an explanation of various stages through which smokers may proceed from initiation through successful cessation, or continuing smoking despite obvious health consequences" (p.400).

With respect to smoking cessation, these theorists draw heavily upon Bandura's (1977) conceptualization of self-efficacy as a major
determinant of the initiation of behaviour change and long term maintenance of that change. Briefly, Bandura advocates that two types of expectations mediate behaviour change. The first, 'response-outcome expectancy', is defined as a person's estimate that a given behaviour will lead to certain outcomes (Bandura, 1977). The second type of expectancy 'self-efficacy' refers to one's perception of personal ability to reach a goal or outcome. The strength of these two expectations will influence whether or not an attempt will be made to quit smoking and the extent of persistence in efforts to quit.

Self-efficacy has been consistently identified as a predictor of relapse in smoking behaviour. Individuals with high efficacy expectations are less likely to relapse following termination of a formal smoking cessation programme (Corn, 1978; Ewins, 1981; DiClemente, 1982; Condotte & Lichtenstein, 1981). According to Bandura (1977), perceived self-efficacy is influenced by four sources of information. The strongest source of influence is performance accomplishments (i.e. actual experience of personal mastery), where success increases efficacy expectations. Vicarious experience (observation of the performance of similar others) is also postulated to influence self-efficacy, where, if similar others experience success in a given task, perceived self-efficacy is increased. Verbal persuasion is a third source of influence, and physiological arousal is also asserted to mediate efficacy expectations - high arousal debilitating performance.
Bandura proposes that success in smoking cessation will occur when:

1. the smoker perceives the treatment as having high response-outcome efficacy;
2. the treatment produces rapid enhancement of self-efficacy;
3. the smoker acquires skills to cope with maintaining non-smoking behaviour;
4. positive changes in smoking behaviour are attributed to the self, and;
5. a strong sense of self-efficacy for abstaining from smoking results.

Pechacek and Danaher (1979) have incorporated the concept of self-efficacy into a cognitive-behavioural model of smoking cessation, that also draws heavily upon attribution theory (see Chapter 4), and general learning theory principles. Recent analyses of treatment planning have categorised intervention into three stages: preparation, cessation and maintenance. Table 2 outlines the goals and possible intervention strategies at each stage. This outline guided the development of the GP-mediated stop smoking programme. Strategies were selected which were most appropriate for delivery by a GP and could be incorporated within the constraints of a busy general practice. The programme requires three consultations with the doctor, each of which corresponds to a stage in the smoking cessation process.
Stage One: Preparation

Goals:
1. Provide a clear and persuasive rationale for the treatment program
2. Clarify immediate and long-term expectations regarding program effectiveness
3. Identify special problems of participants
4. Encourage self-attribution of changes to be made

Strategies:
1. Cognitive–behavioral rationale
2. Self-monitoring of normal smoking
3. Behavioral Self-control model

Stage Two: Cessation

Goals:
1. Rapid induction of behavior change and production of performance accomplishments
2. Reattraction or minimization of withdrawal fears or expectations
3. Enhancement of attribution of change to ability rather than effort

Strategies:
1. Aversive smoking (satiation, rapid smoking, electric shock, or other), target quit dates, behavioral contracting, or complex self-control packages
2. Massed or daily treatment sessions
3. Persuasive counseling sessions

Stage Three: Maintenance

Goals:
1. Establish effective coping skills and alternatives to smoking
2. Clarify benefits of cessation
3. Develop self-perception of self as nonsmoker

Strategies:
1. Skills Training—relaxation, positive self-verbalizations, self-contracting, self-reinforcement, problem solving
2. Behavioral rehearsal of alternatives
3. Persuasive counseling sessions
4. Sparse treatment sessions

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TABLE 2: Treatment strategies at the three stages of smoking cessation.
(Source: Pecachek & Danaher (1979))

5.4. Outline of the intervention

An outline of how the intervention is planned to operate in practice is presented in Figure 1. It consists of three consultations with a patient, each one week apart. Briefly, the first consultation involves gathering information from the patient to tailor advice to quit to his/her particular smoking habit. On the basis of this information, a word processor generates personalised handouts for the doctor to give to the patient at the second and third consultations. The second consultation required that the patient contract with the doctor to quit smoking on a certain day and provided personalised advice on quitting. At the
third consultation, the patient was given more advice on how to deal with urges to smoke and how to go about changing other lifestyle patterns detrimental to their health. The instructions in the patient handouts are self-explanatory and the doctor is only required to perform those tasks listed in Figure 1.

FIGURE 1: Flow chart (abstracted from draft copy of the GP mediated stop smoking programme).
5.4.1. First patient consultation: preparation to quit

The major objective of the first patient consultation was to collect information relevant to individualising the patient's stop smoking programme. This was achieved in part by the administration of a questionnaire, which sought information on:

(1) smoking history (i.e. cigarettes smoked per day, previous attempts to quit, prior experience of withdrawal symptoms, previous situations in which relapse occurred;
(2) degree of addiction to cigarettes (Fagerstrom, 1981);
(3) existence of conditions exacerbated by smoking;
(4) efficacy expectations for being able to resist smoking in particular situations.

In addition, patients were requested to monitor their smoking for a 24 hour period and to record the time, intensity of the urge to smoke, and the situation in which the cigarette was smoked (Danaher, 1976; Kanfer & Karoly, 1972).

Together, this information was used to determine likely obstacles to successful cessation, so that specific personalised strategies could be suggested to counter or modify such obstacles.

5.4.2. Second patient consultation: quitting

During the second consultation, the patient was asked to contract with the doctor to stop smoking on a specified day. Contingency
contracting has been described as a simple and economical method of making smoking cessation more likely (Lichtenstein & Danaher, 1976), providing the incentive needed to produce therapeutic change. The outcome literature suggests that cessation is best achieved by halving the regular smoking rate for several days and finally quitting completely on a specified day (Danaher & Lichtenstein, 1978). Such a procedure allows the smoker time to become accustomed to doing without some cigarettes, while the short time period in which the smoking rate is halved makes it less likely that each individual cigarette will be more rewarding for the smoker.

Individualized feedback was provided to the patient from the information obtained by questionnaire and the self-monitoring undertaken after the first consultation. The patient was instructed on techniques to avoid resumption of smoking, tailored to suit their individual smoking characteristics.

For example, an individual who had a low expectation of being able to avoid smoking in situations of stress or tension was taught more healthy ways of reducing tension, such as diaphragm breathing. Alternatively, if a patient had previously relapsed in a situation of social interaction (e.g. at a party or drinking in a pub with friends) and his self-monitoring information showed that urges to smoke were highest in these situations, the patient was taught a number of skills to help them avoid smoking on these occasions (e.g. self-talk).
Thus, patients were encouraged to view smoking cessation as more likely if they adopted the use of simple techniques. In this way, smoking was presented as a behaviour over which they exerted control through enhanced personal skills. This consultation therefore sought to facilitate appraisals of personal efficacy.

5.4.3. Third patient consultation: maintenance

Approximately one week after the quit date, the patient was required to make a final appointment with the doctor for the maintenance component of the programme. The primary goal of the maintenance consultation was to establish effective coping skills and alternatives to smoking.

First, the patient was taught to recognize "high risk" situations which were likely to increase the probability of a relapse (Marlatt & Gordon, 1980). Discriminative stimuli associated with encountering a high risk situation can be identified from the self-monitoring data and can be used as warning signals to implement an alternative sequence of behaviour (i.e., coping behaviour). Discriminative stimuli may involve environmental cues (such as entering a bar or restaurant where others are smoking), cognitive strategies (such as making apparently irrelevant decisions which might lead the individual closer to relapse, e.g., deciding to visit a friend who is a smoker), or physiological state changes (feelings of frustration or arousal which the person lables as "craving" for a cigarette).
Second, thought management techniques were used to help the patient resist urges to smoke (Lichtenstein & Danaher, 1978). Such techniques included direct confrontation, thinking about the disadvantages of smoking, distraction and self-reward. The patient was also encouraged to plan ahead, and to develop his/her own strategies to avoid smoking (i.e., behavior rehearsal).

In addition to providing each patient with a set of specific skills, each designed as a coping response to a particular high risk situation, a more global strategy can be used to replace smoking behavior with something that has a similar functional value to the individual, but is a more adaptive form of self-indulgence or reward (Marlatt & Gordon, 1980). Such 'positive addictions' (Glasser, 1976) include jogging, swimming, yoga, meditation and relaxation training. Aerobic activity and calisthenics exercises were also recommended for patients who were under stress or experiencing weight control problems.

The occurrence of a relapse episode was encouraged to be viewed as a learning experience, rather than a failure. Relapse episodes were therefore conceptualized as situations where information about events leading to relapse can be gathered. This approach allowed the patient to practice alternative coping responses, and to increase the likelihood of coping more effectively the next time that chain of events was encountered (Cummings, Gordon & Marlatt, 1980).

The final consultation thus focussed upon helping the patient...
attain the ability to endure challenges to perceived self-efficacy, without the collapse of perseverance to utilize skills in order to remain a non-smoker.

5.5. Proposed evaluation

To evaluate the intervention, a pretest-post-test control group design was proposed (Campbell & Stanley, 1963). Twenty GPs were planned to be recruited for the study, through negotiations with a local medical association. Smoker patients attending these GPs over a three week period would be randomised into control and intervention conditions. Randomisation would occur by day of attendance at the clinic. Smokers allocated to the control condition would receive any advice the GP usually gave about smoking (if any).

The pretest-posttest control group design was chosen because it controlled for the extraneous variables of history, maturation, testing, instrumentation, regression, selection and mortality, that could otherwise affect the internal validity of the study (Campbell & Stanley, 1963). The use of 'pseudo-patients' to assess the comprehensiveness of the delivery of the components of the programme was considered, but was thought unethical by the Health Promotion Services senior staff and a local medical association. Rather, it was planned to ask patients at the three month follow-up, about the advice they had received.

The main threat to external validity, or the ability to generalise
the results of the study to other population and treatment settings, is the interaction of selection bias and the experimental variable. Although the pretest-posttest control group design controls for the effects of selection at the level of explaining away experimental and control group differences, it is still possible that any effects validly demonstrated apply only to the population from which the experimental and control groups were jointly selected. Medical practitioners willing to spend time during their busy office schedules administering a new, unfamiliar intervention with smokers are likely to be more progressive in their outlook than the 'average' GP. They are likely to be more interested in preventive medicine, and in the smoking cessation issue. Therefore, any effects detected by the study would clearly represent an 'at best' success rate.

Another threat to external validity which cannot be controlled for by the research design is the reactive effect of testing. This occurs when a pretest alters a subject's responsiveness to the experimental variable, thus rendering the results obtained for a pretested population unrepresentative of the unpretested universe from which the study group was selected. In this particular study, however, the pretest in the experimental condition actually forms part of the intervention, since the information collected is used to personalise the programme to the smoker's particular characteristics.

5.6. Outcome of the project

Despite reaching the stage of programme development where materials
were almost ready for mass production, the GP mediated smoking
cessation programme was not implemented. There were a number of
reasons for this.

First, the programme was perceived by senior staff to be extremely
complicated. None of the staff had a background in psychology and
the theoretical basis of the programme was unfamiliar to them. One
of the influential senior staff members, who had a background in
marketing, took issue with the individually tailored nature of the
programme, arguing from his experience that it was unnecessary.

Secondly, and related to this, there was a concern that adequate
resources would not be available for training GPs and their
reception staff to use the programme. This is an important point,
when considering the history of programme materials produced by
Health Promotion Services. All of the programmes developed by the
Service were not designed to be ongoing in nature, in that they had
extremely limited training and servicing components. For example,
its immunization and breast self-examination programmes involved
'quick-hit', one-off activities, such as seminars, distribution of
pamphlets and booklets, production of television and radio
commercials and newspaper and magazine articles (McDonald, 1981;
1982). Senior staff were much more attracted to the Russell et al.
(1979) intervention for use in the Pilot Stop Smoking Programme.
The Russell et al. method involved minimal advice to quit and a
booklet of stop smoking advice. This programme was much more akin to
the type of intervention the Service was accustomed to developing.
Finally, the Pilot Stop Smoking Programme was to be the first initiative of Health Promotion Services under the newly elected Labor Government. As mass media programmes afford a very visible display that the government is committed to health promotion, there was considerable political pressure to ensure that appropriate programme components would be ready by the March 1983 deadline. The staff were therefore hesitant to commit resources to a GP mediated stop smoking programme that seemed complicated and resource intensive, when a viable option existed in the Russell et al. programme.

5.7. Experience since 1983

In the five years since the Pilot Stop Smoking Programme, new findings published in the literature and my own experience would dictate that a very different programme be produced. In 1985, I produced a review of the literature on GP mediated smoking cessation programmes with recommendations for action (Wakefield, 1985). The report took account of recent trials in general practice of minimal advice to quit smoking, concluding that minimal advice produces small, but significant quit rates. The report also acknowledged that higher quit rates were achieved among patients with smoking related symptoms (British Thoracic Society, 1984; Orleans, 1985) and those who were led, through objective test feedback, to perceive themselves as personally vulnerable to the effects of smoking (Jamrozik, Vessey, Fowler, Wald, Parker & Van Vunakis, 1984).
A subsequent report (Wakefield, 1986) examined the barriers GPs faced in regularly advising patients to quit. This was undertaken on recognition of the fact that population changes in smoking using this strategy could only be achieved if a substantial proportion of GPs adopted advice giving on an ongoing basis. Any intervention that was produced needed to appeal to a majority of GPs and be acceptable for use, given the constraints of a general practice environment. The programme produced in 1983, although based on principles found useful in modifying smoking in other settings, failed to take adequate account of the barriers to giving advice, as perceived by GPs.

There is no doubt that GPs believe smoking cessation to be extremely important for the average patient (Wechsler, Levine, Idelson, Rohman & Taylor, 1983; Valente, Sobal, Muncie, Levine & Antlitz, 1986). Although they report enquiring about smoking status and advising the large majority of patients to quit (Rosen, Logsdon & Demak, 1984; Fortmann, Sallis, Magnus & Farquhar, 1985), this is not borne out by observer studies (Boulton & Williams, 1983; Sanson-Fisher, personal communication, 1986) or by patient report (Wallace, Brennan & Haines, 1987). However, it is clear that GPs are more likely to give advice to patients with tobacco-related conditions (Fortmann et al., 1985; Cummings, Giovino, Sciandra, Koenigsberg & Emont, 1987).

A number of surveys have pin-pointed specific barriers, as perceived by GPs, to giving routine advice to quit. First, most preventive consultations are reimbursed poorly, or not at all. The economic reality of general practice care is such that even the most
altruistic doctors cannot devote a great deal of time to activities for which they suffer an economic penalty (Relman, 1982). Related to this is the fact that the general practice encounter is structured for acute care and is a time limited event (Nutting, 1986). Apart from structural problems, GPs also cite as barriers to more active intervention, pessimism about their patients' ability to quit and the efficacy of available treatment, as well as lack of training in behavioural techniques and back-up materials (Wechsler et al., 1983; Orleans, George, Houpt & Brodie, 1985; Ford & Ford, 1983).

Given these considerations, it is unlikely that a substantial proportion of doctors would choose an intensive or time consuming intervention, or an approach that required them to administer behavioural techniques. In summary, a minimal intervention would be more suited to the constraints of general practice, particularly one that took account of the types of patients to whom GPs are more likely to give advice.

During 1986, the Health Promotion Branch developed a minimal intervention programme where the GP was instructed to relate, where possible, the patients' presenting condition with their smoking behaviour (Health Promotion Branch, 1987). Specific handout information clarifying the risk associated with smoking and the benefits of quitting were provided for the following conditions: high blood pressure, cardiovascular illness, chronic obstructive lung diseases, acute respiratory infections and consultations for pregnancy, the contraceptive pill and respiratory infections in

81.
young children. These presenting conditions accounted for a large proportion of patient consultations, so that a substantial smoking population was still being accessed.

Essentially, the programme is targeted at patients most likely to respond to quit smoking advice. This is a more efficient use of a GP's time for smoking cessation purposes than counselling every smoking patient to quit. As a consideration of the barriers to giving advice has shown, this would not be a realistic objective for general practice.

The evaluation of the programme is now nearing completion. Fourty-five GPs who volunteered for participation in the trial were randomly assigned to treatment and control conditions. Control doctors were instructed to give whatever smoking cessation advice (if any) they usually gave, while intervention doctors were briefed to use the programme materials. A design where patients were randomised to either an intervention or control condition would have been preferable, but was not acceptable to the medical association who recruited the GPs to the trial. A threat to internal validity therefore exists due to the possibility of intervention GPs being qualitatively different from control GPs, although an attempt was made to minimise this by randomising the GPs.

