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A Social Marketing Approach to Media Intervention Design in Health and Lifestyle Education

Brahm Canzer

A Thesis

in

The Department

of

Education

Presented in Partial Fulfilment of the Requirements
for the Degree of Doctor of Philosophy at
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Abstract

Instructional Design development has not yet produced a dedicated comprehensive model concerned with instruction for specialized areas of education where attitude-based behavioral change in social settings is the primary goal. As such, health and lifestyle education is one specialized field which is generally approached by instructional designers using an eclectic selection of conventional education and communication models which may often be unsuitable for the task.

The growing importance and complexity of this field has resulted in calls for better structure, organization and strategic thinking. Research suggests that an alternative intervention design paradigm is needed which will help direct needs assessment, suggest strategic design and measure effectiveness of the intervention effort.

This thesis describes a theoretically based paradigm and then demonstrates its efficacy through an applied intervention study on alcohol consumption behaviour directed at college students.

A large sample of students (N=506) was surveyed using a multi-dimensional questionnaire designed to provide comparative information for diagnosis, intervention design and evaluation of intervention effort. A smaller group (N=51) of students was evaluated before, during and after the intervention effort in order to track profile changes.

Intervention comprised the classroom presentation of a commercially available educational video-taped lecture on the alcohol industry, advertising effort and health related information and a feedback session where student survey responses were presented in order to foster discussion about peer behaviour and attitudes.

Nearly half of the heavy drinkers treated to the intervention effort reduced the amounts of alcohol consumed and two-thirds reduced the number of times they went to high risk social environments where alcohol consumption was likely to occur. Traditional mediated interventions have rarely demonstrated such strong impact and more often focus on more limited success measurements of design styles,

knowledge learned and behaviour intention toward healthier behaviour.

Overall, results support the belief that the paradigm can guide health and lifestyle education intervention campaigns concerned with alcohol, smoking and other substance abuse cessation, sexually transmitted diseases and eating disorders.

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The doctoral program of study in educational technology which concludes with the submission of this thesis would not have been possible without the generous support and guidance of many people.

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Chapter I

Introduction

A variety of Instructional Design (ID) approaches following Gagne and Briggs' (1988) associationist model and those structured around different views of learner and teacher relationships, such as the cybernetic approach argued by Romiszowski (1981), Boyd (1981), Mitchell (1982, 1988), Powers (1973) have proven their general utility in a variety of traditional learning situations. Collectively, they have successfully offered educators a choice of structure and guidance for ID through greater understanding of learning and teaching styles as well as underlying processes (Reigeluth, 1983; Entwistle, 1981; Dick and Carey, 1985).

A further review of the literature indicates that established ID models following Gagne and Briggs and those from Social Marketing are the most popular guides to designing health education intervention campaigns (Kotler and Roberto, 1989; Novelli, 1990; Salmon, 1989). Additional direction comes mostly from theoretical frameworks such as the Health Belief Model (Rosenstock, 1990), Social Learning Theory (Perry, Baranowski, and Parcel, 1990), the Theory of Reasoned Action

(Carter, 1990), Attribution Theory (Lewis and Daltroy, 1990), and to a lesser extent a plethora of other psychology theories which might be favoured by the interventionist (Prochaska and Di Climente, 1982; Glanz et al., 1990).

The thesis will argue, based on its literature reviews that Educational Technology theory and practice has historically focused on means to improve teaching and learning in settings where the primary goal of instruction is the acquisition of the teacher's model of knowledge or skill, and that this orientation is flawed when applied to health and lifestyle education because it fails to adequately address the importance of the learner's goal directed social behaviour.

ID development has not yet produced a dedicated model concerned with designing instruction for specialized areas of education where attitude-based behavioral change in social settings is the primary goal instead of the acquisition of some knowledge base or skill. As such, health and lifestyle education concerned with smoking, alcohol and other substance abuse cessation, sexually transmitted diseases and eating disorders, is one specialized field generally approached by instructional designers using an eclectic selection of conventional education and communication models which may often be unsuitable or inadequate for the task.

The guiding belief behind most creative work employing conventional ID models is that the rational learner will change his or her unhealthy behaviour to more healthy action once the necessary information has been communicated and is fully understood. Therefore, the focus of research has relied heavily on media selection and message design which can optimize this task. Great attention is particulary paid to the semiology of mediated messages and cognitive processes experienced by the target audience. When attitude or behaviour change is not achieved, summative analysis tends to dwell on questions of failure to communicate the correct message for the target audience. Research into social intervention campaigns suggests this simplistic orientation is incomplete given the complex nature of social behaviour (Baggaley, 1986a; Salmon, 1989).

The growing importance and complexity of the social marketing field has resulted in calls for better structure, organization and strategic thinking. As Thomas Timmreck (1988) suggests in "Health Education and Health Promotion: A Look at the Jungle of Supportive Fields, Philosophies, and Theoretical Foundations", a need exists for a comprehensive model built with the input from education, behavioral science, biomedical science, management, marketing and health education. What is needed by Educational Technologists is an alternative

intervention design paradigm which will help suggest strategic design and measure effectiveness of the intervention effort.

Overview of the Thesis Paradigm

This thesis is dedicated to that task. The intervention design paradigm will be constructed using contributions from a variety of established schools of thought but arranged in a way to provide educators with a step-by-step theory-based methodology for guiding the development, evaluation, and dissemination of health education material and intervention design.

The paradigm directs the instructional designer to look more closely at the contextual environment where the learner's behaviour occurs. By learning about the factors which contribute to behaviour in a specific social setting and viewing the learner as a cybernetic learning system dynamically interacting within a larger social system in which each influences the other, both the health educator and the learner can better understand the difficulties involved in trying to effect change and thereby, help motivate change toward healthier lifestyle choices.

The paradigm is comprised of a macro and micro level. The macro or systems level looks at five key system players and the environmental factors which influence the target audience.

These macro components include the consumer marketing industry, governments, educational bodies, the popular media and social and cultural factors influencing system behaviour.

The micro level of the paradigm focuses on individual and group-level understanding of the target audience through the use of a multi-dimensional cognitive profile. The cognitive profile is formed by examining the factors which theory suggests explain the behaviour and provides educators with a diagnostic instrument for developing intervention strategy, monitoring progress and providing feedback to target audience participants.

The John Abbott College Study

Public interest in the health and social problems associated with alcohol consumption is particulary directed at younger people in their formative years (Kilty, 1990; Loughlin and Kayson, 1991; Engs, 1990; Van de Goor, et al.,1990; Johnson, 1991; Page and Cole, 1991; Alexander, 1991). This thesis will include an illustrative intervention study of alcohol consumption of students attending John Abbott College in Ste. Anne de Bellevue, Quebec, Canada.

Following the methodology prescribed by the thesis intervention paradigm, the intervention effort resulted in 50% of heavy alcohol consumers reducing their alcohol consumption

behaviour and 67% reducing their frequency rate of going to high risk social environments at parties and bars.

The positive results of this intervention effort help support the belief in the efficacy of the paradigm to serve in a variety of health and lifestyle education settings especially those involving self-regulatory social behaviours.

Chapter II

Literature Review

General Systems Theory is a well established social science research approach often taken to study a variety of areas including anthropology, sociology, psychology, education, business and economics. Developed in the 1930's by scientists and engineers interested in better understanding of machines and natural systems, General Systems Theory attempts to organize, simplify and explain the activity of complex environments using common laws, rules and processes (Schoderbek, Schoderbek, and Kefalas, 1990; Bertalanffy, 1968).

Cybernetic Theory is a related area of thinking which focuses on the study of communication and control. Cybernetics provides social scientists with a framework for understanding the behaviour of people by designing models of human communication and control processes (Rapoport, 1986; Simon, 1981; Wiener, 1950).

The literature on educational technology often refers to certain key cybernetic concepts such as systems, communication, feedback to the learner, feedback to the

instructor and control. Cybernetics relates to several educational technology areas of interest including modelling, philosophy of education, instructional design methodologies, learning theories, communication technologies in education, media research and distance education (Mitchell, 1982).

The notion of "systems thinking" recognizes the inter-relatedness between the components of the system, the existence of boundaries which define the limits of the system and the causal relationships between variables within the system and between one system and another.

Investigation into the communication process has drawn attention to the key observation that people respond to the feedback they receive from their environment just as a thermostat responds to the ambient temperature of the air in a room and then activates or deactivates the heating unit accordingly. Inherent in this scheme is the understanding that the thermostat is **goal-directed** to maintain a temperature within a set range and is able to **control** its behaviour in order to achieve its goal. Similarly, a learner can be viewed as a **goal-directed** member of a social learning system capable of responding to feedback he receives and more importantly, able to set his own goals. Feedback in the cybernetic sense of the term, means input returned to the individual which can cause a change in his behaviour. Instructional designers must

be conscious of the possible reactions learners might have to their materials and the environments created by artificial means such as those found in mediated materials (Reigeluth and Schwartz, 1989).

Feedbacks loops, which connect the individual to the system, are identified as "deviation-amplifying" or "deviation-limiting". The former are expansive and can act to bring the learner to new levels of greater awareness and self-actualization but if negative, can result in learners abandoning the learning system out of frustration and anger. Deviation-limiting loops on the other hand, can help maintain learner behaviour around a pre-determined standard of performance. The instructional designer should make use of both tools to properly control the learning behaviour of the learner (Schoderbek, Schoderbek, and Kefalas, 1990).

Feedback received by the instructor from the learner during the formative evaluation stage of instructional design is critical to successful creation of sound learning materials (Weston, 1986). Virtually all instructional design paradigms consider the valuable contribution of the feedback component from learners (McCombs, 1986). In another sense, feedback is a two-way path whereby instructional designers, teachers and learners can each have an impact on the behaviour of the others within their system.

A central concept in understanding the way systems are structured and behave is the cybernetic Law of Requisite Variety (Ashby, 1956). Stated simply, the instructional system must contain more variety than the learner in order to maintain control of the learner. The law implies that the learning package must contain all of the possible selections and decisions possible from the user or must limit the learner's variety. If the feedback received from the learner is "outside" of the boundaries defined by the package, the system may stall, provide incorrect messages to the learner or cause some other dysfunctional behaviour.

The idea of educational technology helping to build variety in the learner so as to increase his ability to control his environment is a strong philosophical position held by many educational cyberneticists (Beer, 1982; Mitchell, 1982, 1988). Stafford Beer's (1982) model of selfhood in "Man In A Garrulous Silence" and his call on educators to enhance regulatory variety in the learner should be used by the educational technologist as a guiding philosophy. If Beer's thesis, that more regulatory variety in the individual means a more knowledgeable emancipated person better able to make choices in an environment of great complexity, is accepted, then educational technologists most certainly should work toward developing more variety in the learner.

Testing and research should be designed to discover whether more variety has been created within the learner using some given teaching methodology or experimental learning environment. The simple criteria for testing should be whether the learner can demonstrate greater cybernetic control (McCombs, 1989). Is the system providing feedback to the learner which can enable him to better control the complex variety he faces in his environment? If the answer is positive, then keep the system or teaching tool. The selection of the video-tape "Advertising Alcohol: Calling the Shots", in the John Abbott College study was inspired by this philosophy.

Gordon Pask's (1975, 1976) "Conversation Theory" addresses the notion of conversations or exchanges taking place between the learner and the learning module. For example, the learner may create a mental image of the teacher existing within the materials he is using and with whom he is carrying-on a conversation. This level of sophistication draws greater awareness of the communication taking place between participants in the education process.

Consistent with cybernetic thinking, the paradigm proposed in this thesis understands behaviour to be goal directed; that is to say, an individual's or organization's volitional behaviour is activated in order to achieve a subjectively perceived desirable goal. Understanding then, is achieved by identifying

goals and the control processes undertaken to reach them (Ajzen, 1985; Ajzen and Madden, 1986).

Furthermore, behaviour is understood to occur in a continuously changing social environment. For example, the behaviours associated with alcohol consumption of college students can be studied in the specific dynamic social environment of a party or bar and smoking behaviour of office workers can be studied while they perform their duties during the work day. Rather than attempting to understand and control alcohol consumption behaviour in all social situations, a more effective approach might be to focus on "high risk" social settings when undesirable behaviour is most likely to occur (Hull, 1981; Hull and Young, 1983).

The theoretical framework related to the components of the macro level of the paradigm will be presented first followed by those related to the micro level.

II.A The Theoretical Framework Related to the Macro Level

The macro level of the paradigm includes the following systems or environmental forces 1) the Consumer Marketing Industry, 2) Governments, 3) Health Education Organizations and Professionals, 4) the Popular Media, 5) Social and Cultural Environmental Factors. The cybernetic interaction between

these five components defines the environmental forces at work on the individual within any social setting.

II.A.1 Consumer Marketing Industry

Consumer marketing is an integral part of our social and economic fabric. Consumers, free to choose products and services they can pay for, thereby support the corporation which organizes and directs itself with the clear objective of serving its market better than industry competitors (McCarthy, Shapiro and Perreault, 1994).

Success is measured by growth in sales, market share and customer satisfaction. Success begets more success since financial rewards of greater profit levels allow for greater advertising campaigns and more marketing effort in general. Failure, too often, can result in corporate elimination from the marketplace. The Darwinian view of corporate survival is often used as a metaphor for the consumer marketing world where corporate decision-making out of sync with consumer market demand results in extinction (McDougall, Kotler and Armstrong, 1992).

The strategic behaviour pattern for corporate success is surprisingly simple to describe but difficult to execute successfully. Segmenting the population into homogeneous sub-groups with similar characteristics according to age, gender,

lifestyle and so forth provides the marketing manager a criteria-based method to identify and select target groups of customers. To the degree thought feasible by management, marketing strategies are then created to win over consumers in the target group. With customized message design and advertising, chances for success are generally improved over mass marketing philosophy (Sommers, Barnes and Stanton, 1992).

The unifying philosophy of the "marketing concept" requires all employees in the company to take a consumer oriented view to business practice. Specifically, the marketing concept calls for doing everything possible to make the target consumer happy while at the same time earning profit. Inherent in this orientation is the need to fully understand the wants, needs, motivation and behaviour of the target consumer. Strategic planning for the organization involves setting target goals in four primary areas of decision-making; product, place, promotion and price. Collectively, these are referred to as the "marketing mix" of strategies (Assael, 1993).

After research into the "external environments", that is, those factors affecting the behaviour of the firm and the target consumer, selection of strategies are considered. The external environments include economic, competitive, social, cultural, technological, legal and other elements of change.

The marketing manager recognizes that any set of marketing strategies will require on-going revision and even total revamping at times because of the dynamic nature of the social system in which business functions (Beckman, Kurtz and Boone, 1992).

This cybernetic model of the continuous flow of information about the external environments and then planning, implementing and controlling strategies intended to accomplish specific sales and marketing goals is a traditional one used in modern business and is usually referred to as the "marketing management process" (McCarthy, Shapiro and Perreault, 1994).

By studying commercial marketing, health educators may better understand the forces at work attempting to persuade consumers to consume unhealthy products or adopt related lifestyles. Furthermore, this thesis views the competing forces of the profit-oriented consumer market industry as both a primary cause of poor consumer decision-making as well as a source of opportunity to improve healthier consumer lifestyle choices (Fodor and Dalis, 1974).

Health educators should view health and lifestyle education in competition with the consumer marketing industry and its goals. After all, consumers of cigarettes, alcoholic beverages

and other commercial products are the targets of both organizations. It would make sense to include an understanding of opposing competing strategies in any strategic model. The tobacco industry wants the consumer to smoke, whereas the health educator does not. The strength of any competitor in battle is to know his enemy. In this case, the enemy is the consumer marketing industry which advocates unacceptable social behaviour (Kotler and Roberto, 1989; Assael, 1993).

Furthermore, there are opportunities for health educators to direct people to alternative healthier consumer products and thereby capitalize on existing forces working on the consumer. For example, if the focus of concern is to persuade people to drink water instead of alcoholic beverages or soft drinks, consider how successfully the strategy can work once water is treated as an alternative consumer product and educators work <u>with</u> the bottled water industry rather than simply <u>against</u> the alcoholic beverage industry. By recognizing the competitive forces among profit-oriented corporations, health educators may do well to simply support or "co-opt" one which offers consumers a healthier alternative (Advertising Alcohol, 1991).

In the Unites States, it is estimated, the alcohol beverage producing industry spends more than $2 billion on advertising to help generate over $90 billion of corporate sales annually. By extrapolation, the North American industry generates over

$100 billion of sales. These figures indicate the massive economic force drinking behaviour represents to the corporations, their employees and governments which benefit from direct sales of alcohol and indirectly through excise taxes.