Patients of these doctors were recruited to the trial by completion of a health status questionnaire in the general practices' waiting rooms during the three week baseline period. On the questionnaire, patients gave their name, address and phone number and were advised
that some would be asked to complete further questionnaires that would be posted to their home. This methodology has previously been found to be acceptable to both GPs and patients (Sanson-Fisher, personal communication, 1986). After completing the questionnaire, patients were duly called in to the doctor's room for their consultation, where, in the intervention condition, patients presenting with any of the specific conditions for which the programme was tailored, were given the intervention. At the baseline period and at subsequent follow-up periods, patients were unaware that smoking was the main behaviour of interest, as all questionnaires contained questions relating to a variety of health issues and behaviours. As an objective measure of the prevalence and comprehensiveness of GP's advice to quit smoking, patients were asked at the first follow-up whether their GP had recently advised them to modify any of a number of health behaviours, including smoking.

5.8. Concluding remarks

This chapter has examined the development of resources for GPs to assist patients to quit smoking. Contrary to an early attempt to develop a programme, recent evidence would suggest that the limited time and training of GPs dictates that a minimal intervention is the most appropriate strategy for encouraging adoption of routine advice in a substantial number of general practices. Furthermore, these constraints support the concept of an intervention that targets a sub-set of patients most likely to respond to advice to quit.
CHAPTER 6: AN INVESTIGATION OF RELAPSE CRISIS EXPERIENCED BY EX-SMOKERS USING A TELEPHONE 'STAY QUIT LINE'
6.1. Introduction

The use of mass media and general practitioner-mediated programmes, as previously discussed, offer the potential to motivate large numbers of smokers to quit. As such, from a public health perspective, they are the preferred avenues for generating a reduction in population smoking prevalence. However, the disadvantage of these approaches is that, in practical terms, they are able to offer only limited support to smokers in the maintenance of cessation - a problem that has persistently plagued all levels of intervention (Berstein, 1969; Bernstein & McAlister, 1976; Lichtenstein, 1982).

Despite the fact that these are considered by smokers to be acceptable channels for smoking cessation advice (Schwartz & Dubitsky, 1968; Gallup, 1974), structural and economic barriers prevent personalised, relevant advice to tackle the difficulties people commonly experience in trying to quit. Furthermore, the facility for periodic follow-up or reinforcement for smoking changes is limited.

Efforts to develop initiatives to maintain smoking cessation are required that are not only acceptable to smokers, but are practical and have the potential to access the majority of smokers. The need to provide maintenance services on a community-wide scale was also one that was well recognised by the Health Promotion Branch.

The scheduling of another exposure of the mass media to encourage
people to quit smoking for late 1984 led the Branch to consider strategies which would support those trying to give up smoking. However, at the same time, it was recognised that there was a need to find out more about the situations in which people relapse, and the factors making relapse more likely.

With these thoughts in mind, it was decided to set up and pilot a 'Stay Quit' telephone line, which would be able to give advice to people with reference to the particular problems they were experiencing in trying to remain ex-smokers. At the same time, the service could be used to collect information on the situation(s) the person had encountered that had made it difficult to refrain from smoking. Within this project, my responsibilities were to set up and test the service for a one month period. I also had to determine what information should be collected from the callers and was responsible for analysing the data.

This chapter reviews the rationale for the development of such a service and then describes the service in detail. Next, the theoretical background guiding the research component of the project is outlined and specific hypotheses are drawn. Finally, the data collected from interviewing the telephone callers is presented, and conclusions discussed.

6.2. Rationale for the telephone 'Stay Quit Line'

The development of telephone support services for ex-smokers rests on the premise that alternatives to traditional clinical treatment
are required for the majority of individuals who prefer to quit on their own, and who may neither seek, nor need, time-consuming and costly clinic-based treatment. Further, since there is a scarcity of programmes aimed at helping self-quitters maintain abstinence, the opportunity to hear supportive non-smoking related messages when the ex-smoker most requires them represents a simple, but useful tool for enhancing maintenance.

Support for this contention comes from a study by Dubren (1977), who provided half the participants in a televised smoking cessation programme the opportunity to call for daily supportive phone messages. At a one month follow-up, those who had the opportunity to call reported significantly greater abstinence than subjects not given the opportunity.

One practical concern is whether the demand for such a service would be great enough to warrant its long term implementation. Shipley (1981), in a pilot investigation, found that very few calls were received when a telephone support service was offered to participants following a smoking cessation clinic. In contrast, Ossip-Klein, Shapiro & Stiggins (1984) generated approximately 1000 calls per month to a 'Freedom Line' from ex-smokers over an eight month period. In examining the effectiveness of a number of noncommercial promotional strategies, they found that media promotion produced the greatest number of calls. They concluded that the critical factor in achieving and maintaining high utilisation appeared to be vigorous ongoing promotion of the service, particularly through media sources.
Experience in Australia also points to media promotion as an important factor in utilisation rates. Recorded telephone messages in Western Australian media based stop smoking programmes were used much more frequently during periods where media promotion of the service was initiated (Brown, personal communication, 1984).

6.3. Description of the 'Stay Quit Line' service

The Stay Quit Line was originally planned to be part of the Health Promotion Branch's mass-media based smoking cessation programme (called 'Quit. For Life'). Following the experience gained from other telephone services (Ossip-Klein et al., 1984; Brown, personal communication, 1984), anti-smoking television commercials were to be tagged with the phone number of the Stay Quit Line. However, organisational and political pressures forced the abandonment of the television and radio commercials and promotion of the Stay Quit Line was restricted to specific radio announcements, newspaper advertisements and posters. The commencement of the project received radio and newspaper news coverage and further promotion was achieved throughout the month by radio and newspaper advertisements (Appendix 5). In addition, posters were displayed in hospital waiting rooms, and tea rooms in places of work around the city centre.

Ex-smokers were encouraged to ring the Stay Quit Line if they felt very close to smoking (a 'relapse crisis'), irrespective of whether they actually smoked in that situation. Counselors trained to man the phone lines disseminated information and strategies to deal with
the most common relapse situations, and provided callers with a battery of other non situation-specific strategies for staying off smoking. Before the counsellors gave information or advice to the callers on techniques to help them cope with the relapse crisis, they sought information, using a structured questionnaire, on smoking history, characteristics of the relapse situation and what they had already tried to do to avoid smoking (see Appendix 6). The responses to these questions allowed counsellors to tailor their advice to the specific needs of the callers, and the information collected formed the basis of the research component of the study.

The Stay Quit Line was set up as a 24 hour telephone service available in metropolitan Adelaide during October, 1984. The service was situated within the Lifeline Counselling Centre in Adelaide and was staffed by experienced counselors. This arrangement was undertaken in return for a small donation, a represented the most inexpensive way of providing the service. The Lifeline Centre provides personal telephone counseling 24 hours a day for those with personal, health, social and financial problems. It employs over 150 counselors who are rostered on a weekly basis, and who have gone through a strict selection process and an intensive training course. Although Lifeline played a key role in the operation of the service, this was not promoted widely, as it was thought this could act as a barrier to people who wanted to ring for simple advice to help them stay off smoking.

The Stay Quit Line was given a separate telephone number from the
usual Lifeline number. In a two hour training session, some of the techniques and difficulties of quitting smoking were explained to the counselors and they were each provided with a reference manual. The manual outlined techniques for staying off cigarettes, information concerning withdrawal symptoms, and health hazards of smoking, as well as answers to the most common questions about quitting smoking (See Appendix 7). The counsellors were also instructed on how to complete the questionnaire.

6.4. Theoretical background of the research component

Apart from testing the viability of providing a telephone support service to ex-smokers, the Stay Quit Line enabled the collection of information from callers about the characteristics of situations where maintenance of non-smoking is difficult. In the last decade, the work of Alan Marlatt and his colleagues has come to the forefront of research concerned with the maintenance of smoking cessation (Marlatt & Gordon, 1979; Cummings, Gordon & Marlatt, 1980; Marlatt & George, 1984; Marlatt, 1985). Marlatt's work is based on extensive experience in modifying a range of behaviours with 'addictive' components, such as alcoholism, smoking and overeating (obesity) and focusses on the social, environmental, emotional and cognitive determinants of relapse, laying emphasis on the role of anticipating and coping with situations where relapse is likely.

As a background to the research component of the study, this section of the chapter will look at Marlatt's work and his model of relapse prevention, and attempt to examine in more detail the emotional and
situational influences that may trigger smoking relapse, and the factors that influence the performance of coping behaviour. By way of introduction, some of the most important underlying assumptions of Marlatt's model will be examined and alternative models of addiction will be presented. It is hoped that this will serve to explain how Marlatt's model differs from models that have previously provided a framework for treating addictive behaviours such as smoking.

6.4.1. Commonalities underlying addictive behaviours

Recent theoretical developments which have implications for the modification of smoking behaviour rest on the assumption that there are commonalities underlying "addictive" behaviours such as smoking, alcoholism, overeating and drug dependence (Marlatt, 1985; Brownell, 1982).

Behaviour therapists have generally concentrated their efforts on alcoholism, smoking and overeating (obesity) (Brownell, 1982). There have been some attempts to explain similarities among these behaviours and to show why they should be known as 'addictive disorders'. For example, William Miller (1980) notes that these disorders share four characteristics, namely, that short-term indulgence results in long-term difficulty, no treatment has shown superior efficacy in any area, there is no simple model of etiology and the fact that the behaviour adversely affects health. Another view advocates, in addition, that these disorders are similar because they share a tendency to trigger each other, and an
interrelationship when changes are made (Peter Miller, 1980). Thus, it is commonly found that heavy drinking and heavy smoking are closely correlated (Walton, 1972), and there is consistent evidence that individuals who stop smoking are likely to gain weight. Furthermore, there are striking similarities in the rate and pattern of relapse across these behaviours.

Hunt, Barnett & Branch (1971) documented the temporal pattern of relapse (defined by these authors as any drug use) following completion of treatment programmes for smokers, alcoholics and heroin addicts (Figure 2). These relapse curves are based on an averaging of relapse data drawn from separate intervention studies for each substance. The similarity of the relapse curves is clear, and it can be seen that about two thirds of all relapses occurred within the first 3 months following treatment.

![Figure 2: Relapse rates for smokers, alcoholics, and heroin addicts](image)

(Source: Hunt, Barnett & Branch, 1971).
As pointed out by researchers at the Addiction Research Unit at the Maudsley Hospital in London (Litman, Eiser & Taylor, 1979; Sutton, 1979) drawing conclusions about the nature of the relapse process from these curves is compounded by a number of factors. Firstly, the curves are based on group averages and do not necessarily represent the relapse process over time for any given individual. Secondly, the curves are calculated on the basis of the percentage of abstainers remaining at intervals over a given period of time, so that individuals who engage in any substance use and regain abstinence are assumed in the calculation to be continuing substance use. Thirdly, by their very nature, cumulative data will always take the form of a downward sloping, negatively accelerating curve, and finally, given individual differences in the probability or remaining abstinent for a period of time, the probability of survival for the group as a whole will increase over time as a result of a selection process.

Marlatt (1985) points out that many of these problems can be overcome by the use of a statistical procedure known as life table analysis, which uses the 'relapse rate' statistic. Relapse rate is assessed over a given period of time (e.g. a three month period) as the proportion of people who were 'eligible' for relapse at the beginning of the same time period. Anyone who relapsed prior to this period is not included in the calculation. Marlatt (1985) asserts that this technique confirms that about two-thirds of all initial lapses (first use of a substance following cessation) occur within three months across various addictive behaviours (Goldstein, Marlatt, Peterson & Lutton, 1988).
A compelling interpretation of these similar temporal patterns and rates of relapse across behaviours is that there may be common cognitive, affective and behavioural components associated with the initial lapse, regardless of the substance involved. Another interpretation, compatible with the first, is that these substances are equivalent in some way in terms of their physiologically addictive potential.

The first interpretation is the cornerstone of the relapse prevention model, advocated by Marlatt and his colleagues (Marlatt & Gordon, 1979; Cummings et al., 1980). As the model has developed, it has also encompassed the possibility that physiological factors contribute to relapse (Brownell, Marlatt, Lichtenstein & Wilson, 1985; Marlatt, 1985). The relapse prevention approach was initially developed as a maintenance programme for use in the treatment of addiction problems such as alcohol and other drug dependencies (Marlatt & Gordon, 1979). However, applications of the model have extended beyond the traditional categories of drug addiction to encompass any compulsive habit pattern in which the individual seeks a state of immediate gratification (e.g. overeating, binge eating, compulsive gambling, certain sexual disorders such as exhibitionism, pecophilic and fetishism, as well as impulsive aggressive acts, including child abuse and rape) (Marlatt, 1985).

There are two main characteristics of the relapse prevention approach. Firstly, the model views relapse as a process, rather than an outcome, focussing on the events and situations that trigger relapse. Secondly, there is an emphasis on coping skills, since in
order for relapse to occur, the situational cues and the craving they engender must overwhelm the individual's capacity to cope or resist.

In order to examine the potential value of the relapse prevention approach, a comparison of the major theoretical models of addiction and how they conceptualise relapse will now be provided.

6.4.2. Theoretical models of addiction

There are at least four major models that have been developed in an attempt to explain the etiology of addiction. Three of these are the moral model, the disease model and the addictive behaviour model (Marlatt and Gordon, 1979). Brickman, Rabinowitz, Karuza, Coates, Cohn & Kidder (1982), in an excellent review and comparison of these models, identify another - the enlightenment model. The key differences between each model are summarised in Table 3.

<table>
<thead>
<tr>
<th>RESPONSIBLE FOR PROBLEM</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>RESPONSIBLE FOR SOLUTION (CHANGE)</td>
<td>YES</td>
<td>Moral model</td>
</tr>
<tr>
<td></td>
<td>NO</td>
<td>Enlightenment model</td>
</tr>
</tbody>
</table>

TABLE 3: Summary of Brickman et al's (1982) conceptualisation of models of addiction
Brickman et al. (1982) describe the moral model as one where people are attributed responsibility for both creating and solving their problems. Thus, alcohol or drug addiction were viewed as signs of a weak character, and drinkers or addicts were required to exercise willpower in order to return to respectability. Cummings et al (1981) note that this model prevailed throughout the 19th century, and was an active force in the temperance movement in the United States.

This model gradually gave way to the disease model, where, in Brickman et al.'s (1982) terms, people are held responsible for neither the origin of, nor the solution to, their problem behaviours. Addiction to alcohol or cigarettes is viewed as a disease, implying that the substance is addictive through a physiological mechanism, and that an individual has no control over the behaviour. One disadvantage of this approach is that it fosters dependency on the source of assistance to control the problem behaviour. Furthermore, relapse is interpreted as a symptom of re-emerging disease. If an individual has accepted the belief that it is impossible to control a particular problem behaviour, then it is likely that even a single transgression will precipitate a full blown relapse (Marlatt, 1985).

A third model, the enlightenment model, proposes that individuals are responsible for their problem behaviours, but are not responsible for changing them (Brickman et al., 1982). Individuals are therefore required to accept a negative image of themselves and, in order to change, to submit to agents of social control.
Alcoholics Anonymous (A.A.) uses this model – members are required to take responsibility for their past history of drinking, and to place great reliance on the help of God and other A.A. members to control their drinking. This model shares the disadvantage of the disease model, in that it withdraws a sense of personal control from the individual over his/her behaviour, so that a single slip may precipitate a total, uncontrolled relapse. The belief that an individual has no personal control over problem behaviours is embodied in the A.A. slogan that one is always "one drink away from a drunk".

The fourth, and most recent, model is the compensatory model, described by Marlatt (1985) as the addictive behaviour model. Here, the assumption is that an individual is not responsible for a problem behaviour, but is responsible for behaviour change. This outlook is best embodied in the Reverend Jesse Jackson's often repeated assertion to black audiences that "you are not responsible for being down, but you are responsible for getting up". Brickman et al.'s (1982) preference for the compensatory model rests on their conviction that it justifies the act of helping (since individuals are not responsible for their problem), but still leaves individuals with an active sense of control over their lives (since they are held responsible for using this help to find solutions).

The relapse prevention approach embodies the principles of the addictive behaviour or compensatory model. Derived from principles of social learning theory, cognitive psychology and experimental social psychology, this approach views addictive behaviours as
overlearned, maladaptive habit patterns (Marlatt & Gordon, 1979), usually followed by some form of immediate gratification. The role of expectation or anticipation of the desired effects of the behaviour are considered central factors in its persistence. Marlatt (1985) writes that behavioural theorists define addiction as "a powerful habit pattern, an acquired vicious cycle of self-destructive behaviour that is locked in by the collective effects of classical conditioning ... and operant reinforcement ...'(p.11).