By far the most popular and heavily advertised alcoholic beverage to college age people is beer. Content study of student magazines, newspapers, television and radio programming conducted for this thesis confirms the popularity of beer with college students. However, much advertising of hard liquor is also evident.

Exploratory interviews and focus group research with John Abbott students suggest the economic desire to spend less money is the prime motivator for selecting beer over hard liquor consumption. In fact, 90% of students indicated a preference for beer, with wine and hard liquor evenly split among the rest.

Perhaps the strongest environmental force acting on the individual health and lifestyle decision-maker is the consumer marketing industry. Well organized and self-financing, every industry is driven by an instinct for survival and growth. Barring interference from government regulation, only the

inability of an industry to convince a targeted group of consumers to buy their products can impede this process.

A second dimension of the consumer marketing industry is the internal competition among profit-oriented corporations. If consumers can be encouraged to make healthier choices from among the array offered by a profit-oriented industry, then success can be measured by consumers switching to particular brands deemed "better". Competition in the automobile industry has been distinguished by the enhanced safety features offered in different models. Those selling air bags, anti-lock brakes, child safety features and so forth have seen their sale grow while health educators reap the satisfaction of knowing that the safety message has indeed made it through to a large and growing car buying segment (Solomon, 1992).

Social Marketing

The notion of capitalizing on the public's familiarity with consumer marketing has not been missed by health and social educators looking for a model to help design campaigns for lifestyle choices (Young, 1989). Hence, social marketing as an off-shoot of consumer marketing theory provides health professionals with a popular and easy to apply model for intervention design. As a model for intervention design, social marketing success has indeed confirmed the validity of using a macro cybernetic structure of external environmental

forces and a micro level where the consumer exercises decision-making control as in the thesis paradigm being developed here.

The idea of using strategic business thinking and techniques to promote positive social behaviour such as non-smoking, non-drug abuse, safe driving and so forth fully emerged in 1971 with the publication of "Social Marketing: An Approach to Planned Social Change" by Philip Kotler and Gerald Zaltman.

Since 1971, the field of social marketing has developed its own specialized orientation to achieving positive social objectives and provides an oppositional perspective to consumer marketing effort. Borrowing from traditional profit oriented marketing, social marketing today has a proven framework for directing and controlling mass social change (Kotler and Roberto, 1989).

Social marketing most often concerns the "selling of an idea" rather than a tangible product (Self and Busbin, 1990). Similar in nature to service marketing, a growing branch of profit oriented marketing where services such as credit cards, car rentals and airline tickets are sold rather than tangible products, social marketing focuses on communication and persuasion. The target audience is moved from one way of

thinking about the service or idea to another where the action of adopting the desired behaviour is achieved.

As such, social marketing is about understanding the behaviour of the target audience, and about finding ways to redirect that behaviour. This simple objective is often more difficult to achieve than in conventional consumer marketing because social marketers are dealing with changing an existing attitude which may have been comfortably established in the target's mind for some time. Resistance to significant behavioral change is a great obstacle to the social marketer (Kotler and Roberto, 1989).

In contrast, asking a consumer to try a new candy bar or soft drink involves little behavioral change or perceived risk. Small movements are easier to achieve than great ones. Generally however, the social marketing focus requires drastic change in behaviour or complex problem-solving involving personal, social and cultural issues. In situations like these, such as adopting the use of condoms, complex information processing and deep involvement of the consumer is required and must be motivated by the social marketer (Pagel and Davidson, 1984).

Planning begins with the establishment of the organization's mission statement. This overview to the purpose of the

organization and the general direction of all strategic thinking is critical for directing and controlling decision-making at lower levels of the organization. The mission statement may be established by government charter or the board of directors. For example, the mission statement of the Health Promotion Directorate of Health Canada includes the goals "..to change the perceptions, attitudes and opinions that underlie an individual's health or lifestyle habits... to change social attitudes towards activities that are harmful to health" (Health, 1991).

As with traditional marketing, the social marketing plan would involve selecting appropriate decisions about the social product design, the distribution of the product, the price to the consumer and the promotional campaigns (Novelli, 1990).

The development of a specific social marketing plan, its implementation, direction and control originates and is guided by research. For example, a survey of college students may uncover a potential alcohol abuse problem. All of the relevant influences on the target audience would be studied to the degree deemed appropriate and a plan of strategies would be developed to change the behaviour of the students. The impact of the marketing effort would be examined in order to assess the effectiveness of the current strategy and the need for modifications (Luck and Rubin, 1987).

Social Product Design

In some cases, as with service marketing, the task at hand involves a combination of behavioral change and tangible product purchasing. Such is the case with promoting condom use. First the idea of using condoms has to be "sold" and then the actual behavioral change of buying them must be achieved. In other situations, there is no tangible product purchase linked to the campaign such as encouraging safe driving habits including not drinking and then driving (Mintz, 1989).

Distribution

The means of distribution of the product or service must be decided. For example, the distribution or availability of condoms on campus or information booklets about sexually transmitted diseases in the library or health centre must be approved or rejected in favour of other dissemination strategies (Ontario Ministry of Health, 1991). In the case of alcohol abuse, the Canadian Brewers Association distribution of wall posters for display in school corridors is a common strategy.

Price

The price or cost to the target audience may involve no monetary charge but may still have an emotional or psychological cost. For example, persuading a smoker to quit will in fact save him or her money but at the same time may

cause great stress and physical or social discomfort. Transferring these pricing concepts to the social marketing environment requires a different perspective and broader definition in the term. The designated driver who will not drink on a night out with his friends may be in fact paying a price of "lost fun and enjoyment" as seen through his eyes.

The social marketer should address these costs as quite real and significant to the target audience. Substitution for other benefits and enjoyment such as low alcohol beer or knowledge that the individual is doing the right thing which is appreciated by his friends and society as a whole may form the focus of persuasion to adopting this behaviour.

Promotion

Promotional or communication strategies may include direct personal counselling, mass communication, publicity and special promotions. Direct personal counselling or persuasion is commonly experienced when the target audience receives information, instruction and advise from a professional trained in the field. Doctors tell patients to stop smoking, lose weight and exercise, or risk heart disease. The health care professional may put the patient on a program of care or refer the patient to another health professional such as a nutritionist or psychologist (Bedworth and Bedworth, 1978).

In this type of situation, where communication is direct, personalized, regimented, monitored and readily modified to suit the unique requirements of the individual, motivation to change may be quite strong. The strength of the message is also enhanced by the social image of the health professional and the fact that often, a monetary cost is charged for services (Prochaska and Di Clemente, 1983).

Mass communication in the form of advertisements in magazines, television, radio, posters, billboards and so on serve primarily to inform and remind the consumer. Highway signs indicating the location of a fatal accident several years earlier may have dramatic immediate impact on drivers who are speeding by. Attribution theory suggests that people attempt to explain why events occur by drawing inferences about causal relationships from environmental bits of observed circumstantial information. Furthermore, since attributions can be learned, as illustrated by the campaign slogan "Speed Kills", most drivers will accept that the cause of the fatal accident can be attributed to speeding and will respond immediately by slowing down (Sears, Peplau and Taylor, 1991; Fox and Kotler, 1981).

Perhaps more important is the psychological reaction of the driver passing by the location where death occurred. Whether longer term behaviour is changed is debatable, but the number

of drivers who slow down in the dangerous road area ahead can be empirically determined. The deterrent value of the psychological reaction is similar to the use of signs that warn of radar police patrol or the parking of a police car at the side of the highway. The effect is immediate and serves as a reminder for the longer term.

Public service announcements (PSA) for or against some social behaviour must be carefully designed for the intended target audience. A successful message for safe driving targeted to middle aged, married men may be ridiculed and rejected by teenage drivers. The pop icon Madonna may be seen as an ideal spokeswoman for encouraging safe sexual practice among young adults that accept her lifestyle, but she may be rejected as such by more conservative and/or older audiences (Schiffman and Kanuk, 1987).

As commercial marketers have discovered, each target market is different in its perception of the intended message. The social marketer must therefore design and test the effectiveness of message design for each PSA. This focus on message design and visual communication theory is developed in greater detail later in this unit (Flay, 1981; Moog, 1990).

Furthermore, placing the PSA in appropriate media and specific programs attended by the target audience is critical to

efficient use of budgetary funds. For example, a message from Madonna to teenagers and young adults designed to take advantage of her familiarity as a music video performer can be achieved best by designing a PSA as a music video and played on the music video cable channel. In this way, the target audience gets the best persuasive PSA design without alienating other target groups who might get confused or offended by the Madonna endorsement.

There is general acceptance among social marketers that PSA are successful at the task of informing the targeted audience. However, to what extent they are successful at changing behaviour is not so certain. For example, a PSA concerning condom use may inform young adults that condoms can prevent sexually transmitted diseases but they have not been overwhelmingly successful in triggering a change in actual behaviour. Several informal surveys which were conducted by the writer at John Abbott College have showed a high level of awareness about condom use but have confirmed their use by only half the students. Gilchrist and Schinke (1983) in a study of other college students have shown that the reasons for failure to act on messages about condoms are complex and deeply rooted in cultural attitudes to condom possession and usage, especially among women students. This is especially troubling considering 90% of students they studied indicated a sexually active lifestyle.

Publicity is any unpaid communication and is perhaps the strongest marketing tool available. The reason for this lies in the perceived credibility and motivation of the message sender. The recent positive publicity about A.I.D.S. transmission, risk and more importantly the human side of the issue was strongly advanced by the public interviews with and news conferences of the HIV-positive sportsmen Magic Johnson and Arthur Ashe. The audience perception of these men, these heros of our culture, sharing their views and suggesting a change in social behaviour to an audience seeing no attributable personal financial gain by their action probably had a significantly greater impact than any official PSA (Hawkins, Best and Coney, 1989).

Furthermore, peers telling others in their social circle to change may have greater impact than those outside the social environment of the target audience. Therefore, group discussion, radio talk shows and television forums may act to motivate audiences far more efficiently than a PSA or paid endorsement. For example, a guest speaker at a school auditorium who tells his peer-aged audience about his unfortunate experience of losing a friend or relative in an automobile accident which occurred while he was driving under the influence of alcohol can help draw attention to the real consequences of the behaviour.

Special promotions can be thought of as any special activity promoting the social marketing issue. For example, passing out sample condoms in schools, bookmarks with message reminders to take care of public property, calenders with information on healthy lifestyle facts and special events like Earth Day can act to increase awareness, inform, remind and motivate behavioral change (Beckman, Kurtz and Boone, 1992).

Motivation Theory, Attitude Formation and Change

Social behaviour is generally assumed to be motivated (Sears, Peplau and Taylor, 1991). That is to say, a person will behave in a particular manner in order to achieve some goal or satisfy a need. That goal might be pleasure, social approval of their peers or whatever. To motivate someone, the individual must be convinced of the causal relationship between their behaviour, the outcome and the desirability of the outcome. The commercial marketing world has successfully applied this notion by convincing consumers that whiter teeth will increase sexual attraction, that an American Express card holder is socially higher up than a bank card user, that a sports car can help recapture lost youth and so on (Pagel and Davidson, 1984).

Implicit in the notion is the need to give positive reinforcement to the association between the desired behaviour and the perceived reward. Good advertising is that which has

the intrinsic affect of communicating the reward while viewing the advertisements. The individual can merge with the image in a way that blurs the distinction between reality and the illusion created by the advertisement (Polanyi, 1967). For a moment, reality is suspended as the consumer of Diet Pepsi actually shares a good time with Ray Charles.

On the other hand, if the advertisements do not confirm the real reward for buying the product, it is unlikely the target audience will believe that Diet Pepsi is really "more fun to drink". More so, if the target audience's peers ridicule his behaviour and beliefs, it is likely his behaviour will not be permanently altered. Experience and socially reinforced behaviour are pivotal in forming beliefs or cognitive models about the object or the behaviour related to the object. If an individual is told in a PSA that drinking low alcohol beer can be as socially acceptable as regular beer but the experience of the consumer does not reinforce this suggestion, then the belief will be discarded (Kilty, 1990; Loughlin and Kayson, 1991).

In concert with the cognitive component is the affective dimension to the object or the behaviour. How the consumer feels about drinking or people who drink weighs heavily in forming his attitude. This recognition of the cognitive and affective components constitute the core of Fishbein and

Ajzen's model of an individual's attitude (1980). To change an attitude, the social marketer must attempt to change beliefs and/or feelings about the object or the behaviour related to the object (Louden and Della Bitta, 1988).

It is in this manner that a PSA can have its greatest potential impact on attitude and hence motivating behaviour. By attempting to change the consumer's existing beliefs and feelings about drinking by showing drinkers in a negative way and providing truthful messages about the dangers of the behaviour, social marketers may be able to "re-position" the orientation of the target consumer.

Position and Re-positioning

Positioning refers to the internal mental image or schema a consumer has of the product, competing products and the behaviour of using these products. For example, generally speaking, the perceived status value of using an American Express card is greater than using Master Card or Visa, which are higher than using store charge cards such a Eaton; way down on the list is the K-mart or Woolco card (McDaniel and Gates, 1993).

In this case the criterion is the status value of possessing and using various credit cards. However, other criteria can also be of value in assessing the relative positioning of

competing cards. For instance, perceived cost to the user, number of retailers accepting the card and perhaps, degree of international recognition of the card.

Similarly, interviews and focus group research with John Abbott students indicated higher status image of women who drank white wine instead of beer and mixed drinks above white wine. Beer was generally perceived as the universally accepted alcohol drinking "image" of college students.

Multi-dimensional perceptual maps help show areas of congestion, where too many brands may be vying for the same perceptual space and areas open to unique positioning with little or no competition. A common strategy for commercial marketers is to re-position the image of the product or brand in the target markets mind to a more favourable place. Black Label beer was re-positioned several years ago as a swinging singles beer by use of sexually suggestive advertising and exciting lifestyle imagery (Assael, 1993).

Similarly, the EverFresh company has re-positioned the image of their fruit juice brands in the minds of younger consumers by distributing their beverages through vending machines, like familiar soft drinks. This message is reinforced by commercials on television which show attractive young people passing by the soft drink vending machine in favour of the

fruit juice machine next to it. The young man, having bought a soft drink and hanging around trying to meet girls is ignored repeatedly by attractive women in bathing suits heading for the EverFresh vendor.

The message is clear and successful in persuading the target market that they can in fact "do better" by substituting one behaviour for another. In this case where the behaviour patterns are remarkably similar, the task is easier to accomplish. The social marketer is not telling young people to stop drinking unhealthy soft drinks which cause cavities and are nutritionally worthless. Instead, they are being offered an alternative but similar product and behaviour pattern which is not all that different from what is already well entrenched in their minds. In fact, an improvement in social success, that is, meeting girls, is being associated along with the behavioral change to buying fruit juices.

Self-Image Theory

Probably most important of all social psychology theories is self-image or self-concept, that is, how an individual perceives himself and how he thinks others see him. Commercial advertising has always made good use of this theory by presenting products and their usage as short routes to improved self-image. Cosmetics, cigarettes and alcohol products have always promised improved social looks and

feelings of improved stature to their markets. Children wanting to look more adult-like will smoke and drink alcohol in attempts to experiment and explore adult identities remote from their own world (Sears, Peplau and Taylor, 1991).

Social marketers can make use of self-image theory by tying into the existing positive social images now used by commercial marketers to sell their products. For example, the healthy and youthful image popularized in commercial advertising for selling soft drinks and beer can also be positioned with the more socially positive behaviour of drinking water, fruit juices or milk. The camaraderie and male bonding used in beer commercials can also be used to position the idea of the designated non-drinking driver who cares so much for his friends that he's willing to pass up a night of fun for less fun but living friends who can appreciate this "sacrifice". The popular image of the hero and saviour could be used to change existing perceptions of the friend that won't drink or is afraid to risk drinking and driving (Solomon, 1992).

Self-image is closely related to the learner-controlled idea popular in education technology. Showing that the learner is in control of his environment and not the reverse can be a very powerful communication tool. This cybernetic approach to encouraging the individual to improve his understanding and

control of his behaviour can serve as a strong motivating factor for eating disorders, drug abuse, safe sexual practice and other social marketing campaigns (Kotler and Roberto, 1989).

Social marketing includes a wide variety of inter-related theories and practices which help nurture a more evolved, learner-controlled individual. In the final analysis, each case will demand a unique set of strategies which can change the target audience's attitude and subsequent social behaviour.

The best use of social marketing is in situations where the primary tasks are informing and disseminating information to target audiences which have yet to form strong attitudes towards the desired behaviour. This implies targets which are young and who are more "open" to suggestions to their self-concept.