The process of changing such habits involves active participation in a self-management programme, where the individual acquires new skills and cognitive strategies and transforms the habit into a behaviour that is "under the regulation of higher mental processes involving awareness and responsible decision-making" (Marlatt, 1985).

In the relapse prevention approach, relapse is viewed as a transitional process, a series of events that may or may not be followed by a return to baseline levels of the addictive behaviour. Rather than adopting the view in which any substance use following a period of abstinence is seen as failure (enlightenment model) or return of a disease state (disease model), the relapse prevention approach views the occurrence of a lapse as a fork in the road, with one path returning to the former problem level, and the other continuing in the direction of positive change.

As Marlatt (1985) points out, many new questions arise when one adopts this alternative perspective of relapse. Of particular
interest are the situational events that may serve as precipitating triggers for a lapse, and the conditions under which a lapse is prevented from becoming a full-blown relapse. A more detailed overview of Marlatt's model of the relapse process will help explain these concepts.

6.4.3. Marlatt's model of the relapse process

According to Marlatt, during the period following cessation where abstinence is maintained, an individual experiences a sense of control over the target behaviour (e.g. smoking). This sense of control increases with the period of time over which abstinence is maintained. At some time, the individual will encounter a high risk situation, defined broadly as any situation which poses a threat to the individual's sense of control and increases the risk of potential relapse. In the relapse prevention model, high risk situations have been studied intensively. Marlatt and Gordon (1979) analysed the emotional states and situational factors that immediately preceded a relapse in smokers, alcoholics and heroin addicts (Table 4). In their classification system, Marlatt and Gordon distinguished between determinants which are primarily associated with intrapersonal factors and/or reactions to nonpersonal environmental events (intrapersonal determinants), and determinants in which reference is made to the influence of other individuals as part of the precipitating event (interpersonal determinants). 80 per cent of all smoking relapses were accounted for by intrapersonal negative emotional states, social pressure and interpersonal conflict.
SITUATION                        | ALCOHOLICS | SMOKERS | ADDICTS | ALL SUBJECTS |
--------------------------------|------------|---------|---------|--------------|
Intrapersonal Determinants      | 61%        | 57%     | 53%     | 58%          |
Negative Emotional States       | 38%        | 43%     | 28%     | 37%          |
Negative Physical States        | 3%         | -       | 9%      | 4%           |
Positive Emotional States       | -          | 8%      | 16%     | 6%           |
Testing Personal Control        | 9%         | -       | -       | 4%           |
Urge and Temptations            | 11%        | 6%      | -       | 7%           |
Interpersonal Determinants      | 39%        | 43%     | 47%     | 42%          |
Interpersonal Conflict          | 18%        | 12%     | 13%     | 15%          |
Social Pressure                 | 18%        | 25%     | 34%     | 24%          |
Positive Emotional States       | 3%         | 6%      | -       | 3%           |

|TABLE 4: Analysis of relapse situations with alcoholics, smokers and heroin addicts (Source: Marlatt & Gordon, 1979)|
If the smoker is able to elicit an appropriate non-smoking coping response in a high risk situation, the sense of personal control is regained and the expectation of being able to cope should generalise to future high risk situations. As discussed in Chapter 5, Bandura (1977) has coined the term 'self efficacy' to describe this expectation of self control, as differentiated from outcome-expectation.

In a situation where a coping response is not forthcoming, Marlatt predicts a decrease in self-efficacy and a tendency to "give in". The temptation to smoke will grow stronger if the person holds positive outcome expectancies for the effects of smoking (e.g. the belief that smoking helps a person relax). The feeling of being less able to exert control, coupled with positive outcome expectancies for the effects of the old habitual coping behaviour (smoking), greatly increase the probability that an initial lapse will occur.
Whether this first lapse is followed by total relapse depends to a large extent on the individual's perceptions of the 'cause' of the lapse and the reactions associated with its occurrence. Following the occurrence of a lapse, Marlatt postulates that a cognitive and affective reaction ensues which is termed the abstinence violation effect (AVE).

There are two primary components of the abstinence violation effect. First, there is a cognitive dissonance component (Festinger, 1964), in which the behavioural act of smoking the first cigarette is in direct conflict with the individual's self-image as an abstainer. This internal conflict acts as a source of motivation to engage in behaviours or cognitions that will reduce the dissonance. Continuation of smoking behaviour and cognitions such as "I can't quit smoking" can be seen to reduce the dissonance.

The second component of the AVE is a self-attribution effect where the person attributes the cause of the relapse to internal weakness and personal failure. Most abstinent smokers feel proud of their abstinence and responsible for their relapse. This self-attribution provides the individual with a subjective explanation for past inabilitys to remain abstinent, and an excuse for and prediction of continuing indulgence in smoking.

A final factor to be considered in the relapse process is the subjective effect of the cigarette as experienced by the user. Tobacco produces an initial state of physiological arousal (increased heart rate and other autonomic reactions) which is
subjectively experienced by the user as a pleasant or euphoric state. Furthermore, the increase in physiological arousal may be labelled by the user as a feeling of enhanced power or control (McClelland, Davis, Kalin & Wanner, 1972). Taken together, it can be seen that the smoking of a cigarette to counter the individual's prior feelings of decreased self-efficacy or personal powerlessness in the high risk situation is strongly reinforced. The cumulative effects of the AVE, coupled with the subjective effects of smoking after a period of abstinence, greatly increase the likelihood that the first slip will be followed by a return to habitual patterns of use within a relatively short period of time.

It can be seen that this model of relapse offers a number of points at which intervention is feasible and may prevent further migration through the process leading to continued smoking. Marlatt has outlined some of these points and potential interventions (Figure 3).

![Diagram](source: Marlatt & Gordon, 1979)
In this model, there is an emphasis on preparing an individual to anticipate and cope with high risk situations. Marlatt notes that in many of the relapse episodes studied, the individual was not expecting the high risk situation to occur and/or was ill-prepared to cope effectively with circumstances as they arose. In other cases, a chain of events in which individuals had inadvertently placed themselves had led to a high risk situation that was so tempting, it would virtually take a moral superman to resist. Marlatt reasons that if individuals can identify high risk situations, and anticipate their occurrence, they can then take steps either to avoid the situation or plan how they will cope with it.

Many other studies have examined characteristics of high risk situations, particularly negative affect and social pressure. Because the performance of coping is so crucial to successful negotiation of high risk situations, there has also been much work on the factors that promote and inhibit coping. In the following section, each of these areas will be examined in more detail.

6.4.4. Negative affect as a determinant of relapse

Studies have consistently suggested that negative affect plays a major role in relapse. Negative affect is described by Marlatt (1985) as a situation in which an individual is experiencing an unpleasant emotional state, mood or feeling, such as frustration, anger, anxiety, depression or boredom. Negative affect may be brought about by intrapersonal factors (occurring within the
individual and/or reactions to nonpersonal environmental events) or interpersonal factors (where other people are significantly involved e.g. arguments or interpersonal confrontations).

Marlatt and Gordon (1979) obtained detailed accounts of relapse episodes from a total of 137 individuals, all of whom were involved in treatment programmes for alcoholism, smoking, or heroin addiction. Data on smoking relapses were obtained from 35 college-age male and female ex-smokers who had participated in a smoking cessation programme. It was found that 55 per cent of relapse episodes were accounted for by negative affect situations: 43 per cent by intrapersonal negative emotional states, and 12 per cent by interpersonal conflict.

These results were confirmed in a study reported by Cummings et al (1980). Relapse episodes taken from eight separate abstinence-oriented treatment programmes with a total of 327 subjects were content analysed from open-ended questions regarding the reasons for relapse. Five addictive behaviours were represented: drinking, smoking, opiate use, compulsive gambling and uncontrolled eating. The smoking group consisted of 64 male and female smokers (mean age, 30) from two outpatient programmes. Relapse was defined as any cigarette smoked following a minimum of three days of total abstinence. The study revealed that 52 per cent of all smoking relapses were accounted for by negative affect situations: 37 per cent by intrapersonal negative emotional states, and 15 per cent by interpersonal conflict.
Shiffman (1982) described relapse crises reported by 183 ex-smokers who called a telephone hotline service seeking help to stay off cigarette smoking. Relapse crises were defined as situations where an urge to smoke was experienced, irrespective of whether the urge led to smoking. Two-thirds of the sample were women, and 60 per cent had participated in a formal smoking cessation programme. The sample was restricted to those who has smoked at least ten cigarettes per day and who reported having abstained from smoking for at least two days. Shiffman found that most of the relapse crises (71.2 per cent) occurred in the presence of negative effect, with the most common mood state being anxiety, followed by anger/frustration and depression. 55 per cent of relapse crises were deemed by the callers to be attributable to negative affect or severe stress.

In summary, negative affect has consistently been found to be major antecedent of relapse crises and relapses. It is important to note that the relapse situations identified by these researchers were determined without regard to the length of time an individual had been abstinent from smoking. It may well be the case that the likelihood of experiencing certain relapse situations changes according to the length of time abstinent. Such changes over time are important to document, since individuals would be more able to anticipate and deal with these situations as they arose.

The work on nicotine withdrawal has identified negative affect as a prominent symptom of withdrawal and offers an important perspective in accounting for changes in the likelihood of experiencing negative affect following smoking cessation.
Early studies by Mausner (1970) and Friedman (1972) identified that increased irritability and hostility are commonly reported after cessation. In addition, several studies suggested that nicotine deprived smokers are more likely to respond with anxiety and irritability when stressed compared with nondeprived smokers (Frankenhaeuser, Myrsten, Post & Johansson, 1971; Myrsten, Post, Frankenhauser & Johansson, 1972). More recently, Pomerleau, Turk & Fertig (1984) demonstrated that minimally deprived smokers exhibited more anxiety while attempting to solve unsolvable anagrams, compared with nondeprived smokers.

Several studies have found that negative affect can be reduced by the administration of nicotine. In a double blind study of the first week following smoking cessation, subjects were given either nicotine or placebo gum (Hughes, Pickens, Krahn, Malin & Luknic, 1984). As measured by a rating list of withdrawal symptoms and the 'Profile of Mood States' questionnaire (McNair, Lorr & Droppleman, 1971), irritability, anxiety, difficulty concentrating, restlessness and impatience were all significantly relieved by the nicotine gum ($p < .05$). The effects of nicotine occurred immediately, persisted for the one week duration of the study, and were confirmed by observer ratings. In a similar study, Schneider & Jarvik (1984) found nicotine gum significantly to alleviate or prevent dysphoric states for five days following cessation compared with a placebo gum condition. Both of these studies reported negative mood states to be most intense for the first two or three days following cessation.

Another study specifically examined the occurrence of psychological
withdrawal symptoms including anxiety and restlessness over time (Shiffman & Jarvik, 1976; Shiffman, 1979). The occurrence and strength of negative affect was found to decrease in a clear fashion over the two weeks of the study, after the first 3 days of abstinence. Thus, the experience of negative affect appears most intense in the first few days following cessation but levels off by the second week of abstinence.

Based on these studies, it would seem reasonable to suggest that the likelihood of experiencing negative affect reduces over time, as the proportion of negative affect situations induced by physiological withdrawal diminishes. Compared with other types of relapse situations, one would therefore expect a greater proportion of relapses and relapse crises involving negative affect to occur early in abstinence when withdrawal from nicotine induces its most unpleasant affective manifestations.

Conceptualised diagramatically, Marlatt's work suggests the association depicted in Figure 4(a), where negative affect is considered to be one of a number of precipitating factors for relapse. The current discussion, depicted in Figure 4(b), focusses on nicotine withdrawal as one precipitating factor for negative affect. (This diagram is admittedly simplistic, as it would be expected that there would be interaction between the precipitating factors).
6.4.5. Social pressure as a determinant of relapse

Social pressure has also been found to be a major determinant of relapse. In their analysis of the determinants of relapse, Marlatt and Gordon (1979) attributed 25 per cent of smoking relapses to social pressure. In their classification system, social pressure encompassed both direct interpersonal coercion aimed at pressuring the abstainer to smoke, and indirect pressure, occurring as a result of simply being in the company of smokers. A subsequent study (Cummings et al., 1980) found 32 per cent of smoking relapses to be precipitated by social pressure.

Other studies suggest that social pressure may play an important role in the context of relapse.
role in relapse. In an analysis of 84 unassisted quitters, Lichtenstein, Antonuccio & Rainwater (1977) found, using Marlatt's coding scheme, that 48 per cent of relapse episodes were precipitated by social pressure. Furthermore, two-thirds of relapse episodes occurred when other smokers were present. Shiffman (1982), in the telephone hotline study, reported that other people were smoking in 32 per cent of relapse crises, and that one third of crises were precipitated by smoking-specific stimuli - usually the sight of another person smoking. In addition, when another smoker was present, 54 per cent of crises terminated in the smoking of at least one cigarette, compared with 32 per cent of crises in the absence of smokers.

These findings suggest not only that social pressure is a major antecedent of relapse crises, but that relapse crises occurring in the presence of social pressure are also more likely to induce smoking. As Shiffman (1982) points out, the presence of another smoker automatically provides for the availability of cigarettes and therefore the opportunity, as well as the stimulus, to smoke.

These results are consistent with a number of prospective studies that have examined the influence of other's smoking on long term maintenance of cessation. The presence of a non smoking spouse, for example, is related to successful long term non smoking maintenance (West, Graham, Swanson & Wilkinson, 1977; Tongas, Patterson & Goodkind, 1978). West et al. also report that at five year follow up, two thirds of quitters had spouses who they said supported their attempt to quit, compared with only one third of those who had
relapsed. Similarly, Stevens, Greene & Primavera (1982) found that a salient predictor of successful cessation after six months was the smoking behaviour of others in the household. Eisinger (1971) found in a prospective study that subjects who maintained smoking cessation named fewer smokers among their twenty closest friends, compared with those who relapsed. Thus, the importance of social influence is further indicated by findings that the presence of fewer non-smoking relatives and friends is related to success in achieving long-term smoking cessation.

6.4.6. Coping with relapse crises

In his analysis of relapse crises, Shiffman found few differences in the situations that precipitated relapse and those in which relapse was averted (Shiffman, 1982). Instead, ex-smoker's coping responses - their attempts to resist temptation and forestall relapse - were the best predictors of the outcome of a relapse crisis. Using data from the smoking cessation hotline, Shiffman (1984) found that 90 per cent of those who reported not performing a coping response in a crisis situation started smoking again. He concluded that situations in themselves do not cause relapse; rather, situations bring about strong temptations to smoke, with the occurrence of relapse being determined by coping behaviour.

In looking more closely at the effectiveness of coping, Shiffman found that the outcome of relapse crises was not related to the number of coping responses per se, nor was any specific type of coping response more effective than any other. He concluded that
the performance of coping helps maintain abstinence in the face of temptation to smoke, but the kind of coping response used may be much less important. This suggests that training clients in a broad repertoire of coping responses and the skill to choose among them may be less important than inculcating a readiness to cope when the situation arises (Shiffman, 1984).

Perhaps the most obvious factor in determining the performance of coping is the recognition that the risk of relapse is high. An individual must be able to anticipate relapse crises in order to select, prepare and elicit an appropriate coping response. As Shiffman, Read, Maltese, Rapkin & Jarvik (1985) report, many ex-smokers are lost at this first juncture - "before I even knew I wanted one, I was smoking".

Factors that make an individual less ready to cope, or inhibit coping, are therefore of interest. Shiffman (1982) found that when alcohol had been consumed, 61 per cent of crises led to relapse, as opposed to 33 per cent in the absence of alcohol. Further analysis suggested that alcohol may have been associated with relapse primarily because of its effect on coping. It was found that alcohol consumption affects both the frequency and efficacy of coping responses, with behavioural coping (e.g. leaving situation, changing activity) particularly subject to its disruptive effects. Shiffman & Jarvik (1984) suggest that alcohol may diminish both (or either) the motivation and the capacity to cope in a relapse crisis. Alternatively, alcohol intoxication may impair the recollection of coping.
Shiffman & Jarvik (1984) also found that ex-smokers were less likely to cope with relapse crises that occurred later in abstinence, concluding that the performance of coping decays with time. However, cognitive coping (e.g. reminding oneself of health hazards of smoking) decayed less than behavioural coping, and was therefore more predominant later in abstinence. Shiffman postulated that the reduced probability of coping could be due to the decreased frequency of relapse crises later in abstinence. With less opportunity to practice coping responses, the ex-smoker who has been abstinent for a good period of time may experience decreased motivation and vigilance, or may forget coping responses, thus making coping less likely. Furthermore, relapse crises may be more difficult to anticipate if the frequency is low.