Audiences which have small distances to move in their perceptual spaces are more easily moved than those who are far away. For the latter, smaller steps may be the wise choice for campaign planners. For example, trying to get people who never exercise to take up a regimen which is too demanding will likely fail. Instead, starting off with a reasonable goal for their level such as a step exercise for one minute and then

moving forward to the ultimate goal of regular exercise three or four times a week is more likely to succeed (Bailey, 1991).

Finally, it cannot be overstated that appropriate message design and media selection are crucial to the likely success of any campaign. Formative evaluation is essential in order to reduce wasted social marketing effort and scarce resources.

II.A.2 Governments

The three levels of government and their associated agencies are a growing presence in the health and lifestyle education field. Although motivated to address public health concerns in order to generate political popularity, ironically, government treasuries benefit by the continued existence of unhealthy social behaviours such as smoking and alcohol consumption. This contradiction in motivation requires health educators to recognize the reasons when and where governments may be a contributing force with them, when they may be against them and when they may be both at the same time (Kotler and Roberto, 1989).

In general, the public wants government action taken to deal with perceived problems such as alcohol and abusive drug behaviour. Furthermore, the criminal justice system as a branch of government must deal with individuals involved in

illegal behaviour such as drunk driving and distributing controlled substances.

The voting public judges the effectiveness of politicians by their actions dealing with social problems and related criminal activity, hence governments seeking continuing political popularity are motivated to deal effectively with publicly perceived problems. Until or unless a behaviour is perceived as a problem or the responsibility of government, little action from elected officials can be expected.

At the municipal level, action might mean providing recreational facilities such as parks, swimming pools, organized sports activities such as baseball, hockey and soccer and so forth to help direct drug-abusive youth toward healthier lifestyle choices. Other facilities such as libraries, social halls and meeting centres are also part of the infrastructure which are generally believed to provide for healthier social activities among all age groups in the population (Lovelock and Weinberg, 1984).

Governments also live with limited financial resources for these socially positive facilities and activities. Although most large capital infrastructure costs such as the building of a recreational centre would be shared by the two higher levels of government, funds are more difficult to secure in

these tougher economic times and more importantly, the operating budgets for these facilities must almost always be paid for by local ratepayers, a politically unpopular concern.

Thus one way to increase services is through savings gained by proactive programs. This idea is best understood and illustrated in the health care industry. Increasingly national and provincial/state governments play major roles in running the health care system. Limited funds raised through taxation or insurance programs can be freed up if preventative healthier lifestyle activity can be successfully communicated to the population (Kotler and Roberto, 1989; Flay, 1981; Kime, Schlaadt and Tritsch, 1977). For example, cigarette smoking is recognized as a leading contributing cause of a variety of preventable diseases including cancer, coronary disease and emphysema. The cost to the health care system treating these illnesses is enormous. If the number of smokers can be reduced through government legislation or educational intervention campaigns, then money can be saved and allocated to other social problems. This theme is understood by the profit and non-profit insurance industry which undertakes to educate its clients about a variety of prevention issues such as fire safety, theft and automobile accidents in order to help hold down insurance rates in general and offer lower rates to non-smokers (Salmon, 1989; Lovelock and Weinberg, 1984).

Ironically, when President Clinton spoke to the American public on national television in 1994 about the systematic relationships between social behaviour and high health care costs, he noted the association with crime, gun control and medically treating victims of gunshot wounds. Arguing that if Americans would stop shooting each other, it would save millions of dollars spent on health care costs. His point drew a variety of comments from the National Rifle Association, health insurance companies and the general public which reflected their respective positions on these politically sensitive concerns.

As government involvement in the health care field continues to grow, a systems view of the related effects of action or inaction will continue to play a role in politics and health areas. Systems thinking argues for greater understanding of the interconnection of players in the health arena. Government success at reducing health care costs through increased public compliance with healthier lifestyle will directly affect taxation policies, government borrowing, interest rates and other concerns which relate to public health behaviour.

The task is to judge the public and political will to involve itself in what is traditionally viewed as a personal decision-making area. The recent debate over bicycle safety helmets illustrates this point. Some political jurisdictions have

passed laws on the mandatory use of safety helmets. What was once considered the domain of the individual is now, in Ontario, at least, a domain shared with the provincial government. The reasoning is simple; head injuries suffered by cyclists are more expensive to treat by the provincially run health insurance system if the cyclist is injured without the protection of a safety helmet. This argument follows the similar debate over the use of safety belts in cars and protective equipment for sports participants. The argument will likely be settled in a compromise between those who pay the costs and those who bear the risk.

Government as a Force Against Healthier Behaviour

In some instances governments are not supportive of what appears to be healthier lifestyle choices. For example, although some branches of government play a strong public role against smoking, other branches in fact do a great deal to support the agricultural and manufacturing industries which produce tobacco products. The reason for this is simply that thousands of people and communities are financially dependent on those industries for employment and their economic well being. This economic position is also taken by government when industrial activity, mining, logging etcetera threaten wildlife habitat with pollution and other ecological damages (Kotler and Roberto, 1989).

Health educators should not expect that any government will be able or willing to help put industry out of business. The traditional reluctance of government to take the side of the lesser political pay-off should not come as a surprise to them. Similarly, they should anticipate the extent to which governments gain financial benefit from the industry concerned. Besides the direct income taxes received from employees and corporations, governments often earn large amounts of revenue through taxes or marketing policies.

For instance, government revenues from the sales and distribution of tobacco and alcohol products are well beyond the amounts that the profit-oriented industry earns. The average amount of taxes on a bottle of liquor in Canada is 83 per cent and 42 percent in United States. Although the Canadian liquor industry generates more than $3 billion in gross revenue, about $2.5 billion is in fact drawn off in taxes (Heinrich, 1994). Furthermore, in all provinces in Canada, the retail distribution of liquor is virtually a government monopoly; in Ontario this monopoly extends to the retail sale of beer. Indeed, just how motivated to reduce alcohol consumption can governments be when so much tax and sales revenue is generated by the status quo?

Although there are situations in which governments act to promote healthier behaviour, the role of government in our

society is a complex one often balancing one public force against another. As such, the health educator should accept the more likely position of government to be one of mediator between opposing lifestyle strategists. The educational technologist can aid this process by presenting the case for cost savings to government and improved public welfare through educational intervention campaigns.

The role of government must be viewed as both a force for and against healthier behaviour. All governments stand to lose large amounts of tax revenue if alcohol consumption diminishes. In addition, those governments which wholesale and retail alcohol have a vested interest in maintaining sales revenue. On the other hand, federal and provincial government health insurance plans are directly undermined by medical costs associated with alcohol related diseases and social outcomes such as automobile accidents involving impaired drivers.

II.A.3 Health Education Organizations and Professionals

Understanding the role played by health education organizations, institutions and professionals is important to the health educator. A taxonomy suggested by this thesis for both classifying and understanding their contribution to the system is based on the relationship that each enjoys with the target audience and the circumstances under which the target

audience sought them out. The possibilities can be thought of as a continuum ranging from an impersonal relationship under unsought circumstances to a personal relationship under sought circumstances (Kime, Schlaadt and Tritsch, 1977).

At one extreme is an impersonal setting involving learners who have not voluntarily sought out the situation. An example of this is the impersonal large hospital and staff who often only deal with target audiences during health crisis. Patients suffering heart attack brought to a hospital for life-saving treatment will be quickly educated about their condition, probable causes for their medical condition, necessary diagnostic testing and medical procedures, and changes in lifestyle and diet required for survival.

Patients and their families who are drawn into the closed reality of the hospital atmosphere and its sense of finality often become expert lay-persons regarding their own illness or that of a loved one. Clearly the urgency of the moment and the removal from distractions outside the hospital corridors create a unique learning environment for motivating patients to learn more about their lifestyle choices.

Under these circumstances, hospital staff including doctors, nurses, social workers and special educators work with patients and their families individually and in groups to

affect change. Uses of video tape and printed literature play a central communication role in this context. Monitoring of patient motivation to engage in more healthy lifestyle choices is usually supported by continued out-patient counselling and regular contact with doctors.

Attention should be paid to the patient's perception of the health educators involved. Although medical doctors are generally held in high esteem, their demeanour may not permit patients to feel comfortable asking questions or expressing feelings of confusion. Often it is the nurse who gets the lion's share of communication responsibility after the doctor has left the patient's bedside. Better communication skills for doctors and other health professionals is sometimes incorrectly considered unnecessary for the professions. Often the opportunity to take advantage of the expert image of the health professional is lost unless good communication skills are also present (Prochaska and Di Clemente, 1983). This problem area presents a grand opportunity for educational technologists to fill the void with better professional training, learning materials and methodologies.

The opposite extreme of the continuum is a setting involving a personalized relationship where the learner has sought out the services of the health educator. Again the motivation to learn and change lifestyle behaviours can be strong but in

these settings, the relationship in congenial and voluntary. The learner wants to know more and wants to change his behaviour.

Motivation to change can be influenced by both the learner's perception of the health educator's ability to help and the self-efficacy of the learner to affect personal change (Rosenstock, 1990; Prochaska and Di Clemente, 1982). Part of the job then of the psychologist, dietician, physio-therapist and other health educators is to recognize the importance of communicating their confidence and ability to reach patient and organizational goals and for the learner to feel able to succeed.

Health care organizations and professionals are found across the spectrum defined by the two extreme examples using the taxonomy described above. Not-for-profit organizations such as Alcoholics, Smokers, Gamblers, and Over-Eaters Anonymous, successfully offer a multi-step peer counselling based program to educate and alter lifestyle in a variety of problem areas. Community health centres and school clinics provide a variety of health education services in formats appropriate for the local target audiences often in conjunction with national and international organizations such as the Red Cross, World Health Organization, Lung Association and Heart Foundation.

II.A.4 The Role of Popular Media and Media-Related Issues

Popular media of particular interest to health educators includes film, television, video-tape, radio, audio-tape, books, magazines and newspapers which deliver information about health and lifestyle issues. These are strong pervasive forces for both good and poor lifestyle learning which need to be examined so that the way in which learner decision-making is influenced by mediated sources may be more fully understood.

II.A.4.a Consumer Marketing Connection

Popular media has a consumer marketing connection. The available range of lifestyle-based books, magazines and newspaper articles, radio and television programs, audio and video-tape programs and films dealing directly or indirectly with health and lifestyle interests has never been greater. The health educator has a great opportunity to assist in the proper production and distribution of these materials independently and in association with profit and non-profit organizations.

A survey of store shelves confirms the public appetite for health and lifestyle information and the consumer power which drives it. Exercise, weight-loss and stop-smoking audio-visual packages are sought-after products by learners looking for

professional help in dealing with often self-diagnosed lifestyle problems and concerns.

Connecting Buyers and Sellers

Besides the sale of health and lifestyle-oriented mediated consumer products there is another consumer marketing connection. Magazine publishers, eager to deliver a clearly definable market to the consumer marketing industry, segment the population into buying groups. For example, the athletic footwear industry can choose to promote a variety of specialized footwear for running, jogging, walking, basketball, indoor tennis, outdoor tennis, indoor court, high impact aerobics, low impact aerobics, and so forth in more general interest magazines such as "Sports Illustrated" or in special interest magazines such as "Walking".

This commercial relationship which provides a self-financing distribution system for consumer advertising tailored to an interested and highly motivated buying public, also provides the health educator with a channel of communication for promoting a variety of health and lifestyle information in the form of articles, advice columns and advertising. Although one might be tempted to assume that the effort is wasted on an audience that is already persuaded, research shows this to be quite the reverse (Moog, 1990).

Ironically, certain health and lifestyle magazines contain commercial advertising from these consumer marketing industries which contradict their supposed mission and the objectives of their readers. It seems that if the learner/consumer wants a magazine which will tell them they can be youthful, athletic, sexually attractive and at the same time can consume substances shown to cause illness and death, then the consumer marketing industry will sell them that magazine.

As an example of particularly dangerous and unhealthy behaviour, Jean Kilbourne displayed an advertisement of a young nursing-mother drinking a beer while enjoying a private moment breast-feeding her baby (Advertising Alcohol: Calling the Shots, 1991). The advertisement was taken from "Self" , a women's magazine supposedly concerned with exercise, nutrition and healthy living.

The television industry follows a similar pattern of segmentation and delivery of target audiences. With the expansion of video-tape program distribution, cable and satellite specialty channel services, it is likely that television will eventually approach the degree of specialty programming that is now commonplace in the print industry.

An examination of the variety of television and radio talk-show programs on everything from exercise and food preparation to lifestyle behavioral problems including alcoholism, bulimia, anorexia and substance abuse suggests that a growing communications network of people is emerging with shared concerns (Meyer, 1981).

Information dissemination and emotional counselling are often part of this commercial educational effort. Drawing increasingly larger audiences, talk-show programs such as Oprah Winfrey, Phil Donahue and local radio and television personalities have built their public reputations by addressing many health and lifestyle issues in a quasi-focus group and interview-style format. Audience familiarity with the "expert" guest author of a newly released book on a topic of debate allows target audience viewers to learn from open debate and discussion.

II.A.4.b Visual Communication Theory

Social Learning Theory suggests that people learn social behaviour by observing others demonstrating that behaviour (Bandura, 1977). Popular media present an enormous amount of lifestyle ideas, beliefs, and attitudes as part of entertainment programming and consumer advertising. Much of that learning is accomplished through visual communication effort.

Most educators are well aware of visual "language" in a classroom setting. Facial expressions and body gestures are readily interpreted by teachers and students. Similarly, the educational media producer of video and film needs to be aware of the possible interpretations of the visual message implied in his work. This awareness is well appreciated in other mass communication fields such as media advertising, television and film production (Salomon, 1979).

The Framing of Knowledge

Developmental theories espoused by Piaget, Bruner and others suggest that a child acquires knowledge about the world by physically exploring it (Sears, Peplau and Taylor, 1991). Visual knowledge about the environment is melded with other sensory information such as hearing and smell. As each new experience is processed, and subsequently understood, its meaning is added to the child's existing mental model of reality or schemata. For example, the visual information implied by a smiling mother, speaking in an approving, loving voice while the child brushes its teeth correctly all act together to reinforce a positive association with the behaviour (Sears, Peplau and Taylor, 1991). It is relatively easy to communicate an enormous amount of cognitive and emotional information about a consumer product or the behaviour of using the product simply by presenting the image of the "smiling mother" in an advertisement (Moog, 1990).

The meaning of the image of the "smiling mother" is perhaps one of the most universally understood in the world; it is supra-cultural. All cultures, social classes, age groups and genders would undoubtedly interpret the meaning in a common manner. However, it would not be safe to say that the image of a "smiling mother" with a lit cigarette in her mouth would be decoded in a common way. Ultimately each person has its own subjective, personal knowledge of the image (Polanyi, 1967).

The concept of framing is useful in this connection. Framing defines the boundaries of what is in view but also can be thought of in the metaphorical sense of a cultural, social and individual frame of reference (Barthes, 1967). For example, in the first case, the television monitor placed at the front of a classroom frames the visual presentation for students seated before it. Other visual stimulation will tend to fade from focus as students are drawn into the visual frame created by the monitor. This focus can be increased by dimming the lights in the room and decreased by creating other visual stimulations close to the monitor: e.g. the teacher walking close to the screen in the viewer's line of sight.

The concept of framing also suggests the importance of spacial relationships between objects which share a frame. For example, the image of the beautiful woman and the brand of cosmetics she prefers next to her face are presumed to create

a strong association in the viewers mind that the brand of cosmetics and the beautiful woman go together like two sides of the same coin (Moog, 1990).

This strength of association and the acceptance of cause and effect is a well developed tool in the media advertising business. Cosmetics and jeans are bought by women for the promise of beauty and youth whereas men buy cars, beer and soft drinks for sex appeal.

Although the compressed, framed information in an image can be powerful, there is also a risk that not everyone in the viewing audience perceives and decodes the same message; furthermore, not everyone decodes the intended message. Each person has his own schema of the "smiling mother" which becomes activated by viewing the image. In selecting images, the media creator draws on what he hopes are commonly understood meanings in his audience. Formative evaluation of the media package is always needed to validate the integrity of the meaning (Baggaley, 1986a; Weston, 1986).

Semiotics

The heart of understanding visual language is the ability of the mind to interpret or decode symbols and signs. These serve as cues to schemata of information which can be activated by viewing the associated image. For example, an image of a woman

smoking a cigarette will cue the viewer to activate several schemata. Consciously and subconsciously, the viewer will begin the process of decoding the symbolic information presented in the image (Salomon, 1992).

One schema for "smoking" will emerge along with the associated information about social acceptance, parental opinion about the behaviour, peer opinion, cost and so forth. Another schema of the "woman" herself will be activated. Who that woman is in the mind of the viewer is fundamental to the tacit meaning understood by the viewer (Polanyi, 1967). If she "looks like" their mother, or sister, or a prostitute, or a corporate lawyer, the meaning of the whole image will be quite different.

Therefore, to design an image with the most appropriate symbolic coding, a creative artist must frame the image in its proper context for the intended audience, verifying that each symbol contributes to a total understanding which is intended. It is not uncommon even in the media advertising world for conflicting symbolic messages to boomerang back in the face of the advertiser. Similarly, health media designers are aware of the boomerang effect when showing undesirable behaviour such as smoking, to an audience of smokers (Baggaley, 1987).

The power of symbolic information can be better understood by considering symbolic meaning in the context of a hierarchy of semiotic effects. On a low level of the hierarchy is symbolic information of little significance or impact on the viewer other than the obvious interpretation of the sign (Polanyi, 1967). For instance a stop sign on the road is informative but presents little or no deep emotional meaning for the viewer.

On the other hand, the image of a seductive young woman looking at the male viewer in an advertisement for men's cologne reaches far deeper than simple informative communication. The image can stir sexual feelings, fantasy and escapism. The emotional impact of this experience is far greater than what would be experienced in the case of viewing a road sign.

Related to the notion of a hierarchy of effects, is the school of psychology which views symbolic communication as subconscious and even religious. In "Man and His Symbols" (1964), Jung addresses the psychoanalytic qualities of symbolic interpretation of dreams. Jungian psychoanalysts view dreams as the language of the subconscious reaching out to the conscious mind. By decoding the highly personalized meaning attached to symbols appearing in dreams one is able to better understand the subject's meaning.

Jung's belief in common symbolic forms which emerge in all of man's subconscious thinking is shared by many who see the universal culture of archetypes present in all people. Some even see personalized communication with God expressed through the visual archetypal symbols experienced in dreams, meditation, prayer and near-death experiences. For example, the commonly reported vision of a bright warm light and the feeling of closeness to God is explained in terms of a shared spiritual understanding (Gellert, 1991). At a more fundamental level, Alan Watts points out man's sensitivity and consciousness of polarity in nature (Watts, 1963). The ideas of good versus evil, hero and villain, heaven and hell, male and female are common pairs of associated concepts which have found their way into popular myths and religious experience. For the message designer, it is important to recognize that the reference to one side of a concept will simultaneously suggest the existence of its opposite, and that powerful archetypal images can sometimes be generated through visual symbols.

Commercial Advertising Illustrations

To illustrate the ideas of visual communication consider the following analysis of two health related advertisements from popular commercial magazines. The message design which works well for the positive positioning of these products can serve

to suggest methods for alternative, more socially positive behaviour.

In view of the highly subjective nature of the semiotic process, the following interpretation may not match that of the reader's. Without a formal structure or grammar, visual language lies within the mind of each viewer. The tacit level of understanding of which Polanyi speaks cannot be shared with others just as prayer and meditation cannot.

Advertisement for Johnnie Walker Scotch Whisky: Ski Magazine

The distilling industry traditionally ignored the under-35 age group until the early 1980's, finding more than enough sales with older target markets. But as sales faltered, the industry reconsidered the baby-boomers born between 1946 and 1965. Constituting 85 million consumers, this sector of society will no doubt continue to attract companies who may have looked elsewhere for business in the past.

The question the industry faced was how to "re-position" this product which was not seen as part of the target market's lifestyle. The answer was simply to create a variety of appropriate lifestyle advertisements which included the introduction of the idea that distilled alcohol was a part of the overall desirable lifestyle behaviour.

This communication strategy is illustrated in the "Ski" magazine advertisement for Johnnie Walker Scotch Whisky. Two attractive women in the target market age group are shown riding a chair lift to the top of the ski hill and doing what most people do, look out for attractive skiers of the opposite sex to flirt with.

On a cultural level, the frame is set with two attractive young women sitting on a chair lift. The background is blurred so that our focus is on the two women, their faces and more suggestively, their bottoms. All the elements suggesting sexual attraction, flirtation and interest in males is readily decoded from the image. The question of course is: which man are they admiring as they twist to look backwards down the hill? The answer is the man who drinks Johnnie Walker. This is the personal frame of reference for the target audience of young males and females whose idyllic lifestyle of ski and apres-ski activity is more likely escapist fantasy than real.

The advertisement neatly deals with the issue of sexuality by placing the flirtation within the context of a motto with a twist. "I just saw what I want for Christmas. And I bet he drinks Johnnie Walker" adds humour and lightness to a questionable behaviour by young women in our society. Portraying women on the prowl for men to take to bed after a day swishing down the slopes is a risky venture. However,

these women counter the potential negative association of their behaviour by the way they look and how they are framed. Their upper social class image and dress and secondly, their location on the chair-lift neutralizes the social risk considerably. Had this line come from the mouth of a woman standing at a bar with dirty beer glasses, our reading of the line would have been entirely different.

Another way to interpret this image is to read it as a suggestion about how to stand out and be noticed. Most people in the target audience would be found drinking beer in the bar after skiing. In that it helps one to be seen as different and sexually more attractive, Johnnie Walker is the preferred substitute. Today, it is not uncommon for women to drink white wine with club soda as an alternative to beer for the improved image of the wine drinker over the beer drinker. This idea is well worked in media advertising for cars, colognes, wines and so forth.

By portraying attractive lifestyle images which show alternatives to alcohol consumption, it is conceivable that non-consumption or moderate consumption of alcohol can be positioned as positively in the target audience's mind. For that matter, any socially desirable behaviour such as reduced or eliminated tobacco smoking, condom use and so forth can be marketed in a similar way.

Advertisement for Beyond: Cosmopolitan Magazine

The question "What kind of woman carries a condom in her purse?" stands out in the advertisement for "Beyond" found in Cosmopolitan magazine. The answer offered is attractive, thirty something, a career woman, intelligent and, most important, in control of her life..all of her life. She is not embarrassed to carry the condom in her purse because of its discreet packaging. In short, this advertisement ties into the positive psychographic image of today's young woman. The more this sort of technique is employed by health educators, the more likely the chances are that the behavioral strategy will succeed.

Regardless of how one approaches the origin of symbolic interpretation by the human mind, it is evident that a wide range of meaning can be derived by the individual viewer. Perhaps communication ability with the super natural world or merely compact efficient instructions for how to drive on the highway. Somewhere between these two extremes lies an area of study useful to health education media designers.

II.A.4.c Continual Response Measurement Methodology

A variety of conventional research methodologies such as interviews, focus group discussions and questionnaire surveys can be employed to better understand the social and cultural factors unique to the target audience under study. Continual

Response Measurement (CRM) technology, in conjunction with target audience focus group discussion can also be an especially useful research methodology for identifying socially and culturally defined influential issues as well as an applied research tool for formative and summative media evaluation (Baggaley et al., 1992; Baggaley, 1987; Nickerson, 1979).

The following section presents an overview of a pilot study which illustrates how CRM can be used as both a pure as well as an applied evaluative research tool. Although the focus of attention was audience reaction to an anti-smoking video, vicariously the purpose was to learn broader based health and lifestyle relevant social and cultural facts about the target audience.

Mediated Health Intervention Analysis

In the fall of 1991 the Canadian Broadcasting Corporation telecast the video production "Diary of a Teenage Smoker". Its objective was to send a negative message about smoking cigarettes to teenage girls, encouraging them not to start or to quit if they have started.

Since the use of film as a alternative medium to print for communication about health issues was first examined by Lashley and Watson (1921), certain social and cultural

reactions to mediated message design have been identified by researchers. This research has helped establish an inventory of good techniques for health educators including the use of factual information about the issue at hand and practical advice about how to go about changing one's behaviour. Preaching or the use of non-credible testimonials from poorly chosen spokesmen will generally be met by scepticism and mistrust (Baggaley, 1986a). Furthermore, summative evaluations of anti-smoking films provided by the Canadian Cancer Society have shown that smokers respond most positively to messages which are non-emotional, with practical suggestions about how to quit and which are somewhat sympathetic to the difficulties encountered by smokers who try to quit (Baggaley, 1986b).

How successful was "Diary of a Teenage Smoker"? Was its message design appropriate for the target audience? Given the research knowledge already established about health education media were any oversights committed in the design or editing process? Can any new lessons be learned for use in future message design for this target audience? Are there particularly sensitive points which might be included in the follow-up group discussion to enhance the learning experience? What general social and cultural points might be learned from the data and the group discussion which might shed more light on the social and cultural characteristics of the entire sub-culture to which the audience belong.

Student opinion about the effectiveness of the video was recorded second-by-second using a series of individual data collectors connected to a lap-top micro-computer.

On the whole, an analysis of the data flow showed that "Diary of a Teenage Smoker" was successful. In several respects, there was strong support confirming earlier studies of successful message design about health issues. For instance, when factual information was presented in a simple clear manner, the audience responded positively. As one might expect, testimonials presented by credible messengers were also well received. However, the video had some shortcomings which were clearly associated with the testimonial of an older female who was not liked by the audience. Had formative evaluation been carried out before the broadcast, an even higher success rate with the target audience could have been achieved.

A Pre-test and Post-test question reflecting the student's attitude toward people who smoke was asked so as to help establish the frame of mind of the students before and after viewing the video. The general feeling toward smokers was unfavourable for, as it happened, the sample was heavily made up of 59 non-smokers and only 11 smokers.

Though the changes were not statistically significant, the distribution (see table 1) shows that the video had a modest impact on attitude formation with a few more students shifting to a more negative position on the scale. Some of the smokers became defensive about their behaviour and in fact developed a more positive attitude to smoking than was evident before. This phenomenon has been demonstrated in several studies in the past (Baggaley, 1986b).

Table 1. Distribution of Attitude Scores Before and After Viewing "Diary of a Teenage Smoker".

	How Would You Describe Your Attitude Toward Smokers?				
	Unfavourable	Fairly Unfavourable	Neutral	Fairly Favourable	Favourable
PRE	9	42	12	7	0
POST	12	38	12	8	0

Audience Feedback

About a month after the above session, the same students were presented with graphs showing their group's second-by-second responses to the video. The graphs were projected on a screen using an overhead projector and the shape of the graph was discussed. The students were then asked to help explain the reason for the positive and negative movement in the graphs.

The video began with a technique that previous media research studies have shown to be effective: individual credible testimonials by teenage girls talking openly about how they came to be smokers, how they regretted making the choice, how difficult is was to break the addiction and so forth were presented in short sequences of 15 to 20 seconds (Baggaley, 1987, 1986b). When the video employed this technique and also presented factual information about the health risks and practical advice about how to quit smoking in a non-judgmental manner, the responses were positive. However, when the testimonial was from a questionable source, such as a non-peer, the responses were negative.

Messages which focused attention on alternative psychographic choices ultimately resting with the individual were also well received. Furthermore, the notion that the smoker is being controlled by a foreign influence beyond their control seems to be a good choice by the creative artists. It presents the audience with a different message than simply "smoking is bad..you shouldn't do it". Instead the image of the teen smoker is one of a controlled individual who is now challenged to throw off the bonds of this habit which controls her. What teen can resist proving to herself the ability to control her own destiny?

In summary, "Diary of a Teenage Smoker" was judged by the audience to be an effective message to send. Although certain identifiable segments could have been left out, the producers seemed to have employed several key successful health education message strategies. These included presenting credible testimonials dealing with facts about the real dangers of smoking and practical solutions to deal with the problem of quitting.

Summary of Media Related Issues

This section contains a brief discussion of some key points of interest to the health educator concerning the role of popular media. Among these was a recognition that the media provide a vehicle for positive and negative influence on individual decision-making. The economic forces which have helped create consumer marketing industries for healthier living are mixed in with industries that do the opposite. Part of the task for the health educator is to recognize this blend and help learners distinguish between just who is telling the truth. This task requires an understanding of the individual's social behaviour on a psychological level as well as the social norms associated with the target audience to which the individual belongs (Perry, Baranowski and Parcel, 1990).

II.A.5 Social and Cultural Environmental Factors

Perhaps the broadest and most complex component of the macro level of the thesis paradigm is that which encompasses the study of all relevant social and cultural influences on the individual. The more health educators know about the values, beliefs, attitudes and other socially and culturally defined characteristics of their target audience and how they relate to health and lifestyle decision-making, the more accurately they will be able to diagnose problems and prepare intervention programs which might successfully address them. This is as much an issue for health practitioners working in an alien culture as it is in their own. As is so often the case, incorrect assumptions can result in poor message design or complete campaign failures and wasted funds, time and effort (Flay, 1981; Salmon, 1989; Hyman and Sheatsley, 1947).

This thesis stresses the need to fully understand the immediate sub-culture of the target audience and the larger culture it exists within. In order to better understand the larger culture which most North American health educators would be expected to work within, a summary description drawn from the literature of core North American cultural values is first presented along with a commentary on their implications for health and lifestyle education (Schiffman and Kanuk, 1987). Secondly, the socio-economic environmental influences on individual decision-making will be examined in order to

help create a better awareness of the immediate sub-cultural social and economic conditions.

II.A.5.a Core North American Cultural Values

Achievement and Success: People are motivated to achieve socially and culturally honoured goals. Our culture celebrates achievement for those who overcome obstacles and adversities and admires the drive, discipline and talent associated with excellence. The sports and entertainment industry mirror these points. Our professional athletes are showered with wealth and fame and offer role models that Social Learning Theory suggests can be very motivating for specific target audiences. On a more mundane level, public recognition of effort and achievement at Alcoholics Anonymous meetings or Weight Watchers are consistent with this cultural norm as well (Schiffman and Kanuk, 1987).

Freedom: Our culture embraces the concept of individual liberty and concurrently suggests that others will not attempt to violate that right. As described earlier in the Consumer Marketing Industry chapter, this makes it difficult for government or others to impose lifestyle demands that are basically viewed within the realm of individual freedoms. Hence, passing legislation to ban smoking in public places, on wearing bicycle safety helmets and car seat-belts continue to be viewed, by many as threats to their personal liberty.

Health educators must be careful to deal with this issue appropriately. For example, the personal freedom of non-smokers to breath clean air, especially children, is usually held up as a counter-argument and the higher costs to the public health system are presented as reasons for action on safety devices.

As a footnote to this issue, it surprises many people to learn that many professional hockey players whose playing careers never included the wearing of safety helmets considered National Hockey League regulations a violation of their freedom. Some felt it would interfere with their style of play and indicated fear of getting hurt. Amazingly, even goalies chose not to wear safety masks for these same reasons. It was not until the 1960's, when the late Jacques Plante introduced the goalie mask that its social acceptance began to take root. Perhaps recognition of his great sports achievements and success created the critical mass needed to overcome whatever image concerns the hockey sub-culture had with wearing safety equipment.

Freedom to choose is also cited as a reason for young people to take up adult behaviours of smoking and alcohol consumption. Seen as a rite of passage and earned by virtue of their achievements in other areas such as school and employment, young people claim the freedom to choose how they

will live their lives. Health educators must recognize this particularly strong cultural force affecting individual decision-making among adolescent and college-aged people. Failure to be perceived as respecting the emerging adult will likely be met with immediate dismissal by these target audiences. This partial failure was demonstrated in the video production "Diary of a Teenage Smoker".

Individualism and Conformity: Being able to create individual identity and group conformity in a social system which desires both provides both opportunities and obstacles for health educators. On one level individuals continuously explore their culture in search of personal meaning and purpose; that which we call our own selves. The culture nurtures this search encouraging development and growth of the individual personality as part of normal human growth. On the other hand, humans are gregarious and individuals also wish to belong in socially defined ways. For example, some young women are particulary obsessed with body image and will go to extreme behaviours to achieve the right look. Diet, exercise, make-up all contribute to the desired look. Not lost on the consumer marketing industry, this cultural force is seen as a prime opportunity for the sale of a multitude of products and services promising success. The tobacco industry routinely promotes cigarettes to women as a means to prevent weight gain

and alcohol beverages suggest a means to look more glamorous (Moog, 1990).

Youthfulness, Fitness and Health: Our culture is enamoured with youthful appearances and lifestyle behaviours. Virtually anything which can help someone look and feel younger, fitter and healthier will be embraced. Breakfast cereals which help reduce salt and sugar in the diet, exercise clubs and personal equipment makers like Nordic-Track, instructional videos on exercise with Jane Fonda, cosmetics which block ultraviolet sunrays from causing premature aging are only some of the consumer marketing industries responses to the population concern with this area.