6.4.7. Specific study hypotheses of interest

The foregoing discussion has provided a background to Marlatt's model of the relapse process, and has highlighted recent work on the role of high risk situations (particularly negative affect and social pressure) and the importance of coping behaviour. Apart from providing a trial service to ex-smokers, the Stay Quit Line enabled the collection of data from callers which could be used to confirm and extend recent findings. From this background, a number of hypotheses were tested by administration of a questionnaire to the ex-smokers who called the Stay Quit Line (see Appendix 6). Specifically, these hypotheses were:

(1) Negative emotional states and social pressure have been
consistently found to be the major antecedents of relapse crises (Marlatt & Gordon, 1979; Lichtenstein et al., 1977; Shiffman, 1982). It was expected that this finding would be replicated.

(2) There is consistent evidence that negative affect is a prominent symptom of withdrawal from nicotine. Following the work of Shiffman and Jarvik (1976) on the diminution of withdrawal symptoms following cessation, it was hypothesized that a greater proportion of relapse crises early in abstinence will be associated with negative affect, compared with those occurring later in abstinence.

(3) Following the work of Shiffman (1982; 1984) it was expected that those who perform any coping response would be less likely to smoke, compared with those who did not perform a coping response.

(4) As suggested in the Shiffman & Jarvik (1984) study, it was expected that the longer the amount of time abstinent, the lower the probability of a coping response being elicited. Furthermore, the longer the amount of time abstinent, the more likely it would be that cognitive coping would be used rather than behavioural coping.

(5) Alcohol has consistently been associated with a significant proportion of relapses (Shiffman, 1982). It was expected that those who have consumed alcohol would perform less coping than non-alcohol consumers. Alcohol would be expected to exert its
disruptive effects mainly on behavioural coping. Thus, those who have consumed alcohol would be expected to perform much the same amount of cognitive coping as non alcohol consumers, but would perform significantly less behavioural coping.

6.5. Results

6.5.1. Characteristics of callers to the Stay Quit Line

In all, the Stay Quit Line received 93 calls during the month of its operation. Of these calls, 16 were from smokers wanting information to help them quit smoking and these were referred to a health counselling and information centre in Adelaide. Of the remaining calls, 6 were from people who rang out of curiosity and did not want information, while the remaining 71 were from ex-smokers. Of these, 3 either did not want to answer questions or gave information which was not recorded on the questionnaire. Thus, 68 calls were received from ex-smokers for which questionnaires were completed.

Ex-smokers who had a questionnaire completed for them were also asked how they had found out about the Stay Quit Line. 59 (86.8 per cent) indicated that they had heard about the service from radio promotion, with a smaller number having seen a newspaper article or advertisement (11.8 per cent) or poster in a staff room at work (1.5 per cent). Thus, the promotional medium most effective in informing people about the Stay Quit Line was clearly radio.

With respect to the ex-smoker sample obtained, most calls were
received within two hours of the ex-smoker experiencing a relapse crisis in which they were very close to smoking (75 per cent), with 63 (93 per cent) calling on the day or the day after the relapse crisis was experienced. Thus, the Stay Quit Line was successful in obtaining reports of relapse crises soon after they had occurred.

57.2 per cent of ex-smokers were male, and the mean age was 36.1 years (s.d. = 13.7). Subjects had smoked an average of 24.0 cigarettes per day (s.d. = 13.7), and had been abstinent for periods ranging from 1 day to 11 months. On average, abstinence had been maintained for 42.5 days (s.d. = 62.9); the median number of days abstinent was 10.0. The sample was thus substantially composed of relapse crises occurring early in abstinence. Eleven callers (16 per cent) had already experienced a lapse, in that they had smoked even part of a cigarette during or after the relapse crisis they were describing. Of these, eight had relapsed before ten days of abstinence had passed, and the remaining three had relapsed comparatively late in abstinence, after the eighty-fourth day.

A majority of subjects (79.1 per cent) reported that they had quit smoking without formal assistance. A further 7.5 per cent had quit under the instruction of their doctor, and the remaining 13.4 per cent had made use of a stop smoking service, device or kit.

6.5.2. Characteristics of relapse crises

It can be seen from Table 5 that, in the fifty-eight subjects who identified a mood state, just over two-thirds of relapse crises were
preceded by a feeling of negative affect. Subjects most commonly described themselves as being anxious or bored, with smaller numbers reporting depression, anger or frustration. Of the remaining one-third of subjects who experienced positive affect prior to the crisis, most described feelings of happiness, relaxation or freedom.

<table>
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<th>Affect</th>
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<th>(per cent)</th>
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<tr>
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<td>(20.7)</td>
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<tr>
<td>angry, frustrated</td>
<td>6</td>
<td>(10.3)</td>
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<td>(13.8)</td>
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<td>bored</td>
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<td>(6.8)</td>
</tr>
<tr>
<td>Total positive</td>
<td>19</td>
<td>(32.8)</td>
</tr>
</tbody>
</table>

Missing cases = 10

TABLE 5: Affect preceding relapse crises.

Thirty (44.1 per cent) subjects reported that they had been influenced in some way by other individuals. Table 6 shows that of the 29 subjects describing the type of interpersonal influence, the most common was seeing other people smoking (44.8 per cent) or being offered a cigarette (24.1 per cent).
The information regarding affect and type of interpersonal influence is combined in Table 7. The "social pressure" category of Table 7 includes the Table 6 categories of "urged to smoke" and "saw others smoke", while the "interpersonal negative" category of Table 7 includes "interpersonal conflict" and "interpersonal other negative" from Table 6. It is apparent from Table 7 that the most common antecedents of relapse crises are intrapersonal negative affect (39.3 per cent), social pressure (32.8 per cent) and intrapersonal positive affect (14.8 per cent).

Thus, the expectation that negative affect and social pressure would be most commonly associated with relapse crises was supported.
6.5.2. Characteristics of relapse crises over time

A crosstabulation of time abstinent by whether or not negative affect was experienced is contained in Appendix 8. It can be seen that there is some variability in the likelihood of negative affect being experienced over time.

For purposes of evaluating differences in the characteristics of relapse crises over time, time abstinent was divided into four groups: 1 to 7 days, representing the sharpest decline in the relapse curve (Hunt et al., 1971) and the period during which nicotine withdrawal is the strongest (Shiffman & Jarvik, 1976); 8 to 28 days, during which withdrawal from nicotine gradually abates (Cummings, Jaen & Giovino, 1985); 29 to 90 days, representing a continued steady decline in the relapse curve with no involvement of nicotine withdrawal, and; more than 90 days, representing a levelling off of the relapse curve.

The estimate of association between relapse crisis characteristics and time abstinent required that the data be further collapsed into two categories – 1 to 7 days, and 8 days or more – and was tested using a Chi-square test, or where expected cell frequencies were less than five, a Fisher's exact test.

Table 8(a) presents the data grouped in periods up to 90 days and over. It is apparent that negative affect is most likely to be experienced in the first week of abstinence or later in abstinence (after three months). When Table 8(a) is collapsed further, as in
Table 8(b) to allow statistical comparison, 76 per cent of crises in the first seven days of abstinence were associated with negative affect, compared with 60 per cent of crises occurring after eight days of abstinence. However, this difference, although in the predicted direction, did not achieve statistical significance.

<table>
<thead>
<tr>
<th>Time abstinent (days)</th>
<th>1-7</th>
<th>8-28</th>
<th>29-90</th>
<th>91 or more</th>
</tr>
</thead>
<tbody>
<tr>
<td>negative affect</td>
<td>19 (76.0)</td>
<td>7 (53.6)</td>
<td>6 (54.5)</td>
<td>7 (77.8)</td>
</tr>
<tr>
<td>no negative affect</td>
<td>6</td>
<td>6</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>missing data = 10</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(Numbers in parentheses refer to percentage of subjects who experienced negative affect)

TABLE 8a: Length of time abstinent by presence of negative affect.

<table>
<thead>
<tr>
<th>Time abstinent (days)</th>
<th>1-7</th>
<th>8 or more</th>
</tr>
</thead>
<tbody>
<tr>
<td>negative affect</td>
<td>19 (76.0)</td>
<td>20 (60.0)</td>
</tr>
<tr>
<td>no negative affect</td>
<td>6</td>
<td>13</td>
</tr>
<tr>
<td>missing cases = 10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chi-square = .911, (df=1), p=.34</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(Numbers in parentheses refer to percentage of subjects who experienced negative affect)

TABLE 8b: Length of time abstinent (combined), by presence of negative affect.

The data were further examined according to the number of cigarettes smoked each day. A recent study by Cummings, Giovino, Jaen & Emrich (1985) has shown that withdrawal symptoms after cessation, particularly reports of irritability, were much more
common among heavy smokers, compared with light smokers. Tables 9(a) and 10(a) show a trend for ex-smokers who were heavy smokers (more than or equal to the median value of 25 cigarettes per day)

<table>
<thead>
<tr>
<th>Time abstinent (days)</th>
<th>1-7</th>
<th>8-28</th>
<th>29-90</th>
<th>91 or more</th>
</tr>
</thead>
<tbody>
<tr>
<td>negative affect</td>
<td>12</td>
<td>3</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>no negative affect</td>
<td>2</td>
<td>3</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>missing cases = 0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(numbers in parentheses refer to percentage of subjects who experienced negative affect)

TABLE 9a: Length of time abstinent, by presence of negative affect (heavy smokers - 25 cigarettes or more per day)

<table>
<thead>
<tr>
<th>Time abstinent (days)</th>
<th>1-7</th>
<th>8 or more</th>
</tr>
</thead>
<tbody>
<tr>
<td>negative affect</td>
<td>12</td>
<td>10</td>
</tr>
<tr>
<td>no negative affect</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>missing cases = 0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Fisher's exact test, p=.15
(numbers in parentheses refer to percentage of subjects who experienced negative affect)

TABLE 9b: Length of time abstinent (combined), by presence of negative affect (heavy smokers - 25 cigarettes or more per day)

to be more likely to experience crises associated with negative affect very early, and again, much later in abstinence. By comparison, the likelihood of light smokers (less than 25 cigarettes per day) experiencing negative affect remains much the same over time. However, when each of these tables are further
collapsed, no significant differences were detected (Tables 9(b) and 10(b)), although the data are in the direction predicted by the work of Cummings et al. (1985).

<table>
<thead>
<tr>
<th>Time abstenent (days)</th>
<th>1-7</th>
<th>8-28</th>
<th>29-90</th>
<th>91 or more</th>
</tr>
</thead>
<tbody>
<tr>
<td>negative affect</td>
<td>7 (63.6)</td>
<td>4 (57.1)</td>
<td>3 (60.0)</td>
<td>3 (60.0)</td>
</tr>
<tr>
<td>no negative affect</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

missing cases = 0  
(numbers in parentheses refer to percentage of subjects who experienced negative affect)

TABLE 10a: Length of time abstinent, by presence of negative affect (light smokers - less than 25 cigarettes per day)

<table>
<thead>
<tr>
<th>Time abstenent (days)</th>
<th>1-7</th>
<th>8 or more</th>
</tr>
</thead>
<tbody>
<tr>
<td>negative affect</td>
<td>7 (63.6)</td>
<td>10 (58.8)</td>
</tr>
<tr>
<td>no negative affect</td>
<td>4</td>
<td>7</td>
</tr>
</tbody>
</table>

missing cases = 0  
Fisher's exact test, P=.56  
(numbers in parentheses refer to percentage of subjects who experienced negative affect)

TABLE 10b: Length of time abstinent (combined), by presence of negative affect (light smokers - less than 25 cigarettes per day).

Further, when the data for heavy and light smokers are examined for the first seven days of abstinence, there is no significant difference in the proportion experiencing negative affect, although again, the difference is in the expected direction (Table 11).
The type of negative affect experienced by ex-smokers at different lengths of time abstinent was also investigated. The most frequently identified affective states related to withdrawal from cigarette smoking are irritability and hostility (Hutchinson & Emley, 1973; Schechter & Rand, 1974; Cummings et al., 1985) and anxiety (Nesbitt, 1973; Hughes et al., 1984). Data for ex-smokers who reported anger, frustration or anxiety (n=18) were therefore analysed separately from those who reported other negative affective states such as depression, boredom, jealousy or guilt (n=21).

Table 12(a) reveals some variation in the likelihood of anger, frustration or anxiety occurring at different lengths of time abstinent, but when further collapsed, Table 12(b) shows that the differences are not significant.
<table>
<thead>
<tr>
<th>Time abstinent (days)</th>
<th>1-7</th>
<th>8-28</th>
<th>29-90</th>
<th>91 or more</th>
</tr>
</thead>
<tbody>
<tr>
<td>anger, frustration, anxiety</td>
<td>11 (57.1)</td>
<td>4 (57.1)</td>
<td>0 (0.0)</td>
<td>3 (75.0)</td>
</tr>
<tr>
<td>boredom, depression, jealousy, guilt</td>
<td>8</td>
<td>3</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>missing cases = 0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(numbers in parentheses refer to percentage of subjects who experienced anger, frustration or anxiety)

**TABLE 12a:** Length of time abstinent, by type of negative affect experienced.

<table>
<thead>
<tr>
<th>Time abstinent (days)</th>
<th>1-7</th>
<th>8 or more</th>
</tr>
</thead>
<tbody>
<tr>
<td>anger, frustration, anxiety</td>
<td>11 (57.9)</td>
<td>7 (35.0)</td>
</tr>
<tr>
<td>boredom, depression, jealousy, guilt</td>
<td>8</td>
<td>13</td>
</tr>
<tr>
<td>missing cases = 0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Fisher's exact test, p=.13

(numbers in parentheses refer to percentage of subjects who experienced anger, frustration or anxiety)

**TABLE 12b:** Length of time abstinent (combined), by type of negative affect experienced.

Turning to the experience of social pressure (Appendix 9), there is evidence of some variability over time. When grouped (Table 13(a)), the trend over time is more apparent, with social pressure being much more likely to occur after the end of the first week of abstinence. When the data are combined into two time categories (Table 13(b)), only 19.2 percent of crises during the first week of abstinence occurred in the presence of social pressure, compared to a significantly greater 42.9 percent after this time (p<.05).
6.5.3. Coping in relapse crises

When confronted with an urge to smoke, sixty ex-smokers (88.2 per cent) reported that they had done and/or thought something in an effort to avoid smoking. Table 14 shows that the number of coping responses tried by individuals in the crises they were reporting ranged from zero to eight (mean = 2.1). Most subjects had tried a combination of behavioural and cognitive coping responses (54.4 per cent), while twenty-one (30.9 per cent) had tried behavioural coping alone, and only two (2.9 per cent) had tried cognitive coping alone. In this sample, then, cognitive coping was almost invariably used in combination with behavioural coping.

---

**TABLE 13a:** Length of time abstinent, by presence of social pressure.

<table>
<thead>
<tr>
<th>Time abstinent (days)</th>
<th>1-7</th>
<th>8-28</th>
<th>29-90</th>
<th>91 or more</th>
</tr>
</thead>
<tbody>
<tr>
<td>social pressure</td>
<td>5 (19.2)</td>
<td>7 (50.0)</td>
<td>4 (36.4)</td>
<td>4 (40.0)</td>
</tr>
<tr>
<td>no social pressure</td>
<td>21</td>
<td>7</td>
<td>7</td>
<td>6</td>
</tr>
<tr>
<td>missing cases = 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(numbers in parentheses refer to percentage of subjects who experienced social pressure)

**TABLE 13b:** Length of time abstinent (combined), by presence of social pressure.

<table>
<thead>
<tr>
<th>Time abstinent (days)</th>
<th>1-7</th>
<th>8 or more</th>
</tr>
</thead>
<tbody>
<tr>
<td>social pressure</td>
<td>5 (19.2)</td>
<td>15 (42.9)</td>
</tr>
<tr>
<td>no social pressure</td>
<td>21</td>
<td>20</td>
</tr>
<tr>
<td>missing cases = 7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Fisher's exact test, p=.046

(numbers in parentheses refer to percentage of subjects who experienced social pressure)

---

When confronted with an urge to smoke, sixty ex-smokers (88.2 per cent) reported that they had done and/or thought something in an effort to avoid smoking. Table 14 shows that the number of coping responses tried by individuals in the crises they were reporting ranged from zero to eight (mean = 2.1). Most subjects had tried a combination of behavioural and cognitive coping responses (54.4 per cent), while twenty-one (30.9 per cent) had tried behavioural coping alone, and only two (2.9 per cent) had tried cognitive coping alone. In this sample, then, cognitive coping was almost invariably used in combination with behavioural coping.
### TABLE 14: Number of coping responses tried by ex-smokers.