Efficiency, Progress and Technology: Our culture embraces the idea that when a better way to do something is found then change toward that behaviour is natural and represents human progress. Part of that acceptance is our belief that technological discoveries and inventions will solve current problems. Diseases are not easily categorized as preventable and non-preventable. Although the health risks associated with smoking has been well corroborated for many years, many people still seek cures from medical technology, the magic bullet, rather than embrace preventative medicine through personal lifestyle changes. The health educator is making progress in this field and personal responsibility for one's health is

being accepted at growing rates, however many will continue to live in ways contrary to good health and expect science to eventually deliver the no-calorie, no-cholesterol ice cream sunday.

II.A.5.b Socio-Economic Environmental Factors

Health educators should recognize the connection between socio-economic environmental factors present in a system under study and individual health and lifestyle decision-making (Alexander, 1991). Shared social problems result from common socio-economic experiences and choices. If the social norm of adolescent middle class girls is to define themselves almost exclusively by their perceived body image, then there should be little wonder that some of these women will experience extreme anxiety with failure to meet social norms and live dysfunctional lives. Similarly, substance-abusive inner city adolescents may buy drugs they have seen others in their neighbourhood buy at prices which reflect their economic level. Given the fact that crack-cocaine costs as little as a dollar per dose, is it any wonder that it has seared the inner cities of North America by providing the poor with a cheap escape?

Socio-economic associations are learned phenomena and are often reflected by the consumer marketing industry which advances them through advertising images and products. For

example, diet foods, weight control devices and medications are sold primarily to middle class women. A good example of advertising which illustrates the point clearly is the Special K breakfast cereal television commercial which appears to take place on board a cruise ship. Two women in their mid-twenties are presented in bathing suits sunning themselves on lounge chairs in front of a large swimming pool. One gets up and is seen walking past the other with obvious envy. The voice over explains the jealousy and the source of one woman's successful effort at maintaining her lower weight and more beautiful body. Special K for breakfast is sold as part of the solution to a lifestyle change to sensible eating habits and exercise.

Though the message is fundamentally truthful, it illustrates two points; that this health issue is connected to the specific socio-economic target audience of middle class women presented in the commercial and that the consumer marketing industry will respond when revenue can be derived from their involvement. In this case, a healthier behaviour is being promoted but along with the perpetuation of dysfunctional, obsessive thinking.

Selling cigarettes to women as an alternative solution to weight control is a common advertising strategy which replaces one problem with a far greater unhealthy lifestyle choice. In both cases, the consumer marketing industry is promoting the

problem of body image for middle class young women. This occurs because the target audience shares this perceived social problem of weight control and has the economic power to purchase products and services presented as solutions.

Directly associated with the price of the product or behaviour is the income level of the target population. A poor population cannot afford behaviours beyond their economic reach. Unfortunately, where there is a will there is a way which explains the association between crime rates and abusive drug behaviours. To support drug habits, crimes are committed to get the needed money. Recognizing this connection, public debate continues about the efficacy of providing free drugs to addicts as a means to address rising crime rates and the growing underground drug society.

Furthermore, poverty may also be a cause of malnutrition for people who cannot afford to buy a selection of healthy foods for themselves and their family. If limited resources are allocated for other living costs, both healthy and unhealthy, then food preparation and selection may prove to be a low priority. As such many children eat no breakfast before going to school because none is provided by their home environment. Once again the public debates who should assume the responsibility of feeding the children of the poor and neglected. Unfortunately, until nutrition is perceived as

"preventative social medicine" which benefits all in society in the same way that public education does, poverty will continue to be the well-source creating greater social ills long into the future costing more dollars for criminal and medically related public expenditures.

Perhaps greater public understanding of unhealthy lifestyle can be advanced if the behaviour is seen to occur across socio-economic levels. For example, recognizing that abusive alcohol consumption is behaviour found at all levels of the economic spectrum has broken the stereotypical image of the problem alcoholic living on skid-row and has helped awaken the population to see the problem in their own families and social circles.

Summary of the Macro Level Theoretical Framework

The topics presented in these chapters provide a structure for understanding a vast amount of complex and inter-related information concerning individual health and lifestyle decision-making. By collecting information in each area, the health educator begins the primary task of framing the environmental influences which reach into the lives of individuals.

Health and lifestyle education campaigns today are most likely to follow the guidelines drawn by social marketing theory.

Recent examples of campaigns cited by Kotler and Roberto in their seminal text "Social Marketing - Strategies For Changing Public Behaviour" (1989) include: the United Nations World Health Organization Special Program on Aids (Harris, 1984; Krauthammer, 1987; Liskin and Blackburn, 1986; Sabatier, 1987; Wind, 1986), anti-smoking (Fox and Kotler, 1981; Bureau of Health Education, Centres For Disease Control, 1975; Kasper, 1974; O'Keefe, 1972), anti-alcohol abuse (Mendelson, 1973), the Stanford Heart Disease Prevention Program (Maccoby et al., 1977), anti-drug abuse (Mintz and May, 1988); the use of condoms as a form of contraception in the Philippines, Condom Social Marketing Project, (Roberto, 1987); a World Health Organization program for immunization children against several preventable diseases including measles and polio (Sherris and Blackburn, 1986); the Centres For Disease Control 1976 Swine Flu Immunization Program (Fottler, 1984); a social marketing plan funded by the Kaiser Family Foundation to promote family health through reduced dietary fat intake, Project LEAN - Low Fat Eating in America Now, (Samuels, Tarlov, and Green, 1987); a nutrition and education program aimed at preschool children in Cali, Columbia (McKay, McKay and Sinisterra, 1973); and the United States government program on poverty and related health and lifestyle concerns, Project Head Start, (Zigler and Valentine, 1979).

Additional large scale applications of social marketing theory include the United States Agency for International Development program, HEALTHCOM, in the Metro Manila Measles Immunization Campaign in the Philippines (Abad, 1988) and an education program to reduce high blood pressure related diseases such as stroke, congestive heart failure and kidney failure through the National Blood Pressure Education Program (National Heart, Lung, and Blood Institute, 1982, 1984; Ward, 1984).

In the review publication highlighting the impact of intervention campaign effort from 1987 through to 1991, the Health Promotion Directorate of Health Canada cite their three principal national campaigns on smoking, impaired driving, alcohol and drug abuse endorsing social marketing strategy as the key to their development and implementation (Health and Welfare Canada, 1992). Furthermore, both the federal ministry responsible for information campaigns, Health Canada (formerly Health and Welfare Canada), and the Ontario provincial Ministry of Health, publish guides for use by educators which advocate the use of social marketing as a strategic tool (Ontario Ministry of Health, 1991; Health and Welfare Canada, 1992).

In each of these studies, evidence presented supports and advocates the systems approach to health education including the recognition of system influence on target audiences by

governments, corporations, economic conditions, cultural factors and technology.

Behaviour is understood to be goal-directed. Understanding is therefore achieved by identifying organizational and individual goals and the processes connected with the behaviours undertaken to reach them. Continuing with this cybernetic theme, attention will be focused next on the factors related to specific social contextual situations where individual health and lifestyle decision-making occurs.

II.B The Theoretical Framework Related to the Micro Level

The entire paradigm presented in this thesis attempts to structure and explain health and lifestyle behaviour by systematically studying the cybernetic interaction of individuals and groups of people. The macro level of the thesis paradigm describes environmental factors that can influence social behaviour in health and lifestyle situations and help the health educator characterize the general environment within which a target audience or individual interacts.

The micro level of the paradigm examines the behaviourial factors which explain individual health and lifestyle decision-making based on Value-Expectancy Theory, the Theory

of Reasoned Action, the Health Belief Model and Social Learning Theory.

Finally, the micro level deals with the molecular level of decision-making behaviour explained by the cybernetic self-regulatory theories proposed by Festinger (Cognitive Dissonance Theory), Bem (Self-Perception Theory) and Kuhl (Action Control Theory). It is here that the cybernetic interaction of the individual within the more narrowly defined contextual environment where health and lifestyle decisions are actually made will complete the description and explanation of behaviour.

II.B.1 Value-Expectancy Theory

Value-Expectancy Theories are based on the belief that the individual rationally weighs the advantageous and disadvantageous outcomes associated with a specific behaviour and the expectancies of each outcome occurring as a result of the behaviour. The individual is expected to maximize the value of his decision by choosing a behaviour which represents the greatest measure of outcome benefit or the least amount of loss (Rosenstock, 1990; Carter, 1990). Consider table 2 below which illustrates the decision to drink a sweetened or unsweetened carbonated beverage.

First a list of outcomes is created for each behaviour. A seven point bi-polar scale is used to allow the individual to weigh the value of each outcome associated with drinking a sweetened and unsweetened carbonated beverage. For instance, by placing a "3" value for "Will Taste Good", a high value level for this particular outcome is indicated.

Table 2
Illustration of Value x Expectancy Decision Structure

Outcomes	Value	X	Expectancy	=	Subjective Utility
SWEETENED					
-Will Taste Good	3	X	1	=	3
-Will Be Healthy	-2	X	3	=	-6
-Will Give Me Energy	1	X	3	=	3
Total Value of choosing SWEETENED					0
UNSWEETENED					
-Will Taste Good	-1	X	3	=	-3
-Will Be Healthy	3	X	3	=	9
Total Value of choosing UNSWEETENED					6

Strongly Negative			Neutral			Strongly Positive
-3	-2	-1	0	1	2	3

Similarly, an individual uses the same bi-polar scale to indicate the expectancy of their behaviour to actually deliver the outcome. The "1" indicates that they do not have high

expectations that drinking the SWEETENED beverage will taste good.

In total, according to the evaluation made by this individual, drinking an unsweetened beverage would deliver a higher expected result. Hence, the model would predict that this rational decision-maker would opt for the unsweetened beverage on the basis of his measure of outcomes associated with each choice.

This skeletal outline of the principles inherent in Value-Expectancy Theory serves to explain the basis for elaboration of other models for predicting rational decision-making and behaviour. In a sense Value-Expectancy models have evolved out of the generic form described above and into more advanced models such as the Theory of Reasoned Action and the Health Belief Model which are structured around factors of beliefs derived from continuous application research.

II.B.2 Health Belief Model

The Health Belief Model (HBM) is the preeminent Value-Expectancy reference for explaining why people take action related to their health or choose not to. Researchers (see Applications of the Health Belief Model at the conclusion of this section) have refined the HBM since Hochbaum's (1958) survey of the American public to discover why people were

unwilling to be tested for tuberculoses at free, conveniently distributed mobile clinics.

The major version of the HBM prepared by Janz and Becker (1984) is based on a meta-analysis of prior studies. Splitting the studies into preventative health situations and those involving actual sick people, the research produced three primary factors.

I. Threat
   A. subjective perceived susceptibility
   B. severity of the illness or risk

II. Outcome Expectation
   A. subjective perceived benefit of taking action
   B. barriers to the action such as costs, side effect pain, (a cost benefit analysis).

III. Efficacy Expectation
   A. perception about one's ability to carry out the action (self-efficacy).

Overall, Perceived Barriers was the most powerful predictor of behaviour and Perceived Susceptibility was the next strongest predictor of preventative health behaviour. The studies on preventative health behaviour included seat belt use, exercise, nutrition, smoking, medical check-ups, fear of being arrested while driving under the influence of alcohol and

screening test programs for high blood pressure and breast self-examination.

It is easy to understand why mediated campaigns on preventative health issues such as sexually transmitted diseases, smoking and drug abuse tend to focus on themes involving risk and danger. Nevertheless, these approaches may turn off many in the target audience and in fact can have boomerang effects creating appeal in the behaviour where it did not exist before. Precisely when, where and how to use this strategy as part of an overall means to change behaviour needs to be carefully considered. The health educator should not blindly assume that the same strategy will work for all audiences.

The HBM also confirms the importance of measuring the self-efficacy dimension in any study. This contribution to the HBM is derived from Social Learning Theory (Bandura, 1977) and has been adopted by other self-regulatory models of behaviour (Ajzen and Madden, 1986; Carver and Scheier, 1985) and argues that behaviour to change is dependent on the individual's perception of the ability to reach targeted goals. The message to educators is to incorporate self-efficacy into any intervention campaign. The recommended way is to offer small incremental steps which allow the individual to build momentum

and confidence as each successful step is taken (Bandura, 1977).

Janz and Becker (1984) criticize the belief-behaviour limitations of the Health Belief Model by arguing that beliefs alone are inadequate for explaining behaviour. However, Rosenstock (1990) suggests research should study the conditions under which specific beliefs and behaviours are causally related. Rosenstock and Kirscht (1974) criticize the HBM for its lack of help in suggesting a change strategy. This recommendation is incorporated into the thesis paradigm.

Applications of the Health Belief Model

The Health Belief Model has guided these campaigns: to prevent and detect disease (Hochbaum, 1958; Rosenstock, 1960, 1966, 1974); response to symptoms of disease (Kirscht, 1974); response to a diagnosed illness and compliance with medical regimens (Becker, 1974); weight loss in obese children (Becker et al., 1977); influenza vaccination of high risk people (Larson, Olsen, Cole and Shortell, 1979); smoking cessation (Chambliss and Murray, 1979a); self-efficacy and health behaviour (Strecher, DeVellis, Becker and Rosenstock, 1986; Bandura and Simon, 1977; Bandura and Schunk, 1981; Marlatt and Gordon, 1985); Gilchrist and Schinke, 1983; self-efficacy and smoking behaviour (Nicki, Remington and MacDonald, 1985); self-efficacy and exercise regimen

compliance (Kaplan, Atkins and Reinsch, 1984); and weight control (Chambliss and Murray, 1979b).

II.B.3 Theory of Reasoned Action

Ajzen and Fishbein's Theory of Reasoned Action is a widely used technique for predicting and explaining behaviour in a variety of situations including consumer marketing behaviour studies and health behaviours such as alcohol consumption, birth control choice and condom use (Ajzen and Fishbein, 1980; Ajzen and Madden, 1986). The simplicity of the model and its ease of use lends itself well to many research situations where prediction of behaviour is desired, however, it often lacks descriptive explanatory detail.

Like the Health Belief Model, the Theory of Reasoned Action is a Value-Expectancy model where outcome beliefs and values are organized into two groups: 1) outcomes attributed to the individual performing the behaviour (attitude toward the behaviour) and 2) opinions of important referents (subjective norms). Mathematically, Behaviour (B) is expressed by the equation:

$$B = BI = w1(A) + w2(SN)$$

The theory suggests that the closest antecedent to actual behaviour (B) is behaviour intention (BI). Behaviour intention

in turn is dependent on two weighted factors (w1 and w2), attitude toward the behaviour (A) and subjective norms (SN) about the behaviour. The weights are coefficients derived by linear regression which sum to one.

Attitude Toward the Behaviour

Mathematically, attitude toward the behaviour is measured by summing the products of salient beliefs and attributed outcomes of the behaviour and secondly, the subjective evaluation of the attributed outcome; as expressed by the following equation:

$$A = \sum_{i=1}^{n} b \times e$$

where A = the attitude toward performing the behaviour
b = the strength of the person's belief that performing the behaviour will result in outcome i
e = the person's evaluation of outcome i
n = the number of relevant beliefs

Attitude toward the behaviour (A) is explained by the strength of beliefs about the action and the result of taking the action as well as the individual's evaluation of the outcome. For example, an individual who strongly believes that his action of smoking tobacco (b) will lead to illness such as cancer and secondly, evaluates the outcome of getting cancer

(e) as a very negative outcome will have a strong negative attitude toward tobacco smoking.

Consider the following table of hypothetical data for an individual which illustrates the relationship between the salient beliefs (b), the evaluation (e) and the measurement of attitude.

Table 3. Illustration of Measurement of Attitude.

Salient Beliefs About Smoking	b	e	be
1. Will give me cancer etc..	+2	-2	-4
2. Will make me look better.	+1	+2	+2
3. Will make me look older.	+2	+2	+4
4. Will make me poor.	+2	-2	-4
Total Attitude Score			-2

Although the cancer risk (belief 1) and the cost of smoking (belief 4) contribute negative values, looking better (belief 2) and older (belief 3) counter with positive points. On the whole, we would evaluate this individual's attitudinal scores as moderately negative at -2.

Negative attitude will be weaker if the individual does not hold strong beliefs about the link with disease or if the outcome, in this case, the disease is not evaluated as negatively. Consider how assumptions about knowledge and beliefs may vary and thereby distort expected behaviour. After viewing the video "Diary of a Teenage Smoker", a student

responded that their grandfather smoked all his life and was still alive and well in his nineties. They simply did not buy the argument that there is a proven link between the behaviour of smoking tobacco and the outcome of getting a disease.

Similarly, the outcome evaluation may surprise researchers if viewed properly. Consider for a moment that one of the outcomes of substance abusive behaviour can be attention from parents, teachers, peers and care givers. The outcome may be just what the individual is seeking, although the behaviour is dangerous and life-threatening. Motivation to behave in this way might be explained by this connection to the behaviour.