Table 15 shows that the most common methods of attempting to cope with the urge to smoke were eating or drinking something (35.3 per cent), distracting oneself by keeping busy (33.8 per cent) and thinking about the positive health consequences of quitting (23.5 per cent).

### TABLE 15: Type of coping response(s) tried by ex-smokers in the relapse crisis being reported
With respect to the efficacy of coping, it was hypothesised that relapse would be most likely to occur when coping was not performed. The data lent no support to this hypothesis. It can be seen from Table 16 that, contrary to expectation, no relapses occurred when coping was absent. Further breakdown of the broad categories of coping used (Table 17) showed no clear differences in relapse rates (note small cell sizes for "cognitive only").

<table>
<thead>
<tr>
<th>Did not use coping</th>
<th>Used coping response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smoked</td>
<td>0 (0.0)</td>
</tr>
<tr>
<td>Did not smoke</td>
<td>8</td>
</tr>
</tbody>
</table>

missing cases = 0
(numbers in parentheses refer to percentage of subjects relapsed)

TABLE 16: Presence of coping response, by presence of smoking

<table>
<thead>
<tr>
<th>none</th>
<th>Type of coping</th>
<th>behavioural only</th>
<th>cognitive only</th>
<th>behavioural and cognitive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Smoked</td>
<td>0 (0.0)</td>
<td>4 (19.0)</td>
<td>1 (50.0)</td>
<td>6 (16.2)</td>
</tr>
<tr>
<td>Did not smoke</td>
<td>8</td>
<td>17</td>
<td>1</td>
<td>31</td>
</tr>
</tbody>
</table>

missing cases = 0

TABLE 17: Type of coping response, by presence of smoking
6.5.4. Coping in relapse crises over time

It was expected that the likelihood of coping being performed in a relapse crisis would diminish according to the length of time abstinent. Furthermore, it was hypothesised that this relationship would be more apparent for behavioural coping, than cognitive coping. In order to test these hypotheses, the number of days a subject had been abstinent was related to whether the subject had performed coping (Appendices 10, 11 & 12). The data analysis used the natural log of time elapsed since cessation, in order to reduce the skewness of this variable. A point-biserial correlation was used to test the strength of association (Guilford & Fruchter, 1973).

The correlation between time abstinent and the performance of any coping response was not significant ($r_{pb} = -.143$, $p>.05$). There was also no statistically significant association between performance of any behavioural coping response and time abstinent ($r_{pb} = -.067$, $p>.05$), nor between performance of any cognitive coping response and time abstinent ($r_{pc} = -.067$, $p>.05$).

Figure 5 plots the probability of coping by intervals of time abstinent. It can be seen that there is very little variability in the likelihood of performing coping responses over time. However, the graph reflects the previous observation that behavioural coping is consistently more likely to be used than cognitive coping.
FIGURE 5: Plot of the proportion of subjects who used a coping response, by length of time abstinent.

For those who did perform coping, the number of coping responses used was examined for variation over time (Appendices 13, 14 & 15). The natural log of time abstinent was related to the number of coping responses performed, by a correlation ratio (Guilford & Fruchter, 1973), since a plot of these variables suggested a non-linear relationship (Figure 6). Figure 6 shows that there is some variability apparent over time in the number of coping responses used for behavioural and cognitive coping. However, there was no statistically significant relationship between these variables ($\eta^2 = .07$, $p > .05$). From the data collected, there is no evidence to suggest that either the probability of coping or the number of coping responses diminish according to the length of time abstinent.
It was also hypothesised that alcohol would inhibit coping — particularly the performance of behavioural coping. 28.8 per cent of callers had consumed alcohol prior to the urge to smoke. Although not statistically significant, alcohol consumers were less likely to perform coping than non-alcohol consumers. Table 18 shows that 78.9 per cent of those who had consumed alcohol elicited a coping response, compared with 91.3 per cent of those who had not consumed alcohol. Tables 19 and 20 reveal that alcohol consumers were equally less likely to perform cognitive or behavioural coping, although these differences did not reach statistical significance.
Drank alcohol Did not drink alcohol

<table>
<thead>
<tr>
<th>performed coping</th>
<th>15 (78.9)</th>
<th>42 (91.3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>did not perform</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>coping</td>
<td></td>
<td></td>
</tr>
<tr>
<td>missing cases = 3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fisher's exact test, p=.17</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(numbers in parentheses refer to percentage of subjects using coping).</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**TABLE 18:** Consumption of alcohol, by presence of coping response.

<table>
<thead>
<tr>
<th>cognitive coping</th>
<th>10 (52.6)</th>
<th>28 (59.6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>no cognitive</td>
<td>9</td>
<td>19</td>
</tr>
<tr>
<td>coping</td>
<td></td>
<td></td>
</tr>
<tr>
<td>missing cases = 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chi-square =5.84 (df=1), p=.81</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(numbers in parentheses refer to percentage of subjects who used cognitive coping).</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**TABLE 19:** Consumption of alcohol, by performance of cognitive coping.

<table>
<thead>
<tr>
<th>behavioural coping</th>
<th>15 (78.9)</th>
<th>41 (87.2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>no behavioural</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>coping</td>
<td></td>
<td></td>
</tr>
<tr>
<td>missing cases = 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fisher's exact test, p=.31</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(numbers in parentheses refer to percentage of subjects who used behavioural coping).</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**TABLE 20:** Consumption of alcohol, by performance of behavioural coping.

Thus, alcohol may have inhibited coping, but not to a statistically significant degree. Contrary to expectation, cognitive and
behavioural coping appeared similarly affected by the consumption of alcohol.

6.6. Discussion

Before discussing the main results of this study, it may be instructive to consider some of the methodological issues which affect the validity of the information obtained.

6.6.1. Methodological issues

The collection of information by telephone offers a number of advantages over other methodologies. First, most of the information currently available on relapse, with the exception of Shiffman's (1982) data, is based on long term recall of the situation in which the smoker relapsed. It is unknown how accurate the information is, but it is unlikely that smokers can accurately recall the detail of relapse situations that may have occurred weeks or months ago. A telephone service offers the advantage that smokers can make contact at the time they are experiencing a relapse crisis, or soon after. Information is therefore less likely to be distorted by poor recall.

Another advantage of this methodology is that one can get information on relapse crises that do not result in relapse, so that successfully negotiated relapse crises can be compared with unsuccessful ones. It is possible, however, that those who have not smoked up to the time in which contact was made with the Stay Quit Line, may have done so after the call.
It is recognised that there are also a number of disadvantages associated with this methodology. Most importantly, none of the information can be validated. It is entirely reliant on callers to provide a reasonably accurate account of their personal characteristics, smoking history and the relapse crisis. It is virtually impossible to determine whether some individuals may have rung from curiosity and fabricated or distorted information.

Another consideration is that standardised questionnaire administration may have been a problem, since many Lifeline counsellors were used to collect information. Calls could not be recorded, so that a measure of interviewer reliability was not possible. However, at the two-hour briefing session, heavy emphasis was laid on the necessity for standard questionnaire administration. Furthermore, verbatim instructions for the interviewer were printed clearly on each questionnaire.

6.6.2. The Stay Quit Line as a service

It was disappointing that, although the Stay Quit Line was in operation for a full month, only 71 calls were from ex-smokers who wanted help to maintain abstinence. However, previous experience from Western Australia (Brown, personal communication, 1984) indicates that this number would have been much larger if television commercials had been tagged with the Stay Quit Line telephone number, as originally planned.

The promotional material and messages that were used were not
specific enough in soliciting calls from ex-smokers, since a substantial number of smokers rang expecting assistance to quit. Any decision to continue the Stay Quit Line service would therefore need to include consideration of television promotion, and the development of messages specifically targeted at people who have already quit smoking.

Another likely explanation accounting for the small number of calls relates to the fact that the Stay Quit Line provided personal counselling, rather than recorded advice. Although this was necessary to obtain information for the research component of the study, utilisation rates are generally much higher when messages are taped. Despite promoting his telephone service widely, Shiffman (1982) was unable to obtain anywhere near the number of calls to the recorded telephone service offered in Rochester, New York (Ossip-Klein et al., 1984) or Western Australia (Brown, personal communication, 1984). A recent study of the 'Freedom Line' in New York has involved assessing which categories of taped messages callers rate as most helpful (Shapiro, Ossip-Klein, Gerrity & Stiggins, 1986). Of six categories, callers rated supportive messages as the most useful, followed by cognitive coping suggestions and positive health messages. By comparison, negative health messages were considered the most unhelpful. Further implementation of the Stay Quit Line should take account of these findings.

6.6.3. Characteristics of relapse crises

This study found that negative affect and social pressure were
commonly associated with relapse crises - consistent with results obtained in previous studies (Marlatt & Gordon, 1979; Shiffman, 1982). However, compared with Shiffman's (1982) data, the experience of boredom was much more prominent, with 22.4 per cent of callers reporting that they were bored during the relapse crisis. Shiffman did not mention boredom as a major precursor of crises. It is possible that this may reflect the underlying differences in sample composition. Shiffman's telephone line was promoted mainly to people who had participated in stop smoking groups, whereas the Stay Quit Line described here was promoted and available to anyone who had quit. It was more open, therefore, to attracting calls from people who were bored and wanted something to do.

The hypothesis that a greater proportion of relapse crises during the first week of abstinence would be associated with negative affect, compared to those occurring after this time, received some support from the data. While not reaching statistical significance, there were consistent differences in the expected direction. Thus, a small proportion of relapse crises involving negative affect early in abstinence may have a physiological basis as part of nicotine withdrawal. There was also some support for the suggestion that heavier smokers may be more subject to experiencing negative affect early in abstinence, compared with lighter smokers. This finding gives some support to the conclusions of Cummings et al. (1985).

The finding that social pressure was present in a statistically significant proportion of crises occurring after one week, than during the first week of abstinence, was unexpected, and is
difficult to explain. It may be that fatigue resulting from repeated demands on coping resources or waning motivation to quit smoking (or both), coupled with the availability of cigarettes in relapse crises involving social pressure, may increase the importance of this high risk situation over time.

A recently published study by Cummings et al. (1985) provides support for the notion that relapse crises change qualitatively according to the length of time abstinent. Notably, all of those who relapsed in the first week of abstinence reported the presence of negative affect at the time of relapse, compared with a significantly smaller percentage after this time. Furthermore, relapses occurring when other smokers were present were more commonly reported after the first week of abstinence.

Preparing smokers for what to expect in the way of relapse crises following cessation is an important step in facilitating maintenance. Knowing what to expect, and when to expect it (i.e. the nature of relapse crises) allows a person to develop realistic expectations, and to develop appropriate strategies to cope. More research is clearly warranted to confirm and explain the trends observed in the present study.

6.6.4. Coping in relapse crises

The results of this study provide no clear support for Shiffman's work on coping in relapse crises. There was no relationship found between the type of coping used and relapse. The trend for relapse
to be more likely when a greater number of coping responses had been used was contrary to expectation. In addition, there was no clear relationship found between length of time abstinent and performance of coping.

The failure to confirm Shiffman's findings may again rest in the different composition of the samples. Shiffman's sample contained 60 per cent group participants, whereas in the present study sample, only 13 per cent had made use of a stop smoking service, device or kit.

Group participants could conceivably have been encouraged to use coping responses more frequently, to place greater reliance on them and to perform them more rigorously, than smokers who had used their own resources to quit. Thus, when the large proportion of group participants in Shiffman's sample performed a coping response, they may have used it to better effect than non-group participants who had received no formal instruction and who made up the largest proportion of the sample in this study.

Sample composition may also explain the differences in findings regarding length of time abstinent and performance of coping. As the effects of treatment 'wear off' gradually over time, group participants may begin to be less vigilant in their coping behaviour and therefore appear to be less likely to perform coping later in abstinence. By comparison, ex-smokers who quit without assistance may have no battery of learned coping responses to start with and may be equally as likely to perform coping early or later in abstinence.
Another point of interest is that, compared with Shiffman's study, the ex-smokers who reported coping in the present study were much more likely to report behavioural coping. In Shiffman's study, there were approximately equal proportions of ex-smokers reporting behavioural coping only and cognitive coping only. It is possible that Shiffman's subjects were more familiar with the whole concept of 'coping' and the possibility that a 'coping response' could be behaviourally or cognitively performed.

By using subjects more representative of the population of smokers, this study has, at the very least, demonstrated the caution that should be employed when generalising findings from a sample primarily composed of stop smoking group participants.

6.7. Concluding remarks

This chapter has outlined a number of psychological models of addictive behaviours, such as smoking. One focus of this work has been the maintenance of abstinence, particularly the situations in which one is tempted to relapse, and the ways in which people cope with such situations. Information gained from tests of these models can be readily incorporated into services that attempt to access large numbers of smokers.

Although the concept of a telephone service aimed at enhancing maintenance of smoking cessation is a promising one, the recent results from the 'Freedom Line' in New York suggest that there is a big demand for recorded telephone messages and that further
research should bear this in mind. Recorded telephone messages represent a comparatively inexpensive service which has the capacity, unlike many other services, to be accessed 'on demand' by large numbers of ex-smokers.
CHAPTER 7: ISSUES AT THE INTERFACE
OF PSYCHOLOGY AND PUBLIC HEALTH
7.1. Introduction

A focus upon the issue of smoking cessation in previous chapters has served to illustrate some of the potential applications of psychological theory to the field of public health, and particularly health promotion. Chapter 4 presented an application of psychological theory and research to the design of mass media messages to encourage and support people to quit smoking. Chapter 5 presented a cognitive-behavioural model of smoking cessation and its application to a stop smoking intervention for use by general practitioners. Finally, Chapter 6 examined a number of models of smoking cessation and their concepts of addiction, and presented some primary research relating to the roles of negative affect and coping in the maintenance of cessation.

As a profession, it is apparent that psychologists have a particular mix of skills and knowledge which make them unique contributors to the public health arena. This final chapter will describe in more detail how psychology can contribute to public health endeavours and discuss some of the practical difficulties encountered in working as a psychologist in a public health setting. Finally, training needs required to fulfill these new and important roles will be outlined.

7.2. The contribution of psychology to public health

One of the major contributions of psychology to public health must lie in its role in examining the mechanisms linking behaviour and health (Singer & Krantz, 1982). This incorporates studies of the
role of habits and lifestyles deleterious to health, work relating to the direct psychophysiological effects of psychosocial stimuli, as well as investigations of the determinants of participation in health care services and adherence to treatment regimens.

The application of psychological theory and research to understanding, and ultimately modifying, health impairing habits and lifestyles has begun to prove a worthwhile endeavor, not only in the area of smoking cessation, but across a broad spectrum of behaviours.

For example, new insights into the control and modification of obesity have sprung from psychological enquiries into food preferences (Evans & Hall, 1978; Sahakian, 1982; Rozin, 1984). Striegel-Moore and Rodin (1985), in a review of the opportunities for preventing obesity, conclude that the acquisition of food preferences and aversions is influenced by classical conditioning processes (e.g. Booth, 1981; Booth, Mather & Fuller, 1982), as well as mere exposure (e.g. Birch & Marlin, 1982), instrumental conditioning (e.g. Birch, Marlin & Rotter, 1985) and modeling (Madden & Brownell, 1984).

As an example of the role of instrumental conditioning, Birch et al. (1985) compared children's responses to two types of contingency conditions. One involved an explicitly means-end contingency ("if you drink this cup of juice, you will be allowed to see a movie"), while the second involved a temporal contingency (after the children had drunk a glass of juice, they were shown a movie). It was found that the temporal contingency did not affect preference ratings,
while the means-end contingency induced a negative shift in preference. These findings have immediate relevance to child-rearing practices related to teaching healthy eating habits, since, as Striegel-Moore and Rodin (1985) comment, it is more than likely that parents try to teach their children to eat nutritious foods in an instrumental paradigm (e.g. "you can have dessert if you eat your vegetables"), an effort that, according to Birch et al. (1985), defeats its own purpose.

In the area of road traffic accidents, consideration of the psychological factors that influence driver behaviour are crucial in the development of measures designed to reduce road accident mortality, given that the overwhelming majority of accidents are due to driver error, rather than faulty equipment or road design (Cameron, 1982; Robertson, 1986; Svenson, 1980;).