This point is further illustrated by the recent United Kingdom introduction of the cigarette brand "Death". The packaging is black with a prominently sized white skull and cross-bones symbol. Marketing executives for the firm, Alternative Marketing, emphasize their claim to be up front and truthful in their advertising and packaging. However, health critics claim the plan is a direct challenge to risk-seeking youth looking for ways to prove themselves (CTV 11PM News, July 18,1994.)

Subjective Norms

Mathematically, the individual's subjective norm is measured by summing the products of beliefs about whether a significant

social referent approves or disapproves of the individual performing the behaviour and the strength of the individual to comply with the thoughts of the referents; as expressed by the following equation:

$$SN = \sum_{i=1}^{k} b \times m$$

where SN = the person's subjective norm regarding the behaviour
b = the normative belief that reference group or person i thinks he should or should not perform the behaviour
m = the person's motivation to comply with the thought of referent i
k = the number of relevant referents

Consider the following table of hypothetical data for an individual which illustrates the relationship between salient referents beliefs about the behaviour (b), the strength of the will to comply with the referent's view (m) and the measurement of subjective norms.

Table 4. Illustration of Measurement of Subjective Norms

Salient Referents	b	m	bm
1. Parents	-2	-2	+4
2. Peers	+1	+2	+2
3. Special Friend	+2	+2	+4
4. Coach	-2	+2	-4
Subjective Norm Score			+6

Although both Parents and the person's Coach (referents 1 and 4) equally think smoking is a bad behaviour (-2) the negative motivation to comply with Parents (-2) results in a +4 score in comparison to a -4 for the Coach. Given that these two referents mathematically cancel each other's influence out the remaining positive scores from Peers and Special Friend combine to create a strong positive +6 Subjective Norm score.

Interpretation of Scores

The Attitude Toward the Behaviour score (-2) is not as strong a determining force of Behaviour Intention as is the Subjective Norm favouring the behaviour (+6). The final predictive value of the model requires the weights for each factor, which would have been derived from preliminary studies. If they were 0.7 for w1 and 0.3 for w2, then

$$\begin{aligned} B = BI &= w1(A) + w2(SN) \\ &= .7(-2) + .3(+6) \\ &= -1.4 + 1.8 \\ &= 0.4 \end{aligned}$$

This final score indicates a low probability of smoking intention. The relative strength of the BI can easily be compared with another person by examining this score. For example a respondent scoring 2.5 would indicate a higher risk case than one at 0.4.

Theory of Reasoned Action Methodology

Ajzen and Fishbein suggest a simple methodology for identifying and then measuring salient beliefs (1980). Subjects are first asked to list beliefs associated with consequences of the behaviour. For example as suggested by Loudon and Della Bitta (1988), a fill-in-the-blank sheet which begins with the statement, "If I smoke cigarettes, I will _____" or "When I smoke cigarettes, I _____" are open statements which allow the researcher to examine subject's association with the behaviour. Research suggests that three to nine beliefs will likely be repeated by a sample of subjects and can be labelled salient beliefs for the target group (Fishbein and Ajzen, 1980).

Similarly, salient referents can be identified by a similar procedure or through dialogue; "Who matters in your life.. a special friend, your parents..."?

Subjective norms can be measured by offering the following Likert scaled statements;

"My mother thinks that I

should +2 +1 0 -1 -2 should not

smoke cigarettes".

"I usually

do +2 +1 0 -1 -2 do not do

what my mother says I should".

These guiding methods were incorporated into the design of the questionnaire presented later in the thesis.

Applications of Reasoned Action Theory

The development and application of Value-Expectancy models applied to health related situations and leading to the establishment of Reasoned Action Theory and the Health Belief Model as current standard bearers is discussed by Carter (1990). Carter acknowledges the contribution made to understanding target audience beliefs and attitudes through value-expectancy but adds that "strategies for the design of the intervention must come from other theories". By examining differences in beliefs across sub-groups, educators have the beginning of a deeper understanding for intervention design (Carter, 1990). Expanding to all other relevant dimensions is basically what the thesis paradigm proposes.

As popular examples of value-expectancy thinking, Carter cites these health education campaigns using Fishbein and Ajzen's Theory of Reasoned Action: a clinical program to determine factors related to intention to use condoms as a means to

prevent sexually transmitted diseases (Baker, 1988); decisions about abortion (Smetana and Adler, 1979, 1986), birth planning intentions (Davidson and Jaccard, 1975; Crawford and Boyer, 1985; Lowe and Frey, 1983); and contraception selection (Adler and Kegeles, 1987; Cohen, Severy and Ahtola, 1978; Davidson and Morrison, 1983; Jaccard and Davidson, 1972; Jorgensen and Sosnstegard, 1984; McCarty, 1981; Werner and Middlestadt, 1979).

The Theory of Reasoned Action has had success in predicting the use of contraceptive techniques (Pagel and Davidson, 1984), exercise behaviour (Bentler and Speckart, 1981), weight loss (Sejwacz, Ajzen and Fishbein, 1980; Schifter and Ajzen, 1985) whether women would breast-feed or bottle-feed their newborn babies (Manstead et al., 1983) and the use of marijuana and cocaine (Ritter, 1988); Ajzen, Timko and White, 1982).

II.B.4 Self-Regulatory Models of Behaviour

Cybernetic theory and self-regulatory models regard behaviour to be goal-directed; that is to say, an individual's volitional behaviour is activated in order to achieve a perceived desirable goal. Action is taken to close the perceived gap between what is and what is desired. A feedback mechanism actively compares present circumstances with the desired future state and activates behaviours which work

toward eliminating the perceived discrepancy in reality. Understanding is therefore achieved by identifying goals and the processes connected with the behaviours undertaken to reach them.

The social settings where behaviours are played out are fluid, presenting a continuously changing environment for individuals to navigate. Social settings are also key determinants which influence cognitive processing. Change the setting, and the cognitive schema will likely change (Sears, Peplau and Taylor, 1991; Kuhl, 1985). Although previously learned behaviours may be routinely activated, there is always present the opportunity to select alternative, non-routine behaviours (Kuhl, 1989). It is at this molecular level that the thesis attempts to understand individual social behaviour by trying to explain why some choices are made and not others.

Research into Cognitive Psychology and Information Processing suggests a hierarchial structure of long term memory made up of clusters or nodes of related items (Sears, Peplau and Taylor, 1991). In addition to the factual component of a node, it is useful to acknowledge an affective dimension as well. For example, the emotional affect of a doctor praising an individual who has learned to change his eating behaviour and thereby reach his goal of weight reduction, will likely

contribute to long term positive association with his doctor and other related nodes in the situation.

Similarly, associated with factual and affective knowledge are stored "scripts" or behaviour sequences which are part of an individual's complete cognitive network (Abelson, 1976). Hence, the procedure to walk across the classroom and introduce oneself to a stranger can be treated as a memory unit of related nodes.

Festinger (1957) suggests that people generally undertake behaviours which are consistent with their attitudes. When there is a discrepancy between the two, then dissonance is suffered until the attitude-behaviour consistency is re-established. This is usually accomplished by changes to attitude to fit the expressed behaviour.

Bem's (1967) Self-Perception Theories argues that cognitive dissonance only works when the individual holds strong attitude-behaviour definitions. Instead he argues that when they are weaker or undefined, attitude may be rationally defined after the behaviour has been done.

Regardless of which philosophical approach the health educator takes, the common theme of consistency or congruence between behaviour and attitude is remarkable in its simplicity and

utility. The task becomes one of choosing which of the two are easiest to change or whether an attack on both would expedite the transition process. Given a change in attitude, Festinger suggests behaviour will fall into line in order to eliminate the stress of dissonance. Likewise, should an intervention strategy force or persuade learners to adopt a different behaviour first, Bem suggests that attitudes will fall in line later.

This research suggests that health interventionists need to know whether the current "behaviour-attitude relationship" is firmly rooted or relatively weak. Viewing this continuum ranging from strong to weak, both addictiveness and firm non-use of a substance should be viewed as strong whereas occasional behaviour would be weaker.

Consumer marketing strategies have successfully applied these theories by advertising the need for consumers to try the product in order to know what to think about it. The old joke, "Try it, You'll like it" is appropriate in these cases. To get consumers to first try products when attitudes are weak or relatively undefined, marketing firms give away sample packets in mail boxes or provide taste samples at shopping malls of new beverages. They recognize that motivation to pay for something which has no meaning to the consumer requires breaking the "chicken and egg" dilemma by providing the first

step toward positive attitude formation. Other commercial strategies have been applied to health and lifestyle intervention campaigns such as free passes to sample the facilities at the YMCA or rentals of cross-country bicycles at appropriate sites to facilitate healthy recreational activities.

Stimulus-Response Theory suggests that consumer behaviour, which the consumer perceives as producing a positive outcome, will act to strengthen the stochastic relationship between Beliefs-> Attitudes-> Behaviour Intentions-> Behaviour, whereas negative outcomes which are inconsistent with beliefs are likely to erode the strength of the relationship.

These theories suggest that difficulty will be greatest with people who are strongly entrenched in an unhealthy "behaviour-attitude relationship". How to go about weakening these bonds will require offering a variety of alternative behaviours which can disrupt the existing cyclical schemas that so strongly support the present behaviour.

In general, a person's behaviour, such as exercising, can be explained in terms of the desired goal of getting fit. The cognitive network of factual information, behaviour pattern and goal achievement is common to cognitive information processing models of behaviour (Eysenck, 1984). The search to

understand why some behaviours are attempted and others not, why some are completed while others are not, is the subject of much debate and theorizing. Ajzen (1985) has advanced the Theory of Reasoned Action into one which he calls Theory of Planned Action, to underline the gap between present Behaviour Intention and the point in time when the behaviour can be actualized. As the gap in time closes, Ajzen points out, the strength of the Behaviour Intention increases. Ajzen explains the problem in terms of intervening or interrupting factors which interfere with the original Behaviour Intention. Ajzen points to a continuously active cognitive processing of information by the individual leading up to the very moment when the behaviour is actualized. He leaves the discussion on this point; the closer one is to the moment of actualizing the behaviour, the greater the probability for its execution since there is less time, hence opportunity, for influences to change the intended behaviour.

Although, Ajzen helps narrow the focus of the issue by inserting the importance of the time dimension, he does not attempt to explain the cognitive competition going on within the mind of the decision-maker except to say that some "thing" may act to strengthen or weaken the intended behaviour.

Action Control Theory

Julius Kuhl and Jurgen Beckman (1985) have developed a cybernetic explanation for why people often fail to complete their intended actions such as quitting smoking, exercising, and reducing their known and clearly understood unhealthy behaviours. This body of cognitive psychology, called Action Control, focuses attention on self-regulatory mechanisms which mediate the formation and enactment of behavioral intentions. A distinguishing feature of the theory is the attention paid to action intention formation and change.

According to Action Control Theory (Kuhl, 1985), whether a current behaviour intention will be carried out depends on the difficulty of carrying out the behaviour in relation to the efficiency of self-regulatory processes involved. Difficulty of carrying out the behaviour is based on the strength of external forces working against the behaviour such as social norms, internal forces working against the behaviour such as competing action tendencies, and the predisposition of the individual toward change-prevention (state-oriented) versus change-inducing (action-oriented) behaviour. Efficiency of self-regulatory processes are improved by selective attentional mechanisms, parsimony of information-processing, motivational control, emotional control, environmental control and encoding control.

According to Kuhl, an individual's predisposition to behave in some situation lies somewhere between two extreme reference points, referred to as Action and State Orientation. A person is Action Oriented to carry out some behaviour when all four of the following condition are met; 1) he is focused on his present state or condition, 2) a future state or condition, 3) a discrepancy between the two states and finally, 4) an action which can eliminate the perceived discrepancy. If any of these four conditions is lacking, the individual is classified as being State Oriented, that is to say, incapable of action.

This simple structure presents the Educational Technologist with an understanding of how to arrest unhealthy action and strengthen or encourage healthier choices. For example: suppose research confirms a failure to perceive a gap between a present condition and a more desirable future condition (conditions 1, 2, and 3). If the subject responds with "I have no problem with my weight or alcohol consumption", then the health educator may be able to initiate change by creating this awareness.

Suppose instead research confirms the issue is not a lack of awareness of the problem but instead the absence of learner strategies to solve the problem (condition 4). By providing needed advice that meets individual needs and responds to

self-efficacy concerns or doubts, the interventionist can promote change.

The Action Environment is a defined subset of the larger environment that the individual interacts with. For example, an individual at a Saturday night house party is in a clearly definable social environment which involves many previously learned, hierarchically arranged, nodes of useful information and behaviour patterns (scripts) such as talking to friends, mingling with unknown other persons and so forth.

Every Action Environment has its own goals or objectives which are subjectively and normatively defined. That is, each person at the house party has their own definition of the goals or purposes of a house party and the common understandings shared by most people are cultural norms. For example, most people would agree that house parties are a time to get together with friends and meet new people. In addition, each person holds a personal definition of the goal or purpose of the action environment. It is likely that the subjective and normative definitions will be closely related but some situations may produce great differences between the two posits.

According to Kuhl, the Action Environment is comprised of competing Action Tendencies. An Action Tendency is a behavioral predisposition to carrying out an action which is

goal directed. For example, an individual who feels lonely might adopt an Action Tendency which involves both the intention and action of approaching a group of people standing by the bar. The goal is to join the group and the action sequence necessary to succeed has probably been learned through experience or observation of others.

Though the individual is engaged in this particular Action Tendency, any one of several other Action Tendencies may interrupt the successful completion of the intended action. For example, while walking across the room toward the bar, the individual may be approached by a friend who begins a conversation with him. At this point, the strength of the competing Action Tendency concerned with maintaining good relations with old friends may dominate and so replace the initial Action Tendency.

The strength of an Action Tendency relative to competing ones determines whether it will be interrupted or reach its goal. Action Tendencies are protected from interference by Alternative Action Tendencies in order to achieve goal completion (Kuhl, 1992) however, expectancy theory would suggest that the value of goal completion is continuously being weighed against the appeal of alternative goals in the network. This Action Tendency network and their relative

strengths are learned through experience or attribution or some other social learning mechanism (Bandura, 1977).

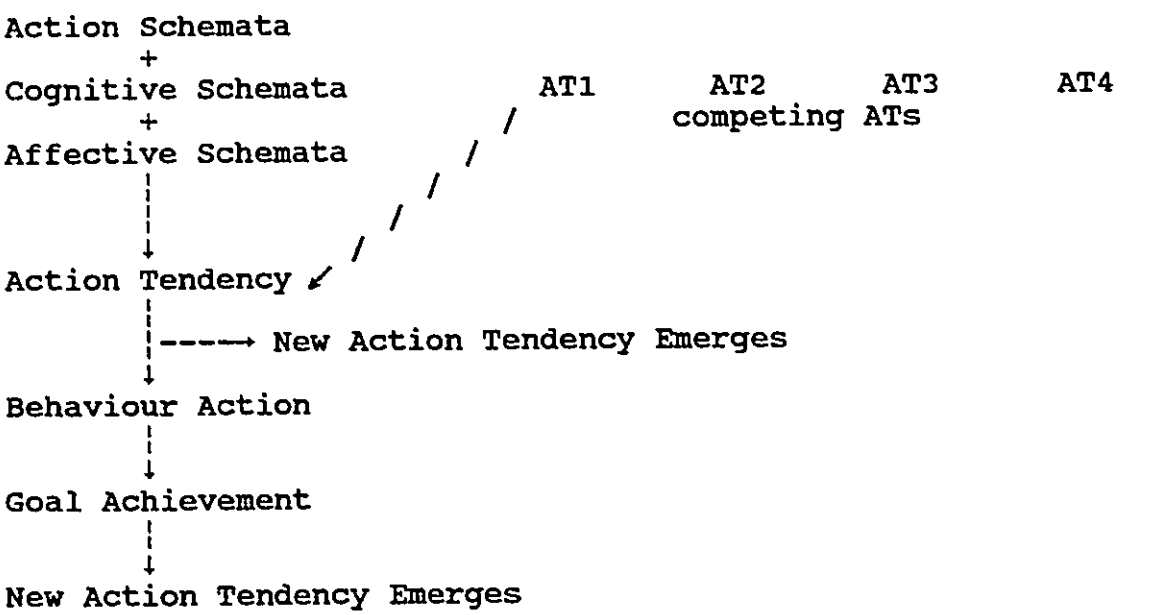
Another way to think of an Action Tendency is as the strongest Behaviour Intention associated with some social setting, or the one with the highest probability of being invoked. An Action Tendency is not vacuous; it emerges as a possible course of behaviour in the context of an Action Environment. Smoking may occur as an Action Tendency at a house party, office or bar. The smoking Action Tendency is one of several possible Action Tendencies that might occur at any moment in any of these particular Action Environments. Whether it will emerge is primarily a function of its strength in relation to other familiar and unexpected Action Tendencies present at the time. For example, dancing would likely be a familiar Action Tendency and could disturb the intended action of smoking a cigarette to completion. If someone were to ask the smoker to dance, and the strength of the choice was stronger than smoking, then smoking would be interrupted and dancing would commence. In a similar way, an unfamiliar Action Tendency might emerge which is also deemed more desirable than smoking and so interrupt the progression of the present action sequence. An unfamiliar Action Tendency might be precipitated by the unexpected arrival of the police.

Whether the behaviour once activated will reach its goal depends on the strengths of emerging Action Tendencies. These emerging Action Tendencies have a stochastic dimension to them but are fundamentally unpredictable. One can never know with certainty whether an individual will drink an alcoholic beverage at a house party, but group probabilities are likely to be quite accurate and in the long run, individual behaviour is likely to follow a repetitive probability pattern of behaviour of what is familiar.

The schematic diagram on the following page presents an outline of the components which make up an Action Tendency. An Action Tendency emerges from a cognitive network of Action Schemata, Cognitive Schemata and Affective Schemata as the individual interacts with his environment. This schemata is acquired with experience as well as influence from factors discussed on the macro level of the paradigm. Hence, it is often evident through observing behaviour, who is "new" to a social setting and who is familiar and "experienced".

The Action Tendency progresses toward its goal completion but is under the influence of other Action Tendencies, shown as AT1 to AT4, attempting to impede its progress. Whether it completes the Action Behaviour required to reach its goal or is replaced by another Action Tendency will be determined by the strength of the competing forces present.

Figure A. The Action Environment



One Action Tendency may be programmed to trigger another to activate and emerge dominant at the completion of the first. For example, the familiar and strong Action Tendency of drinking coffee after supper is likely to be cued by the removal of dishes from the table. The more linked the Action Tendencies, the more familiar and stronger they are.

Applications of Action Control Theory

Action Control Theory has been applied to aid understanding of the behaviour and cognitive processes of hospitalized alcoholics and depressed patients (Kuhl and Helle, 1984); depression (Wortman and Brehm, 1975); stress management and

coping processes related to victims of rape and incest (Williams, 1983; Silver et al. 1983; Silver and Wortman, 1980; Scheppele and Bart, 1983); and alcohol and drug abuse (Hull, 1981; Hull and Young, 1983; Carver and Scheier, 1985; Lacoursiere, Godfrey and Ruby, 1980).

The approach to the micro-level of intervention design discussed in this thesis differs from traditional Educational Technology research which has tended to focus on micro-media factors such as message content, camera angles, delivery styles of the narrator and so forth in an effort to evaluate better communication techniques for the learning of cognitive factors. This limited orientation and particular emphasis on cognitive communication goals, fails to recognize the rich complexity involved in social behaviour and thus may miss other important elements in the learner's decision-making framework (Baggaley, Ferguson and Brooks, 1980).

This thesis argues that an elaboration of the traditional educator's model is required which recognizes the importance of attitudinal and behavioural complexities in addition to cognitive factors. The motivation for adopting this broader approach is explained simply by the recognition of greater understanding and the acquisition of new strategies for dealing effectively with behaviour change, the ultimate goal of any intervention effort.

The task then for educators is to understand the complex structure of this environment of competing behaviour patterns and networks of cognitive decision rules. In essence, the question becomes, how does one support positive Action Tendencies and disrupt negative ones through educational intervention?

The simple, heuristic answer is based on the research findings that an Action Tendency will remain in effect until it is completed or replaced (Kuhl, 1985). Therefore the strategy for information campaigns should be to build informative and persuasive campaigns supporting positive Action Tendencies and attempt to disrupt negative Action Tendencies by offering alternative/competing Action Tendencies or weakening the cognitive/affective network which supports the Action Tendency.

If according to Kuhl, disruption of only one of the four components which identifies an individual in an Action Orientation is required in order to create a State Orientation, then strategist might seek ways of disturbing the existing formation if it is associated with an unhealthy Action Tendency and then manoeuvring an Alternative Action Tendency to replace it.

Researchers should be looking for the "new" substitutes and components which will alter the strength of the present Action Tendency. Quicker success will likely come from Action Tendencies that are familiar and strong in other Action Environments. The idea of cross-over is a popular one in commercial advertising and can be readily explained in the context of this approach.

Consumers are more easily moved to take small steps away from a familiar behaviour. So, substituting one brand of coffee is more easily done than creating a tea drinker out of one who has firmly established a strong Action Tendency involving coffee as the choice beverage.

Weakening the coffee Action Tendency some ten years ago was successful when the commercial advertising media focused attention on the fact that tea contained less caffeine than coffee at a time when caffeine was perceived to be unhealthy and a special threat to heart disease. Not to be outdone, the coffee industry responded with heavier emphasis on selling decaffeinated coffee.

Furthermore, research should focus on the cues which may trigger an alternative Action Tendency or halt the continuation of a current one. For example, clearing the supper table may serve as a cue to the Action Tendency for

drinking coffee. Media design research which now tends to focus on the cognitive/affective value of some message components should instead be looking for "turning points"; messages/cues that act to halt or weaken an Action Tendency and prompt/nurture the emergence of another.

It is conceivable that the selection of an Action Tendency may be based on the belief that the behaviour will best satisfy a multitude of goals in the Action Environment. For example, in making the decision to smoke at the house party, the goal may comprise an improved self-image, avoiding drinking alcohol, avoiding talking to people and so forth. In a sense, the selection of an Action Tendency may go beyond the immediate perceived pleasures of smoking and the present Action Environment.

Consistent with Reasoned Action Theory (Fishbein and Ajzen, 1980) the smoker may be making his choice of behaviour based on optimization of time or mental energy. Smoking may emerge as the "best" activity to engage in at the moment which satisfies a variety of needs.

Conventional expectancy models such as Fishbein and Ajzen's (1980) Theory of Reasoned Action and the Health Belief Model (Rosenstock, 1990) focus on the task of predicting who is likely to change their behaviour rather than on monitoring the

changes subjects experience while working toward the desired changed behaviour.

It is important to note that most models define success only in terms of a change in behaviour to non-abuse and do not allow for smaller developmental changes which would suggest progress toward that goal. This weakness is cited by Prochaska and Di Clemente (1982) in attempts to measure progress in smoking cessation. The model suggested by this thesis will provide an opportunity to monitor and evaluate these developmental changes.

Chapter III

An Overview of the Thesis Paradigm

There is little question about the popularity and utility of Social Marketing to assist in the creation of public health education campaigns. Most useful to educators is the Social Marketing recognition of the macro-environmental factors influencing system players as well as the target audience. Whereas traditional education research tends to avoid these issues, this thesis argues the importance of including this macro-level framework within any intervention study before attempting the micro-level effort where individual processes are examined.

Social Marketing is intentionally vague about how educators should deal with specific recommendations of persuasion and sub-group evaluation as illustrated in the references cited. Although this allows the educator the opportunity to select from an array of approaches and methods, it leaves the question open as to whether there exists at least one broad, generic prescriptive approach which can work in a variety of health and lifestyle settings.

As other references cited illustrate, Reasoned Action Theory, the Health Belief Model, Action Theory and the concepts of beliefs, attitude, social norms, self-efficacy and self-image help continue the path of deeper understanding of the target audience. In each case, the literature points out the contribution that each approach has made toward better understanding of micro-level processes and behaviour. The thesis paradigm embraces all of these contributing elements and attempts to present the case for a proven comprehensive approach to health education campaign design.

The assumption behind this thesis is that a comprehensive, holistic analysis of all factors related to the health behaviour problem presents the educator with the greatest degree of understanding, a diagnostic tool for designing intervention strategy, and an instrument for monitoring and evaluating its success.

Intervention on the macro-level will involve longer-term and more difficult tasks. For example, changing government policy on alcohol sales or labelling may be beyond the scope of intervention for college health services staff. On the other hand, focusing on micro-level factors, such as changing attitudes, beliefs, strengthening positive Action Tendencies and weakening or undermining negative ones, will typically

fall within the mandate of all clients of education technologists.

The following sections contain a comprehensive annotated procedural outline to guide educational technologists in intervention design.

III.A Situation Analysis

The educator will first need to conduct exploratory target audience research in order to identify the scope of the problem area. At the same time, the framework of limitations, constraints and resources of the client who has hired him should be established. Specifically, time, money, personnel allocation and other client resources which may be needed to accomplish goals should be assessed as early as is possible. Preparing intervention plans which go well beyond the abilities or willingness of the host organization to undertake would be unproductive and wasteful.

III.B Macro-Level Environmental Forces

The macro-level environmental forces influencing the target audience are regarded as cybernetic interacting sub-systems each seeking their respective goals and behaving in their own self-interests. The educator needs to research the relevant system factors involving the consumer marketing industry, governments and the legal environment, the role played by

health education organizations and professionals, the popular media and related cultural and social environmental factors.

III.C Micro-Level Diagnosis and Evaluation

A multi-dimensional approach to the instructional design of an intervention is recommended measuring the micro-level factors believed to be related to the health behaviour. By comparing the results taken from a large sample of the target audience, the sub-group (non, moderate and heavy drinkers) profiles on the micro-level factors can help point out significant differences between people and thereby direct intervention strategy.

Furthermore, by monitoring changes in these factors at the sub-group level, the educational technologist can monitor the intervention effect on factors known to relate to the behaviour. Successful intervention will be defined when heavy drinkers are "moved closer" to relevant profile scores of moderate and non drinkers. Of greatest importance will be reductions in the amount of alcohol consumed, particularly by heavy drinkers. Micro-level factors should include the following antecedents of behaviour:

* Current Action Tendency
* Competing Alternative Action Tendencies
* Attitude Toward the Behaviour
* Subjective Norms

* Cognitive Dimension
* Affective Dimension
* Self-Efficacy
* Self-Concept
* Self-Regulatory Control

III.D Intervention Plan(s)

A description of the intervention plan or plans if more than one is put forward should be generated. A full intervention plan will involve the following intervention concerns.

* Statement of Intervention Objectives
* Message Selection
* Media Selection
* Message Design
* Scheduling and Distribution
* Related Products and Services
* Time Frame
* Budget
* Human Resources

III.E Post-Intervention Evaluation

Macro-level and micro-level factors should be monitored in order to assess the impact of the intervention effort on all system components. Specifically on the micro-level, the health behaviour and the multi-dimensional profile factor scores

should be tracked over a longer period of time in order to better assess the intervention's true impact.

In the following section, a description of a research project investigating alcohol consumption behaviour of college students as well as the results of a media-based intervention effort aimed at reducing alcohol consumption is presented. The thesis paradigm provided the design, direction and sequencing for the research.

Chapter IV

Methodology

IV.A Introduction

In order to demonstrate the efficacy of the thesis paradigm, an anti-alcohol consumption intervention study was conducted at John Abbott College in the suburban community of Ste. Anne de Bellevue, Quebec, Canada. Located twenty minutes drive from the downtown core of Montreal, the 5,300 day-time student body is comprised of mostly middle-class pre-university students aged 17 to 20 years.

Recognizing the importance of social habits and attitudes formed at this age and their implications for lifelong lifestyle behaviour patterns, John Abbott College health educators and administrators were supportive of any effort which might shed light on how to better understand and deal with any existing problem behaviours and those that might develop some time in the future.

Although no actual research data was available, the perception of a problem at the college existed. Alcohol related incidents in the local town bars frequented by students and recent

automobile accidents involving impaired college aged drivers suggested the need to learn more and assess intervention alternatives which could be undertaken within the college environment.

Social education awareness campaigns on substance abuse, sexually transmitted diseases, birth control, dieting, eating disorders, sexual harassment are routinely carried out throughout the academic year. Posters, flyers, discussions, lectures, counselling services and video display are generally set up in a large public common area on the campus to help inform and direct better health behaviour. Beyond this mass social education effort, individual counselling is provided when sought by students or on the advisement of staff.

Given limited financial resources, the task was defined in terms of three primary goals: 1) assess the degree of the problem and nature of alcohol consumption behaviour among the student body, 2) recommend a strategic plan which could be undertaken by the college to change problem behaviour and 3) evaluate the impact of an educational video which might be used at public information forums.

IV.B Subjects

Fifteen classes of college students (N=506) were selected for study in order to help assess the degree of the problem,

determine sub-group characteristics and suggest intervention strategies. On the basis of this analysis, a video-tape intervention program was chosen and evaluated by a treatment group made up of two classes (N=51) who were monitored over a two month period. A single class (N=19) served as a control group and was also monitored over the same two month treatment period but received no influence beyond what might have been gained by responding to the questionnaire in the study.

The fifteen class sample (N=506) is considered a good representation of the student body since it is mostly composed of first and second year students in required social science courses while the other classes represented proportionately, the rest of the student population of science and technology students. Of the 506 students surveyed, 56% (284) were male and 44% (221) female. Primarily made up of 17 to 19 year olds (83%), their ages formed a frequency distribution conforming to expected values for students in the college.

IV.C Materials

Video: Based on exploratory pilot research using interviews, focus groups, the study of "Diary of A Teenage Smoker" and guidelines in the literature, a video believed to offer both an informative and persuasive message for students was selected for evaluation. The Cambridge Documentary Films production "Advertising Alcohol: Calling the Shots" is a

thirty minute lecture and slide show presented by social educator Dr. Jean Kilbourne to a mixed audience of students, academics and the general public at Harvard University in 1991.

By showing the power of advertising to capture and manipulate target audiences, Dr. Kilbourne's persuasive arguments expose the nature of the systematic relationship between advertising, addictive behaviour and economic power. It was hoped that the message and style of the presentation would have a strong effect on the target audience because of its portrayal of the powers of advertising to undermine individual rational decision-making. Rather than lecturing only on the "evils" of bad behaviour, it was believed that audience interest and motivation would be stimulated by the large content of factual information on the advertising industry and the challenge from Dr. Kilbourne to increase one's self-regulatory control.

Furthermore, the video covered most if not all of the antecedents to alcohol consumption behaviour suggested by the literature. Therefore, expectations were high for its appreciation and reception by students as well as its affect on them.

Questionnaire A: A 53-item questionnaire tailored for the target audience was devised to help shed light on the micro-

level factors (Kotler, and Roberto, 1989; Hartman and Hedblom, 1979; Babbie, 1975). They included the demographic variables of gender and age (questions 1-2), an individual's self-perception of facts (questions 5-6), sources of factual information (questions 7-9), knowledge of correct behaviour in specific situations (questions 10-16), affective measurements about the product, the behaviour and other people's behaviour (questions 17-21), strength of the current action tendency (questions 22-27) , strength of alternative action tendencies (questions 28-32), self-concept measurements (questions 33-43), self-regulatory control (questions 44-51) and self-efficacy (questions 52-53); (questionnaire A is presented in Appendix A).

Feedback Table: A frequency distribution and brief summary of results for each question from questionnaire A was presented as part of the treatment in order to gage interest in peer feedback and animate discussion; (results sheets for questions 3 and 4 are presented in Appendix B).

Questionnaire B: A second 24 item questionnaire (questions 54-76) was created to measure immediate reaction to the video and newly formed behaviour intentions; (questionnaire B is presented in Appendix A).

Reliability

Pre-testing for validity and reliability of the questions was conducted and deemed satisfactory. Reliability was assessed through test-retest method resulting in all questions showing strong correlation (Pearson coefficient values $r > 0.9$) with data gathered one week earlier. Comparison of scores showed more than 90% were unchanged and of those that did, scores remained either in agreement or disagreement with the statements. Face validity was confirmed through a panel of students and teachers. Only questions which were unanimously accepted as understandable, clearly worded and likely to result in correct responses were accepted. Examination of results from each classroom of students showed clear patterns of repetition of similar scores which added to confidence.

IV.D Procedure

Questionnaire A was given to the fifteen class sample of students (N=506) during class time at about the middle of the winter term in 1994. Teachers in 15 classes allowed the necessary 10 to 15 minutes at the start of their class for students to anonymously fill in a computerized scanning answer sheet.

To assess the immediate and longer-term impact of the video-tape as well as the influence of feedback of peer data, two classes of students (N=51) were first asked to respond to

questionnaire A, watch the video and then respond to questionnaire B. Approximately one month after viewing the video, questionnaire A data was collected from the treatment students (N=51) a second time, and the feedback tables of data were displayed in class on overhead projectors to help animate discussion about peer attitudes and behaviours. Finally, one month later, the treatment group (N=51) was asked to respond to questionnaire A a third time.