Errors in the perception of, and reaction to, motion by drivers have been extensively studied and have been translated into practical interventions to decrease the risk of road accidents. The introduction of a centre rear brake light in new model cars has occurred as a result of research demonstrating a 50 per cent reduction in rear-end collisions among cars fitted with these brake lights (Reilly, Kurke & Bukenmaier, 1980). The positioning of the brake light, when illuminated, decreases the braking reaction of a following driver, thus increasing the probability that a rear-end collision will be avoided.

Another example of an environmental change that influences
perception is the practice of painting stripes across a road at exponentially decreasing distances. This creates the illusion of acceleration when crossed at a constant speed (Denton, 1980). Installation of the stripes at high speed approaches to traffic roundabouts in England has resulted in an average 66 per cent reduction in crashes at such sites.

Another means by which behaviour is linked to physical illness is by the direct psychophysiological effect of psychosocial factors. For example, because of the impetus provided by psychologists and other behavioural scientists (Dembroski et al., 1978; Glass, 1977; Matthews, 1982), pathophysiological mechanisms linking Type A behaviour (Rosenman & Friedman, 1974) to coronary heart disease have been explored. Individuals with the Type A behaviour pattern exhibit enhanced aggressiveness, competitiveness and impatience, and a deep involvement in their work (Chesney, Frautschi & Rosenman, 1985). The Type A behaviour pattern emerges as a response of a characterologically predisposed person to salient environmental stress (Jenkins, 1988).

Until 1980, published research results strongly and consistently showed a positive correlation between Type A and coronary heart disease — this evidence coming from case-control, prospective and angiographic studies (Jenkins, 1988). Indeed, an expert panel convened by the National Heart Lung and Blood Institute in the United States endorsed Type A behaviour as an independent risk factor for coronary heart disease (Cooper, Detre & Weiss, 1981). Since this time, many studies have failed to confirm this
relationship, and Krantz, Contrada, Hill and Friedler (1988) remark that the conclusions that can be drawn regarding the Type A behaviour pattern are now more equivocal than even three years ago, particularly among individuals at high risk of coronary heart disease. However, Type A components such as hostility, anger and vigorous speech still remain related to coronary heart disease in most recent studies in which these have been examined (Matthews & Haynes, 1986).

There is increasing interest in the modification of Type A behaviour, both for primary and secondary prevention. In general, these studies have reported promising reductions in the self-report of Type A behaviour following behavioural intervention (Chesney et al., 1985). In particular, a large scale study in the United States reported a significantly lower rate of recurring coronary events amongst those Type A post-myocardial infarction patients who had received a behavioural intervention for Type A behaviour, compared to those who did not (Friedman, Thoresen, Gill, Powell, Ulmer, Thompson et al., 1984). These results suggest an important role for Type A intervention in secondary prevention.

Another example of research involving direct behavioural influences on health is that examining the relationship between stress and the immune system. A major premise underlying much of this work is that stress may enhance vulnerability to certain diseases by exerting an immunosuppressive effect (Baker, 1987; Baum, Davidson, Singer & Street, 1987; Kiecolt-Glaser & Glaser, 1988). Interest has centred on those diseases intimately connected with immunologic mechanisms.
such as infection, malignancy and autoimmune disease (Dorian & Garfinkeì, 1987).

Recent studies have demonstrated consistent immunological changes in people attempting to cope with bereavement (Linn, Linn & Jensen, 1982; Schleifer, Keller, Camerino, Thornton & Stein, 1983), important examinations (Kiecolt-Glaser, Garner, Speicher, Penn, Holliday & Glaser, 1984; Glaser, Rice, Speicher, Stout & Keicolt-Glaser, 1986) and other naturally occurring psychological stressors (Kiecolt-Glaser, Fisher, Ogrocki, Stout, Speicher & Glaser, 1987; Locke, Kraus, Leserman, Hurst, Heisel & Williams, 1984). Although declines in immune function appear to be a frequent occurrence of commonplace life events, factors such as the prior health of the individual (with respect to immune function) and the degree of exposure to pathogens are important in determining actual organic disease outcomes (Kiecolt-Glaser & Glaser, 1988). There is also some evidence that psychological resources that reduce distress, such as supportive interpersonal relationships (Cohen, 1988) and psychotherapy (Pennebaker, Kiecolt-Glaser & Glaser, 1988) may attenuate adverse immunological changes.

Psychologists have also made contributions to the understanding of processes whereby individuals minimise the significance of symptoms, delay in seeking medical care, or fail to comply with treatment and rehabilitation regimens (Singer & Krantz, 1982).

For example, women who delay in seeking investigation of a breast lump may place themselves at higher risk, since, if malignant,
breast lump size is inversely correlated with survival (Foster & Costanza, 1984). Delay is commonly defined as the time period elapsed between a woman's recognition of a symptom and the first presentation of the symptom to a health professional (Singer, 1988). It is estimated that between 30 to 55 per cent of all breast cancer patients delay reporting of any symptoms for over three months (Magarey, Todd & Blizzard, 1977). Attempts to understand the factors which influence the delay, or the prompt reporting of breast symptoms, constitute relevant and useful research in efforts to promote the early detection of breast cancer (e.g. Singer, 1988; Timko, 1987).

The identification of mechanisms influencing hesitance to participate in breast screening programmes are also important to consider in the early detection of breast cancer (e.g. Maclean, Sinfield, Klein & Harnden, 1984; Baines, 1984). The success of mass screening programmes in reducing cancer mortality relies heavily on the participation rate for screening since, clearly, there is no screening benefit for non-attenders. Efficient screening methods for women's cancer cannot be expected to lead to significant reductions in mortality, if there is a low participation rate of women in screening (Eardley, Elkind, Spencer, Hobbs, Pendleton & Haran, 1985; Gad, Thomas & Moskowitz, 1984; Howard, 1987).

Past experience has shown that women of low socio-economic status and older women are least likely to participate in cancer screening programmes (Kleinman & Kopstein, 1981; Lumsden, Armstrong & Nandakumar, 1986; Mitchell & Medley, 1987). However, these women
constitute a group who are at higher risk and stand to benefit more from screening (Chamberlain, 1986). Recently, research has shown that women who do not participate in breast screening programmes tend to perceive themselves as less susceptible to breast cancer, value mammography less, and know less about breast cancer, compared to those who participate (Calnan, Moss & Chamberlain, 1985; Rutledge, Hartmann, Kinman & Winfield, 1988). These findings imply that efforts should be directed toward devising interventions designed to increase perceived susceptibility to breast cancer and knowledge of the benefits of mammography.

Environmental factors also affect participation rates in screening programmes. A frequent finding is that women who do not participate in screening are less likely to know where to obtain screening and find it more difficult to attend the screening facility (Eardley et al. 1985). Screening services that are more convenient and accessible have been most successful in encouraging participation of older, and lower socio-economic groups of women (Strax, 1980; Brun & Grime, 1983). Personal invitations have also been used to increase participation rates of these women (Eardley et al., 1985; Hobbs, Elkind, Pendelton, Eardley, Haran & Spencer, 1987; Magnus, Langmark & Andersen, 1987).

As a further example, it is recognised that a pervasive problem in the treatment of many conditions is lack of adherence to prescribed regimens. In the case of treatment for hypertension, Morisky (1986) suggests that, of those patients placed on antihypertensive medication, 40 per cent would stop using the medication within the
first year, and of those remaining, 40 per cent would not comply well enough to control their blood pressure. Data from the National Heart Foundation Risk Factor Prevalence Survey (1983) is consistent with this, indicating that 31 per cent of males and 50 per cent of females taking medication for hypertension are not under control.

This is of concern, since individuals with high blood pressure who do not comply with drug treatment place themselves at much higher risk of suffering a stroke or other high blood pressure related condition. The extensive psychological literature on compliance offers many principles that may be translated into practical interventions (e.g. Haynes, Taylor & Sackett, 1979; DiMatteo & DiNicola, 1982). Meichenbaum & Turk (1987) note that there has been a great deal of research conducted on the factors related to compliance. These include variables related to the characteristics of the patient, the treatment regimen, features of the condition being treated, the relationship between the health care provider and the patient, and the clinical setting.

Efforts to enhance medication compliance have involved improving the relationship between the patient and the health care provider (DiMatteo & DiNicola, 1982; Pendleton, 1988), patient education (Ley, 1982; Rook, 1986; Rosenstock, 1985), simplifying the treatment regimen as much as possible (Luscher, Vetter, Siegenthaler & Vetter, 1985), increasing social support (Morisky, DeMuth, Field, Green & Levine, 1985), and a variety of behaviour modification approaches (Epstein & Cluss, 1982; Meichenbaum & Turk, 1987).
These are important examples of how psychologists, through their efforts to identify and modify the behavioural, cognitive and environmental factors affecting health, can contribute to a more complete understanding of health and disease.

In terms of learning principles, psychologists can also help to improve methods for disseminating information on health risks and health behaviour change. As discussed earlier, the social learning concept of modeling, for example, has applications in the design of mass communication messages (Solomon & Maccoby, 1984) and for guiding community organisation in health promotion programmes (Wakefield & Wilson, 1986).

In a thoughtful review, Elder (1987) demonstrates that the principles of behaviour modification also hold considerable potential for enhancing the public health of developing countries. For example, with respect to population control, it is well-known that while technologies for birth control have been developed and implemented in industrialised countries, the developing world lags far behind in technological progress and knowledge related to reducing population growth and minimising wasteful fertility patterns. Elder (1987) points out that what is lacking in developing countries, are appropriate incentives and behavioural technologies needed for the implementation of these incentives to control population growth.

Many of the attempts to address the problem of population control implicitly reflect behaviour modification techniques. For example,
various types of positive reinforcement have been used successfully in Hong Kong to reassure IUD users (Chan, 1971) and in Korea and Thailand to increase population control among employees (David, 1982). Differential reinforcement, involving the reinforcement of individuals who accomplish lower rates of reproduction through later marriages, longer child spacing and later first births, has also been used (LoLordo & Shapiro, 1980; Wan & Saw, 1975).

Elder (1987) further cites examples of behaviour modification applications in assisting the control of malnutrition and communicable diseases in developing countries. He argues that in order to maximise the effectiveness of current approaches that are unknowingly applying behaviour modification principles, there should be an expansion in the dialogue between public health practitioners and psychologists, who are well-versed in behaviour modification approaches.

Principles derived from behaviour change theories have been useful in guiding the design of interventions to promote change in health related behaviours in Western countries. Owen & Lee (1986), for example, outline eleven principles derived from theory and research on behaviour change to assist programme development and policy recommendations in the promotion of physical exercise, although these principles can be readily incorporated as general guidelines for programmes aimed at a range of health behaviours (Lee & Owen, 1985). In particular, they emphasise the setting of goals that acknowledge the circumstances of the individual, the use of explicit education and instruction, rather than simple exhortation, the
provision of adequate social settings and social incentives for change, the use of social support and appropriate conditions for self-help, and the recognition that behaviour change is often a difficult and complex process.

Many of these principles are also relevant in attempts to influence the actions of decision-makers, particularly politicians and those responsible for framing social legislation. Lee and Owen (1985) suggest that these principles may be incorporated in the preparation and presentation of arguments through the mass media and by community lobbying. Wakefield and Wilson (1986) also suggest that diffusion of innovation principles could be applied to influence the actions of decision makers.

Faden (1987) contends that there is an important role for health psychology in the allocation of health care resources, since the question of how to allocate scarce resources is fundamentally a question of values and value trade-offs. Human judgement and value issues are at the core of the health care allocation policy problem and make ready subject matter for health psychology. However, there has been little attempt to study the public's or the policy makers' perceived needs for preventive or curative services and the patterns of decision making that are involved.

It is known, however, that nearly all allocation policy analyses rely heavily on some kind of cost-benefit or cost-effectiveness assessment, and increasingly, quality of life has been viewed as an important health benefit, along with reduced morbidity and mortality.
(Weinstein & Stason, 1977). One role for psychology in this area has been to assist in the measurement and conceptualisation of 'quality of life' (Faden, 1987; Kaplan & Bush, 1982).

7.3. Practical difficulties

Although there are appropriate and useful applications of psychological theory with the potential to guide the development of health promotion programmes, the examples referred to in earlier chapters of this thesis illustrate some of the practical difficulties in translating theoretical principles into action.

In particular, the multidisciplinary nature of the field means that, often, even basic psychological principles of behaviour change are unfamiliar to other professionals, including administrators and practitioners who make decisions about funding or programme direction. Owen (1986) suggests that there may even be suspicion by these professionals "that academics and scientists use the rhetoric of biomedical, behavioural or social science to persuade people with practical concerns to devote time and resources to approaches based on popular theoretical hobbyhorses" (p.441). One of the crucial aspects of working successfully in such an environment is to be able to describe theoretical principles and their practical applications in simple and convincing terms to administrators, marketing professionals and medical personnel alike.

Kamien (1984) and Sanson-Fisher (1985) discuss some of the factors...
that have sustained the lack of a viable and effective behavioural perspective in medical practice in Australia. Kamien (1984) laments the apparent absence of individuals willing to be vigorous interpreters of behavioural science, thus allowing some medical educators and researchers to ignore the potential contributions of the discipline. Sanson-Fisher (1985) points out that this situation is perpetuated by a limited number of academics in the field, their lack of power to influence medical education and the scarcity of research funding. He argues that behavioural science requires time, resources and increased opportunities if it is to demonstrate its real value to medicine.

Another difficulty lies in the view held by many public health practitioners that psychology's emphasis on the individual's attitudes and behaviours ignores the social, economic, physical and political environments that influence behaviour, diverting attention from the social engineering and structural changes of traditional public health approaches (Beauchamp, 1987; Roberts, 1987). Thus, behavioural approaches to health problems are often conceptualised as 'blaming the victim' for his or her deficiencies (Crawford, 1977).

This view fails to recognise that psychological theories of behaviour change, notably social learning theory, give emphasis to the role of the environment in supporting and maintaining behaviour change (Bandura, 1977). Further, in discussing the interface between psychology and public health, Roberts (1987) makes a convincing case that active behavioural approaches (such as education) are crucial in an environment where passive, structural
Interventions (such as legislative reforms) are difficult to implement and have limited acceptability to constituents or consumers.

In addition, there is the concern that more might be promised by health psychologists than can truly be delivered in effectively preventing disease - that health psychologists may fall victim to the 'health promotion ideology' now so evident in our culture (Evans, 1988). Evans argues that it is necessary to maintain scientific objectivity in advocating, conceptualising and evaluating health promotion interventions. This implies that health psychologists need to maintain a critical familiarity with health promotion research and intervention literature.

Another issue is that working in community settings where behaviour change is desired in non-captive populations who are not necessarily motivated to change represents a significant departure from dealing with clinical populations. As recognised in Chapter 4 with the self-attribution literature and again, in Chapter 6 with the analysis of coping responses, caution must be exercised in generalising findings from clinical populations to the population at large. However, as the field of public health psychology matures, it would be expected that more appropriate and effective interventions guided by psychological principles will eventuate.

Psychologists who work in Federal or State public health departments need to develop an understanding of the extent to which political and/or bureaucratic objectives can limit or confound research and
intervention programmes. For example, the decision to cancel the television advertisements in the 1984 'Quit. For Life' programme at a time when commitment to the Stay Quit Line had already been given, was based on an administrative requirement, but had the effect of severely limiting the number of callers. The practising public health psychologist employed in such a setting needs to develop a tolerance for a wide range of such practical difficulties.

7.4. Training needs and opportunities

Although psychologists are concerned with changing attitudes and promoting conditions for changing behaviour, few are prepared by training and experience to do so in other than one to one treatment settings (Sarason, 1981). Iscoe (1982) asserts that adherence to the public health maxim of 'no condition was ever prevented by treating a person that already had the condition' suggests the type of prevention that many psychologists are either unfamiliar with or do not support. There will probably always be a need for individualised psychological interventions of a clinical nature to help certain groups of afflicted individuals, in the same way that medical care is essential to serve the needs of the ill. However, in the search for population-wide preventive solutions to public health problems, psychologists will need to broaden their focus considerably.

Specifically, Coates and Demuth (1984) argue that psychological interventions must change in three important directions that extend
beyond focussing exclusively on individuals or individuals within groups, relying primarily on face to face contact to deliver services, and giving primary attention to treatment and rehabilitation. They present a useful conceptualisation of this in a three dimensional grid depicted in Figure 7.

FIGURE 7: Three dimensions of psychological intervention pertaining to health promotion (Source: Coates & Demuth, 1984)
In Figure 7, interventions may be aimed at individuals, groups, organisations, communities, and/or social system policies (Axis I). Axis II illustrates that psychologists should consider a broader range of intervention methods. Coates and Demuth (1984) point out that interventions involving media, economic, legal or structural systems are not modalities for which psychologists are usually trained, but are of primary importance in reaching large segments of the population. Finally, Axis III demonstrates a variety of purposes for which intervention can be undertaken.

The intersection of community (Axis I), media (Axis II) and prevention (Axis III) describes the activities of psychologists working in projects such as the Stanford Heart Disease Prevention Programme (Farquhar et al., 1977). More unusual combinations which could benefit from psychological input might be policy (Axis I), legal consultation (Axis II) and prevention (Axis III). An intervention which integrates these three dimensions is the introduction of specific health warning labels on cigarette packets.

In the United States, a growing number of psychologists are being employed in schools of public health. In a commentary on the training of postgraduate psychologists in schools of public health, Matthews and Siegel (1987) cite five advantages of this practice; namely, the benefit of exposure to the public health perspective with its long history and tradition, the problem-oriented approach, the emphasis on prevention, the model of intervention focusing on environmental change and the unit of analysis being the population, community or group.

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Exposure to the public health perspective was the most frequently mentioned advantage of employment in schools of public health volunteered in a survey completed by 80 per cent of the psychologists in those schools (Matthews & Avis, 1982). The survey found that psychologists made up 5.7 per cent of approximately 300 full-time equivalent faculty members. Public health psychologists were found to be active researchers and publishers, with average totals of 2.5 articles and 26.9 citations for a three year period, comparable with psychologists who have attained some eminence in their field (Helmreich, Spence, Beane, Lucker & Matthews, 1980). As major dissatisfactions, psychologists cited their isolation from psychology and a lack of appreciation among public health colleagues of the contribution of psychology to public health. Psychologists in these settings were also found to experience difficulty because of their insufficient knowledge of public health perspectives and subject matter.

Following the thoughts of Matarazzo (1980), Coates and Demuth (1984) suggest that ideal postgraduate training for psychologists interested in public health would include epidemiology and biostatistics, medical sociology, nontraditional and technological research paradigms as well as traditional research training, physiology, pathophysiology, neurochemistry, and selected aspects of clinical medicine, as well as organisational and managerial principles.

In recognition of the potentially valuable role that could be played by the public health psychologist and the need to encourage a mutual
appreciation between the disciplines, a number of joint programmes have been established that permit students to complete the requirements for a PhD in psychology and the Master of Public Health degree. The programme at the University of Alabama emphasises the role of public health psychology in maintaining and promoting good health (Miller, Fowler & Bridges, 1982). The programme is available to students in any area of specialisation in psychology and in any one of several tracks within the school of public health. Another programme is available at the University of Hawaii (Tanabe, 1982). This includes study in clinical/community psychology, public health and business administration and focusses on service to community organisations and work settings.

A number of post-doctoral training programmes are also available. Belar & Segal's (1983) survey of post-doctoral training opportunities in health psychology indicates programmes at 43 different facilities, twelve of which identify an emphasis in 'public health/community'.

7.5 Concluding remarks

The public health arena offers psychologists a rich environment in which to apply their knowledge and skills toward the pursuit of improved health for the population. Principles derived from psychological theory offer great potential in the conceptualisation and implementation of programmes to promote health. Examples contained and cited in this thesis have shown that both the content
and delivery of health promotion programmes can benefit from the contributions of psychologists. However, to assist psychologists to maximise their useful involvement in public health, training should emphasise prevention, rather than treatment and the population as a focus for intervention, rather than the individual. Training in other subject areas within public health is also desirable. Together, the perspectives of psychology and public health can complement one another in the effort to understand and influence the important public health problems of our day.
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APPENDIX 1: LIST OF REPORTS AND PUBLICATIONS
PREPARED DURING THE PERIOD OF CANDIDATURE
FOR THE DEGREE
Publications


Steven, I.D., Wilson, D.H. & Wakefield, M.A. Knowledge, attitudes and reported practices of GPs with regard to high blood pressure control Manuscript, submitted for publication, 1988.


Reports

Wakefield, M. Knowledge and attitudes of women to Pap smears, Port Augusta, South Australia Epidemiology Branch, South Australian Health Commission, 1988.


APPENDIX 2: PUBLICATIONS PERTAINING TO "IMPROVING THE PUBLIC'S PERCEPTION OF ROAD ACCIDENT RISK"

NOTE:

This publication is included in the print copy of the thesis held in the University of Adelaide Library.
Letters to the Editor

Dear Editor:

Mason et al. correctly state that "a well-informed public is better equipped to make both individual and collective decisions that will reduce risks and enhance health survival." They go on to say that the presentation of information may be as important as the information itself and assert that the challenge for those engaged in interpreting risks is, in part, how to do so in a way that conveys a sense of relative risk.

For the information of your readers, I would like to bring to your attention one such method of establishing and conveying a concept of relative risk that has been developed with respect to the road accident experience of young South Australian males 16-24 years of age. This experience was communicated in terms that lay people generally understand and use constantly, namely probability theory. In lay terms, probability theory is expressed as chance, such as the chance of winning a lottery, a race, or a championship.

To compute the chance of a 16-year-old South Australian male being involved in a road accident before his 25th birthday, a modified life-table approach was used. By using a life-table approach, it is possible to establish the proportion of young adult males who survive in each age group, then compute the chance of a male 16 years of age being involved in a road accident before reaching the age of 25 years.

The probability of a 16-year-old South Australian male being involved in a road accident involving injury or death prior to his 25th birthday is one chance in five. This represents two or three members of each football team, one or two members of each basketball team that will be injured or killed on the road in their teens or early twenties.

The life-table approach is applicable to many other public health problems for which a reasonable data base exists. Its value lies in the fact that a clear relative risk is provided and that communication analogies are easily drawn.

David Wilson, M.P.H.
Health Promotion Branch,
Public Health Service
South Australian Health Commission

The preceding letter was forwarded to Dr. Mason, who supplied the following response.

Dear Editor:

David Wilson and Melanie Wakefield of the South Australian Health Commission have used a modified life-table approach creatively to establish the relative risk of death by automobile accident for young South Australian males between 16 and 24 years of age. The description of that risk in terms of the probability of a 16-year-old dying in an automobile accident before his 25th birthday seems to us an excellent example of interpreting risk in terms comprehensive and meaningful to the public.

We look forward to seeing other such examples as public health professionals grapple with the difficult job of interpreting health risks to the public.

James O. Mason, M.D., Dr.P.H.
Centers for Disease Control

Dear Editor:

I am writing in regard to "Efficacy of Self-Help Behavior Modification Materials in Smoking Cessation." One author's name was inadvertently left off the title page. Stephen P. Fortmann, M.D., contributed to the design and administration of the study as well as to the editing of the manuscript. I would appreciate your inserting an erratum in the journal stating that Dr. Fortmann is to be added at the end of the author list.

James F. Sallis, Ph.D.
Assistant Adjunct Professor of Pediatrics

REFERENCES

APPENDIX 3: PUBLICATION PERTAINING TO "COMMUNITY ORGANISATION FOR HEALTH PROMOTION"

NOTE:

This publication is included in the print copy of the thesis held in the University of Adelaide Library.
APPENDIX 4: PUBLICATIONS PERTAINING TO "BANNING THE SALE OF CIGARETTES IN PACKS OF 15"

**NOTE:**

This publication is included in the print copy of the thesis held in the University of Adelaide Library.

**NOTE:**

This publication is included in the print copy of the thesis held in the University of Adelaide Library.
APPENDIX 5: Stay Quit Line media promotion.

Newspaper clipping
(The Advertiser)

**BRIEFLY**

They'll help beat urge for a smoke

An SA “Stay Quit” telephone counselling service is being offered for those who have given up smoking but feel the urge to take it up again.

The 24-hour service is being run by the SA Health Commission in conjunction with Lifeline.

Launched to help smokers “quit temptation,” the service, manned by trained counsellors, began yesterday and will continue to the end of the month, when it will be reviewed. The “Stay Quit” telephone number is 212 3794.

Newspaper advertisement and poster

Also: News coverage on television and radio on launch day.

Radio interview on SAN radio.

Eight newspaper advertisements placed in The Advertiser and Sunday Mail.

Twenty four radio advertisements broadcast on SKA radio.
APPENDIX 6: QUESTIONNAIRE ADMINISTERED TO
STAY QUIT LINE CALLERS
STAY QUIT LINE QUESTIONNAIRE

(I am going to ask you a series of questions which will help me to determine which stay quit techniques would be best suited to you. The answers you give will also help us to refine future stop smoking services.)

1. Have you rung this Stay Quit Line before to get information to help you stay off smoking?

   YES □ (ask Q.12, 13, 14 only)
   NO □ (complete all of questionnaire)

2. Sex      MALE □
               FEMALE □

3. How long is it since you quit smoking?

   _______YEARS, _______MONTHS, _______WEEKS, _______DAYS.

4. And how old are you? _______years

5. On average, how many cigarettes a day were you smoking, before you quit?
   (If replies one packet, ask how many in packet).

   CIGARETTES PER DAY
   PIPE □
   CIGARS □

6. Did you use any stop smoking service to quit or did you quit on your own?

   ON OWN EFFORTS
   QUIT WITH A FRIEND, BECAUSE OF A FRIEND OR RELATIVE'S INFLUENCE
   DOCTOR ADVISED ME TO QUIT
   STOP SMOKING SERVICE (GROUP, BOOK, KIT, FILTER, GUM, HYPNOTHERAPIST, ACUPUNCTURIST, PSYCHOLOGIST)
   OTHER, SPECIFY______________________________
7. How many times before have you seriously tried to quit smoking?

NEVER

_____ TIMES

8. How long ago was your last urge to smoke?

NOW
TWO HOURS AGO OR LESS
MORE THAN TWO HOURS AGO, BUT TODAY
YESTERDAY
DAY BEFORE YESTERDAY TO ONE WEEK
MORE THAN ONE WEEK

9. Have you smoked since you had this last urge to smoke?

YES

NO

10. Did you have anything to eat just prior to the urge to smoke?

YES

NO

11. Did you drink any alcohol just prior to the urge to smoke?

YES

NO
12. What sort of mood were you in just prior to this urge to smoke?

(If replies, 'good' or 'bad', ask, 'In one word, describe what type of
good/bad feelings you were experiencing just before you had this urge to
smoke.')

Negative affect
- ANXIOUS/WORRIED/CONCERNED/AFRAID
- ANGRY/FRUSTRATED
- DEPRESSED/SAD/FLAT'
- BORED
- LONELY
- JEALOUS
- GUILTY

Positive affect
- HAPPY
- FREE
- EXCITED
- CELEBRATING

OTHER FEELING OR MOOD, SPECIFY

13. Was this urge to smoke triggered off by the influence or presence of other
people?

NO  (go to Q. 15)
YES (go to Q. 14)

14. What sort of influence did these other people have which led you to feel
like smoking?

- INTERPERSONAL CONFLICT CAUSING FRUSTRATION OR ANGER.
- INTERPERSONAL SITUATIONS CAUSING OTHER NEGATIVE FEELINGS SUCH AS
  ANXIETY, FEAR, TENSION, APPREHENSION, EVALUATION STRESS, ETC.
- BEING URGED TO SMOKE, OR OFFERED A CIGARETTE.
- SEEING OTHERS SMOKE.
- INTERPERSONAL SITUATIONS CAUSING POSITIVE FEELINGS SUCH AS
  HAPPINESS, CELEBRATION, EXCITEMENT, FREEDOM, ETC.
- OTHER, SPECIFY
15. When you had this urge to smoke, what did you do, or think, to attempt to cope with the temptation to smoke? (Let caller respond without any further prompting except 'Anything else?' and tick one or more boxes as appropriate)

**BEHAVIOURAL**

- EATING OR DRINKING
- DISTRACTING ACTIVITY (incl. 'keeping busy')
- LEFT SITUATION/AVOIED SITUATION
- DELAY (incl. 'just waiting')
- PHYSICAL ACTIVITY
- RELAXATION
- OTHER(S)

**COGNITIVE**

- THOUGHT OF POSITIVE HEALTH CONSEQUENCES OF QUITTING
- THOUGHT OF NEGATIVE HEALTH CONSEQUENCES OF SMOKING
- THOUGHT OF OTHER NEGATIVE CONSEQUENCES OF SMOKING
- WILLPOWER
- DISTRACTION/THOUGHT ABOUT SOMETHING ELSE
- INTENT TO DELAY (e.g. 'I'll just wait this out')
- SELF-DENIGRATING THOUGHTS (e.g. 'You weakening')
- OTHER(S)
APPENDIX 7: REFERENCE MANUAL USED BY STAY QUIT LINE COUNSELLORS
# STAY QUIT LINE

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<tr>
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PLEASE READ THOROUGHLY BEFORE TAKING A STAY QUIT CALL
Health Promotion Services of the South Australian Health Commission in conjunction with Lifeline, South Australia, have set up a new Stay Quit Line to assist ex-smokers to remain abstinent. The telephone line will be available for the month of October only, for 24 hours each day.

Ex-smokers will be encouraged to call the line when they experience an urge to smoke, irrespective of whether they actually smoke in that situation or not.

From experience, we believe that there is a demand for this service and are piloting it for a period of one month. This service also provides us with an opportunity to gather some much needed information about the types of situations in which people experience temptations to smoke, and how they attempt to deal with those temptations. The information gained from the service will therefore assist the development of future stop smoking programs.

Your assistance in this project is appreciated and gratefully acknowledged.
INSTRUCTIONS FOR COMPLETING QUESTIONNAIRE

1. A questionnaire should be completed for all callers who have been quit for at least a day, and who are experiencing difficulties in remaining abstinent. Some of these people may have had a cigarette since they experienced an urge to smoke - we want information on these people too.

2. The questionnaire should be completed early in the course of the call, and the method of asking the questions should be as similar to the suggested wording as possible. This will allow the responses to be more comparable.

3. Where responses to questions do not fit the categories provided, or you are unsure where to put the response, write it neatly next to the provision marked 'other'.

4. If the person experienced either a negative emotional state or a situation of social pressure to smoke, refer to the stay quit techniques designed specifically for those situations. For all other situations where people are tempted to smoke, refer to the general techniques.
SPECIFIC STAY QUIT TECHNIQUES

A. NEGATIVE EMOTIONAL STATES

1. RELAX

Becoming more relaxed is one way of resisting urges to smoke. Here is a simple technique you can use any time you feel tempted to smoke.

Instant relaxation: 4 simple steps.

* Sit in a comfortable position. You can also learn to do this while standing - in fact, in almost any situation in which you would normally reach for a cigarette.
* Breathe in slowly through your nose to a count of four. Take in as much air as possible without straining.
* Now breathe out slowly to a count of four, relaxing your shoulders until you have expelled as much air as possible without forcing.
* Repeat a few times and feel your muscles naturally relax each time you breathe out.

2. THINK STRAIGHT

The way in which you think about smoking might lead you closer to having a cigarette, DON'T ALLOW YOURSELF TO BE CONTROLLED BY THESE TEMPTING THOUGHTS. Use positive thinking to talk yourself out of urges to smoke. For example:

* Think about the HEALTH HAZARDS OF SMOKING and what is is doing to your body.
* Think about the POSITIVE CONSEQUENCES of QUITTING.
* CHALLENGE your negative thoughts (excuses to smoke) with positive thoughts (arguments against smoking). For example:

<table>
<thead>
<tr>
<th>EXCUSE</th>
<th>ARGUMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>I'll handle this mess better if I smoke.</td>
<td>No! I won't let these thoughts lead me back to smoking. I can do this without a smoke.</td>
</tr>
<tr>
<td>I'm one of those people who just doesn't have any willpower.</td>
<td>Rubbish! I would be so angry if someone else said this to me. I can stay quit.</td>
</tr>
<tr>
<td>I can concentrate better with a cigarette.</td>
<td>Smoking doesn't improve my concentration. Only my thoughts can do that.</td>
</tr>
</tbody>
</table>
3. DISTRACT YOURSELF
Distract yourself from thinking about smoking. Try thinking about something pleasant, and/or changing whatever activity you are doing for a short while. The urge to smoke will pass.

4. QUESTION YOURSELF
Whenever you get an urge to smoke, ask yourself 'Why do I want a cigarette now?' and then, 'What else could I do instead of smoking?'

B. SOCIAL PRESSURE SITUATIONS
Think about the situations where you will be under obvious or subtle pressure from smokers to have a cigarette. It may be advisable to avoid the company of smokers for a while until you are more confident about resisting smoking in these situations.

If this is not possible, plan in advance what you will say and do. Before being confronted with the situation, rehearse your reply to a smoker when he/she offers you a cigarette, otherwise you might find yourself automatically accepting one. Practise a positive and convincing refusal of an invitation to smoke.

For example:
'No thanks, I don't want one'
'No thanks, I've given up and I'd appreciate it if you didn't offer me cigarettes anymore.'
GENERAL STAY QUIT TECHNIQUES

1. PLAN AHEAD

TRY TO ANTICIPATE SITUATIONS IN WHICH YOU MIGHT BE TEMPTED TO SMOKE, AND WORK OUT WHAT YOU CAN DO IN THESE SITUATIONS OTHER THAN SMOKEING. The most common situations in which people are likely to be tempted to smoke are:

* when they feel bad (e.g. angry, anxious, depressed etc.);
* in the company of other smokers;
* where they used to automatically reach for a cigarette.

Once you are aware of the types of situations where you are most likely to be tempted to smoke, plan to AVOID them for a while, or to DO SOMETHING ELSE. Practise an automatic, positive and convincing refusal of an invitation to smoke.

2. THINK STRAIGHT

The way in which you think about smoking might lead you closer to having a cigarette. DON'T ALLOW YOURSELF TO BE CONTROLLED BY THESE TEMPTING THOUGHTS. Use positive thinking to take yourself out of urges to smoke. For example:

* Think about the HEALTH HAZARDS OF SMOKING and what it is doing to YOUR body.
* Think about the POSITIVE CONSEQUENCES OF QUITTING.
* CHALLENGE your negative thoughts (excuses to smoke) with positive thoughts (arguments against smoking). For example:

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<thead>
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</tr>
<tr>
<td>I can concentrate better with a cigarette.</td>
<td>Smoking doesn't improve my concentration. Only my thoughts can do that.</td>
</tr>
</tbody>
</table>
3. DISTRACT YOURSELF
   Distact yourself from thinking about smoking. Try thinking about
   something pleasant, and/or changing whatever activity you are doing for a
   short while. The urge to smoke will pass.

4. DELAY
   When you have a sudden unexpected urge to smoke, wait until FIVE minutes
   have passed, and think of something else. Usually, the craving will pass.

5. QUESTION YOURSELF
   Whenever you get an urge to smoke, ask yourself 'Why do I want a cigarette
   now?' and then, 'What else could I do instead of smoking?'

6. IF YOU'VE ALREADY SMOKED
   If you've already had a cigarette and want to smoke more, DON'T USE THIS
   SLIP UP AS AN EXCUSE TO START SMOKING AGAIN. You probably feel WEAK and
   GUILTY now, but this feeling will pass if you refrain from smoking more.
   LEARN FROM YOUR MISTAKES. Think about why you smoked in that situation
   and plan ahead so that it won't happen again.
WITHDRAWAL SYMPTOMS

Many people have few or no withdrawal symptoms, and withdrawal itself is often over dramatised, which only serves to make people more worried about quitting. Don't use withdrawal symptoms as an EXCUSE to go back to smoking. They WILL pass with time.

<table>
<thead>
<tr>
<th>SYMPTOM</th>
<th>WHAT YOU CAN DO</th>
</tr>
</thead>
<tbody>
<tr>
<td>COUGH</td>
<td>Quitting may increase coughing and mucous for a short time as your lungs clean themselves out. Deep breathing and light exercise will hasten this process.</td>
</tr>
<tr>
<td>HUNGER</td>
<td>Only one-third of quitters gain weight. It is much more important for your health to quit smoking, than to worry about the addition of a few extra kilograms. Refer dietary advice p.15.</td>
</tr>
<tr>
<td>DIZZINESS OR HEADACHE</td>
<td>A walk in the fresh air will help. Take it easy and try some deep breathing.</td>
</tr>
<tr>
<td>CHANGE IN SLEEP PATTERNS</td>
<td>Try deep breathing. Drink less coffee, none after 4 p.m. If you still can't fall asleep, or wake up, read, knit or do a crossword.</td>
</tr>
<tr>
<td>DRY MOUTH OR BAD TASTE IN MOUTH</td>
<td>Brush your teeth. Use breath freshener. Drink lots of water. Chew gum.</td>
</tr>
<tr>
<td>SYMPTOM</td>
<td>WHAT YOU CAN DO</td>
</tr>
<tr>
<td>-------------------------</td>
<td>-------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>MOUTH ULCERS</td>
<td>Try deep breathing to help you relax. Drink lots of water. Use a chemical preparation for ulcers available from your chemist (e.g. Bonjela).</td>
</tr>
<tr>
<td>LACK OF CONCENTRATION</td>
<td>Work for shorter periods, and take plenty of breaks. Your difficulties with concentration will pass with time.</td>
</tr>
<tr>
<td>BLURRED VISION</td>
<td>This is temporary and will pass with time. Try deep breathing to help you relax.</td>
</tr>
<tr>
<td>PAIN IN CHEST</td>
<td>See your doctor as soon as possible.</td>
</tr>
</tbody>
</table>

If any of these symptoms persist, consult your doctor.
HEALTH HAZARDS OF SMOKING

SMOKING AND LUNG CANCER

Smoke from cigarettes contains over a thousand different chemicals, many of which are capable of causing cancer. The present lung cancer epidemic would not exist but for cigarette smoking. It is an extremely rare disease in non-smokers. The risk of lung cancer is greatly reduced if you give up smoking.

SMOKING AND HEART DISEASE

Cigarette smoking contributes substantially to death from heart disease. Smokers have been shown to have more atherosclerosis (narrowing and plugging of arteries) than non-smokers. Atherosclerosis can lead to a crippling or fatal heart attack. Smokers are two to three times more likely to suffer a heart attack than non-smokers, but the risk is greatly reduced if you give up smoking.

SMOKING AND CHRONIC BRONCHITIS

Emphysema is a rare disease in non-smokers, but is common in heavy smokers. With emphysema, the lungs start to 'rot'. The lung tissue hardens and the pressure of breathing blows holes in it. When this happens, the emphysema victim cannot breathe normally, and as the disease progresses, he/she becomes a breathless invalid. Emphysema is incurable.

SMOKING AND UNFITNESS

Cigarette smoke contains carbon monoxide - a poisonous gas which replaces oxygen in the bloodstream. When this happens, as it does in smokers, the muscles don't get enough oxygen to work efficiently. Also the brain and heart are starved for oxygen. This, along with smoker's bronchitis and emphysema, is what makes smokers so much less fit than they should be.

SMOKING AND PREGNANCY

Babies born to smoking mothers are more likely to be born dead (stillborn); more likely to be born underweight; more likely to die soon after birth.
The benefits of being a non-smoker are many. Here is a list of some of those benefits that you can draw on to help your callers stay quit.

Within 24 HOURS of becoming a non-smoker your body will begin to repair itself:

- the CILIA in the air passages of your lungs will rejuvenate. Cilia are the tiny, hair-like particles which clean any foreign matter or impurities in the air inhaled into the lungs. Cigarette smoke has a paralysing effect on cilia and over a long period of smoking the efficiency of the cilia action dererorates. The repair process will start as soon as you stop smoking.

With a FEW WEEKS you are likely to notice some rewarding physical changes

- your sense of SMELL and TASTE will begin to improve;
- if you have a SMOKER'S COUGH, it will disappear;
- you will no longer be as SHORT OF BREATH;
- your EXERCISE TOLERANCE level will improve.

IN ADDITION to these benefits, becoming a non-smoker has several advantages

- your BREATH will be fresher;
- your SKIN COLOURING will improve and you need no longer be concerned about yellowing fingers, nails and teeth, or premature wrinkles;
- you will no longer SMELL of stale smoke and cigarettes;
- you need no longer worry about the FIRE hazards of cigarettes;
- the health of those who must breathe your smoky air, especially CHILDREN, born and unborn, will no longer be jeopardised;
- there are considerable long-term ECONOMIC benefits. If you smoke a packet of cigarettes a day, you'll save approximately $620.00 a year. That's about $25,000 over 40 years. Start thinking what you'd like to spend it on;
- as a non-smoker, you'll set a GOOD EXAMPLE to others, especially children;
- women who smoke and take ORAL CONTRACEPTIVES have an increased risk of coronary attack, stroke and blood clots. The risk of developing these conditions whilst using the pill is very small but smoking increases the risk considerably.
COMMON QUESTIONS AND ANSWERS

1. IS THERE SUCH A THING AS A SAFE CIGARETTE?

There is no such thing as a safe cigarette. Whilst different brands of cigarettes vary in tar and nicotine content, the best protection against disease is abstinence. Smokers who change to a lower tar and nicotine brand usually end up smoking more cigarettes to compensate for the smaller amount of nicotine per cigarette.

2. CAN I BE A SOCIAL SMOKER? CAN I HAVE JUST ONE?

It is very rare for a smoker to be able to limit him/herself to one or two cigarettes on certain occasions. Most smokers, having allowed themselves to smoke in one particular situation, gradually increase the number and type of situations in which they permit themselves to smoke, until they reach the level at which they used to smoke before they quit.

3. WHY DO SOME PEOPLE FIND IT EASIER TO STOP THAN OTHERS?

People vary in the extent to which they are addicted to or dependent on cigarettes, according to the amount smoked, nicotine content, and the way in which their bodies have habituated to nicotine. Apart from the pharmacological aspects of cigarette smoking, people will differ according to how psychologically dependent they are on cigarettes, or how ingrained the habit is. For example, one person might have only a few situations in which he/she automatically reaches for a cigarette, while another will have a wide range of situations. All of these factors account for differences in the apparent ease with which people quit smoking.

4. IS THERE ANY SUBSTITUTE FOR SMOKING - TO REDUCE WITHDRAWAL SYMPTOMS?

There is no magic technique that will stop you smoking for good, or make withdrawal easier to bear. Quitting smoking is difficult, but not impossible. With some strong commitment and determination and a little planning, you can overcome temptations to smoke. Refer to withdrawal symptom section, p.7.
5. CAN I SMOKE A PIPE OR A CIGAR WHILE I'M TRYING TO STOP?

Usually pipe and cigar smoke is not inhaled since it is extremely potent. A former cigarette smoker changing to a pipe or cigars will find it extremely difficult to refrain from inhaling, and is therefore unlikely to gain much benefit from trying this technique. Cigar and pipe smoking is also associated with cancer of the mouth.

6. WHY DO I GET IRRITABLE WHEN I STOP SMOKING?

Irritability is one of the most common withdrawal symptoms experienced when people quit smoking. Both your body and mind are adjusting to doing without something they have been dependent on for some time. Irritability will pass with time. Be patient and let your body adjust.

7. WHY DO PEOPLE PUT ON WEIGHT WHEN THEY STOP SMOKING?

Only about one third of people gain weight when they quit. This is due in most part to the desire to put something else in their mouths, besides cigarettes. Eating extra food is fine, providing you keep mainly to low calorie foods, and do some light exercise to balance that extra intake of food. See dietary advice, p.15.

8. WHY DO PEOPLE WHO HAVE STOPPED SMOKING STILL CRAVE FOR A CIGARETTE FOR YEARS AFTER THEY'VE STOPPED?

Smoking is a behaviour very much influenced by mood states and cues from the environment. When someone quits smoking, the cues to smoke are still operating and continue to do so in some people for a long time afterwards. Urges to smoke like this occur particularly in situations in which the person previously most enjoyed a cigarette.

9. HOW LONG DOES IT TAKE MY LUNGS TO CLEAR?

Coughing and mucous are likely to increase after quitting smoking as the lungs clear themselves. This process may take several weeks. Restoration back to normal lung function is dependent on the amount smoked and number of years smoked. For most people, smoking cessation leads to a significant detectable improvement in performance on standard lung function tests after one year's cessation.
10. HOW DO I KNOW IF I HAVE LUNG DAMAGE?

The only sure way of detecting lung damage is to have a check-up by your doctor. Persistent coughing is one sign that smoking is having an effect on your body, as is shortness of breath. Coughing blood should always be investigated by your doctor.

11. DOES MY SMOKING AFFECT OTHERS AROUND ME?

People who live with smokers, particularly children, are more prone to respiratory difficulties. Those who breathe other people's smoky air are inhaling unfiltered cigarette smoke, unlike the smoke inhaled into the smoker's lungs which has been filtered. Smoking near someone who has a heart condition can actually contribute to a heart attack.

12. IS IT BETTER TO STOP COLD OR CUT DOWN GRADUALLY?

Either method can work, but it is generally much more difficult to achieve cessation by cutting down. A rigid plan needs to be followed if a person intends to cut down before quitting. The choice to cut down gradually rather than stop cold should not be an excuse to put off stopping for as long as possible.

13. WHAT ABOUT HYPNOTHERAPY OR ACUPUNCTURE?

These methods do work for some people, but it should be remembered there is no magical technique for quitting. To be successful these techniques both require a great deal of commitment and determination to quit.

14. WHY DO MY SMOKER FRIENDS ENCOURAGE ME TO START AGAIN?

Smoking was something that you and your smoker friends had in common - something you could share. Don't let them talk you back into smoking. There are plenty of other things you can share with them besides smoking.
15. SHOULD I CARRY MY CIGARETTES WITH ME?

Carrying cigarettes around with you always provides you with an opportunity to smoke when you are tempted, and therefore can lead you closer to smoking. However, some people find that carrying cigarettes with them 'just in case' makes them more confident in handling urges to smoke. You make the decision, but be honest with yourself when you think about why you want cigarettes with you.

16. ARE VITAMINS HELPFUL WHEN STOPPING?

Vitamin B can be helpful in reducing some of the tension you feel when you quit smoking, but no vitamin will make you a non-smoker for life.
DIETARY ADVICE

The best way to keep your weight down is to develop good eating habits. Here are some simple steps:

. have three regular meals a day;
. eat fresh fruit and vegetables every day;
. eat slowly and chew well;
. avoid nibbling - in case of emergencies have low joule (calorie) food within each reach;
. cut down on alcohol consumption;
. take time for daily exercise;
. avoid foods high in sugar and fried foods.

Making a fresh start without cigarettes is far healthier for you than adding on a few extra kilograms.
HEALTHY STATE CENTRE

The Healthy State Centre is a resource centre located under the Rundle Street Car Park. It is an outlet for reliable up-to-date information aimed at promoting a healthy lifestyle. A variety of publications and other material are available on a number of health matters, particularly smoking cessation, nutrition, stress and relaxation, and weight control and exercise.

The Centre has an experienced stop-smoking counsellor available (Sheila Murray, and is open during the following hours:

- Monday 2.00 p.m.-5.30 p.m.
- Tuesday - Thursday 9.00 a.m.-5.30 p.m.
- Friday 9.00 a.m.-8.00 p.m.

The telephone number is (08) 223 1412.

Please refer all enquiries from current smokers wishing to quit to the Centre.
APPENDIX 8: Length of time abstinent, by presence of negative affect

<table>
<thead>
<tr>
<th>Length of time abstinent (days)</th>
<th>Negative affect</th>
<th>No negative affect</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
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<td>112</td>
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<tr>
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<td>168</td>
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TOTAL 39 (69.2%) 19 (32.8%)

Number of missing observations = 10
**APPENDIX 9: Length of time abstinent, by presence of social pressure**

<table>
<thead>
<tr>
<th>Length of time abstinent (days)</th>
<th>Social pressure</th>
<th>No social pressure</th>
</tr>
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<tbody>
<tr>
<td>1</td>
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<tr>
<td>336</td>
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</tbody>
</table>

**TOTAL**

- **20** (32.8%)
- **41** (67.2%)

*Number of missing observations = 7*
APPENDIX 10: Length of time abstinent, by presence of coping response

<table>
<thead>
<tr>
<th>Length of time abstinent (days)</th>
<th>Coping response</th>
<th>No coping response</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
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TOTAL                       | 60(88.2%)       | 8(11.8%)          |

Number of missing observations = 0

193.
APPENDIX II: Length of time abstenent, by presence of behavioural coping response

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TOTAL 58 (85.37%) 10 (14.7%)  

Number of missing observations = 0
APPENDIX 12: Length of time abstinent, by presence of cognitive coping response

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TOTAL 39(57.4%) 29(42.6%)

Number of missing observations = 0
APPENDIX 13: Length of time abstinent, by number of coping responses

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196.
APPENDIX 14: Length of time abstinent, by number of behavioural coping responses

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TOTAL 10 38 26 3 1
### APPENDIX 15: Length of time abistent, by number of cognitive coping responses

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198.