In tandem with the treatment timetable, a control group (N=19) responded to questionnaire A at the start and conclusion of the two month tracking period. This group received no intervention effort. Students in both the control and treatment groups used individually chosen confidential identification numbers known only to them which permitted within subjects analysis of data.

IV.E Results

Results from students' (N=506) responses to questionnaire A show mean consumption reported was 3.4 drinks with males consuming an average of 4.0 and females 2.6 drinks. The difference between males and female was significant ($F(1,472)=39.22$, $p < .05$).

More than 20% of students reported not drinking any alcohol when going out for the night with friends to a party or bar,

52% reported 2 to 4 drinks and 28% more than 6 drinks. Subsequent analysis will refer to these sub-groups as Non, Moderate and Heavy drinkers respectively (see table 5).

Table 5.
Frequency Distribution of Alcohol Consumption (N=506)

Drinks	Frequency	Percent	Cum.Percent	
0	104	20.6	20.6	
2	143	28.3	48.8	
4	119	23.5	72.3	
6	83	16.4	88.7	
8+	57	11.3	100.0	
Total	506	100.0	100.0	Mean = 3.4

The number of times each month students went to what could be considered a high risk environment for the likely consumption of alcohol, that is a party or bar where alcoholic drinks were consumed is summarized in table 6. Although only 11% reported not going out at all, more than half (52%) reported a moderate 2 to 4 times in a month, and 35% indicate potential problem behaviour by going out 6 or more times. In fact, 17% reported going out 8 or more times, an average of twice a week or more. With a mean of 4 times a month, it is apparent that weekly visits to parties or bars is typical behaviour.

Table 6.
Frequency Distribution of Reported Drinking Outings (N=506)

Outings	Frequency	Percent	Cum.Percent	
0	56	11.1	11.1	
2	159	31.4	42.5	
4	110	21.7	64.2	
6	94	18.6	82.8	
8+	87	17.2	100.0	
Total	506	100.0	100.0	Mean = 4.0

Sub-group Comparisons By Levels of Drinking (N=506)

Statistical significance of differences in scores between Non, Moderate and Heavy drinkers was determined through Multivariate Analysis of Variance (MANOVA) in order to assess differences between sub-groups and identify ideal levels as represented by moderate and non-drinkers. Overall, comparisons between sub-groups were significant as indicated in table 7.

Table 7.
MANOVA By Levels of Drinking (N=506)

Name	Value	Approx. F	Hypoth. DF	Error DF	Sig.of F
Pillais	.87	6.69	98.00	850.00	.00

Note.. Equivalent results reported for Hotel., Wilks and Roys.

A summary of means and standard deviation for questionnaire A as well as results of univariate F-tests for Non, Moderate and Heavy drinkers provided initial insight into the data. All

items produced significant F-tests with the exception of Q2, Q22, Q31, Q33, Q34, Q35, Q38, Q42, Q44, Q49, and Q52 (see table 8a and 8b). Given the large sample size, it is no surprise to find so many statistical significant differences. As suggested by Meehl (1978), statistically significant differences will almost always occur in large samples and given that normality and homogeneity of variance are absent, the results may not represent any real differences. Therefore, it is perhaps more appropriate and worthwhile to pay closer attention to the actual meaning of the scores rather than attach too much importance to the existence of statistically significant outputs.

Table 8a.
Means, Standard Deviations and Results of Univariate F-tests By Levels of Drinking for Questionnaire A.. Q2-Q13. (N=506)

	Non		Moderate		Heavy	
	M	SD	M	SD	M	SD
Q2	2.1	1.0	2.3	1.2	2.4	1.2
*Q4	1.7	0.6	2.2	0.5	2.6	0.5
*Q5	4.6	0.6	4.5	0.8	4.3	0.9
*Q6	4.5	0.7	4.3	0.8	4.1	1.0
*Q7	2.7	1.5	2.0	1.2	1.7	1.1
*Q8	4.1	1.1	3.7	1.2	3.5	1.2
*Q9	2.8	1.5	2.6	1.2	2.3	1.3
*Q10	4.8	0.6	4.6	0.7	4.1	1.3
*Q11	4.7	0.7	4.7	0.7	4.3	1.1
*Q12	4.2	1.3	3.9	1.3	3.2	1.6
*Q13	4.1	1.1	3.9	1.1	3.3	1.4

Note: * indicates significant difference between Non, Moderate and Heavy Drinkers where $p < .05$.

Table 8b.
Means, Standard Deviations and Results of Univariate F-tests By Levels of Drinking for Questionnaire A.. Q14-Q53. (N=506)

	Non		Moderate		Heavy	
	M	SD	M	SD	M	SD
*Q14	4.0	1.0	3.7	1.0	3.0	1.3
*Q15	4.7	0.7	4.6	0.7	4.4	0.9
*Q16	4.5	0.9	4.1	1.1	3.5	1.3
*Q17	2.4	1.1	3.6	1.0	4.4	0.7
*Q18	2.0	1.1	3.8	1.0	4.7	0.5
*Q19	4.2	1.0	4.4	0.7	4.1	0.9
*Q20	3.0	1.0	2.6	1.4	3.0	1.4
*Q21	2.5	1.4	3.1	1.3	3.4	1.3
Q22	2.6	0.9	2.5	1.1	2.4	1.2
*Q23	1.2	0.7	1.7	1.0	2.5	1.4
*Q24	1.9	1.0	1.9	1.1	3.0	1.3
*Q25	1.7	0.9	1.4	0.8	2.2	1.3
*Q26	1.3	0.7	1.8	1.0	2.2	1.3
*Q27	1.2	0.7	2.0	1.1	3.6	1.3
*Q28	4.6	0.8	3.9	1.0	3.1	1.2
*Q29	4.5	0.9	4.0	1.2	3.3	1.5
*Q30	4.5	0.9	3.7	1.2	2.7	1.5
Q31	1.4	1.0	1.7	1.2	1.8	1.4
*Q32	2.5	1.4	2.0	1.1	1.7	1.0
Q33	4.5	0.8	4.4	0.8	4.4	0.9
Q34	4.3	1.0	4.2	0.9	4.1	1.1
Q35	4.0	1.1	3.9	1.1	4.1	0.9
*Q36	1.4	0.9	1.9	1.1	2.0	1.2
*Q37	1.3	0.7	1.7	1.0	2.4	1.4
Q38	2.8	1.5	3.0	1.5	2.9	1.6
*Q39	1.1	0.4	1.1	0.6	1.5	1.1
*Q40	4.7	0.7	4.6	0.6	4.4	0.9
*Q41	4.8	0.5	4.7	0.5	4.6	0.9
Q42	4.5	0.9	4.4	0.8	4.2	1.0
*Q43	1.5	1.0	1.8	1.2	1.5	0.9
Q44	4.4	0.9	4.3	0.9	4.2	1.0
*Q45	4.6	0.7	4.3	0.9	4.0	1.0
*Q46	4.4	0.9	3.6	1.2	2.4	1.3
*Q47	4.6	0.7	4.5	0.7	4.1	1.0
*Q48	1.3	0.7	1.6	0.8	2.0	1.0
Q49	2.3	1.0	2.1	1.2	2.3	1.3
*Q50	2.1	1.1	1.9	1.2	2.6	1.4
*Q51	4.1	1.1	4.1	1.2	3.6	1.3
Q52	4.3	0.9	4.3	0.8	4.3	0.9
*Q53	4.2	0.9	4.6	0.7	4.4	0.9

Note: * indicates significant difference between Non, Moderate and Heavy Drinkers where $p < .05$.

Multiple Regression Analysis

Standard multiple regression analysis was conducted to measure the strength of the questionnaire to explain both drinking behaviour (Q3) and attending parties and bars (Q4). In both cases, multiple R was significant indicating that the questionnaire did indeed cover a great deal of the variance (see table 9).

Table 9.
Multiple Regression Analysis of Questionnaire A (N=506)

Dependent Variable	Q3	Q4
Multiple R	.81	.65
R Square	.67	.42
Adjusted R Square	.63	.35
Significant F	.00	.00

Factor Analysis

To simplify the data for further analysis, factor analysis of questions 5 through 53 using Principle Components Extraction with Varimax rotation produced four primary factors judged to reflect behavioural (F1), affective (F2), cognitive (F3) and self-regulatory control (F4) dimensions (see table 10).

Although thirteen factors emerged with Eigenvalues greater than one covering 60.7% of the variance, examination of the Scree plot and the questions associated with each factors

produced four clearly defined factors. A higher order factor analysis confirmed the acceptance of these four factors.

Table 10.
Factor Analysis Results of Questions 5-53 (N=506)

Factor	Eigenvalue	Variance	Question	Factor Loading
F1 - Behavioural	8.64	17.6	Q17	.69
			*Q18	.73
			Q23	.64
			Q24	.63
			Q27	.70
			Q30	-.60
			Q46	.62
F2 - Affective	4.11	8.4	Q33	.81
			*Q34	.83
			Q35	.74
			Q43	-.61
			Q44	.71
F3 - Cognition	2.63	5.4	* Q10	.66
			Q11	.64
			Q15	.60
F4 - Control	2.09	4.5	Q49	.69
			*Q50	.73

Note: * indicates largest factor loading. Q19 Q27 Q32 Q38 and Q43 were recoded (1=5) (2=4) (4=2) (5=1) to reflect direction and correct meaning within the factor. Only questions which measured factor loadings greater than 0.6 are included.

F1: Behavioural Tendency Toward Drinking

Factor 1 measures the tendency toward alcohol consumption behaviour as well as associated affective measures. Higher

scores reflect a greater tendency to drink excessively and enjoy positive emotions associated with alcohol.

F2: Affective Dimension

Factors 2 measures self-esteem and other feelings associated with self-concept. Higher scores reflect a more positive feeling about oneself and greater contentment with one's life.

F3: Cognition of Correct Behaviours in Drinking Situations

Factor 3 measures the knowledge of correct behaviour in alcohol related situations and perception of risk. Higher scores reflect greater knowledge of correct behaviour and tendencies to comply with them in alcohol consumption social situations.

F4: Self-Regulatory Control

Factor 4 measures self-regulatory control with respect to general behaviour and alcohol consumption in particular. Higher scores reflect a greater degree of desire to experience higher levels of self-regulatory control.

MANOVA of Factor Scores By Levels of Drinking (N=506)

To simplify the analysis, MANOVA of factor scores by levels of drinking show significant differences with the exception of F2 (see table 11).

Table 11.
MANOVA of Factor Scores By Levels of Drinking (N=506) and Univariate F-tests with (2,472) D. F.

Name	Value	Approx. F	Hypoth. DF	Error DF	Sig.of F
Pillais	.53	45.56	8.00	986.00	.00

Note.. Equivalent results reported for Hotel., Wilks and Roys.

Factor	F-score	Sig. of F
F1 - Behavioural	223.31	.00
F2 - Affective	1.16	.31
F3 - Cognitive	19.53	.00
F4 - Control	11.94	.00

Doubly Multivariate Analysis of Variance

Doubly multivariate analysis of variance of factor scores was conducted by control and treatment groups and by levels of drinking over time in order to measure the intervention impact. The following tables present a variety of evidence to illustrate the equivalency of the control and treatment groups at the start and the changes which took place over time as a result of the intervention effort.

Doubly MANOVA results (see table 12) showed no significant differences between control and treatment groups by drinking levels at the start, and as indicated by the significant F-score of 3.02, time had a significant effect on the factor scores.

In order to isolate the source of the changes, doubly MANOVA over time was run on the control and treatment groups separately. The control group showed no significant differences in factor scores by level of drinking over time (see table 13), however, results indicate significant differences within the treatment group during the two month experimental period (see table 14).

Table 12.
Doubly MANOVA By Group and By Levels of Drinking Over Time.

Effect	Pillais	Exact F	Sig.of F
GROUP BY DRINKING LEVELS	.09	0.76	.63
BY DRINKING LEVELS	.41	3.88	.00
BY GROUP	.07	1.14	.34
GROUP BY DRINKING LEVELS BY TIME	.19	1.65	.11
DRINKING LEVELS BY TIME	.22	1.89	.06
GROUP BY TIME	.11	1.93	.11
TIME	.17	3.02	.02

Note.. Equivalent results reported for Hotel., Wilks and Roys.

Table 13.
Doubly MANOVA (Control) By Levels of Drinking Over Time.
EFFECT .. TIME.

Name	Value	Exact F	Hypoth. DF	Error DF	Sig.of F
Pillais	.23	.94	4.00	12.00	.47

Note.. Equivalent results reported for Hotel., Wilks and Roys.

Table 14.
Doubly MANOVA (Treatment) By Levels of Drinking Over Time.
EFFECT .. TIME.

Name	Value	Exact F	Hypoth. DF	Error DF	Sig.of F
Pillais	.43	3.75	8.00	39.00	.00

Note.. Equivalent results reported for Hotel., Wilks and Roys.

MANOVA Before Intervention

MANOVA of factor scores by levels of drinking and control versus treatment showed no significant differences between the control and treatment groups at the start. Univariate F-tests indicated no significant differences across all four factors suggesting the control and treatment groups were acceptably equivalent (see table 15).

Table 15.
MANOVA By Levels of Drinking and Control Versus Treatment Before Intervention.
Effect..GROUP.

Name	Value	Approx. F	Hypoth. DF	Error DF	Sig.of F
Pillais	.04	.64	4.00	60.00	.63

Note.. Equivalent results reported for Hotel., Wilks and Roys.

Univariate F-tests with (1,63) D. F.

Factor	F-score	Sig. of F
F1 - Behavioural	0.03	.85
F2 - Affective	1.37	.24
F3 - Cognitive	1.40	.24
F4 - Control	0.18	.66

MANOVA of factor scores by levels of drinking and by control versus treatment showed significant differences between the Non, Moderate and Heavy drinkers at the start. Univariate F-tests indicated the source of that difference to be focused on F1, the factor measuring behaviour (see table 16).

Table 16.
MANOVA By Levels of Drinking and By Control Versus Treatment Before Intervention.
Effect..Levels of Drinking.

Name	Value	Approx. F	Hypoth. DF	Error DF	Sig.of F
Pillais	.47	4.75	8.00	122.00	.00

Note.. Equivalent results reported for Hotel., Wilks and Roys.

Univariate F-tests with (2,63) D. F.

Factor	F-score	Sig. of F
F1 - Behavioural	22.84	0.00
F2 - Affective	2.00	0.14
F3 - Cognitive	0.20	0.81
F4 - Control	0.63	0.53

MANOVA After Intervention

MANOVA repeated on factors at the end of the second month still show no significant overall differences between groups but an increase in F-values indicates divergence. Differences between control and treatment groups as indicated by changes to F-values, notably F1, the behaviour factor now shows

significant difference (see table 17). F-values for F1 changed from 0.03 to 6.90 indicating the gap between control and treatment groups after the intervention effort.

MANOVA of factor scores by levels of consumption and by control versus treatment showed significant differences between the Non, Moderate and Heavy drinkers at the start but do not after intervention (see table 18). This indicates that the clear distinctions between levels of drinkers no longer exists as a result of the intervention. Univariate F-tests still indicate only significant differences on F1, the factor measuring behaviour, but with a reduction in F-values.

Table 17.
MANOVA By Levels of Drinking and By Control Versus Treatment After Intervention.
Effect..GROUP.

Name	Value	Approx. F	Hypoth. DF	Error DF	Sig.of F
Pillais	.11	1.93	4.00	59.00	.11

Note.. Equivalent results reported for Hotel., Wilks and Roys.

Univariate F-tests with (1,62) D. F.

Factor	F-score	Sig. of F
F1 - Behavioural	6.90	0.01
F2 - Affective	0.00	0.93
F3 - Cognitive	0.73	0.39
F4 - Control	0.02	0.87

Table 18.
MANOVA By Levels of Drinking and By Control Versus Treatment After Intervention.
Effect..Levels of Drinking.

Name	Value	Approx. F	Hypoth. DF	Error DF	Sig.of F
Pillais	0.22	1.88	8.00	120.00	.06

Note.. Equivalent results reported for Hotel., Wilks and Roys.

Univariate F-tests with (2,63) D. F.

Factor	F-score	Sig. of F
F1 - Behavioural	6.96	0.00
F2 - Affective	0.08	0.91
F3 - Cognitive	0.99	0.37
F4 - Control	0.02	0.97

Small changes in F-scores confirm the difficultly in changing established attitudes and behaviours in a relatively short period of time. The educator should not expect radical change in a complex social behaviour as a result of so short and simple an intervention employed here. Nonetheless, interviews and discussions with students at the conclusion, confirmed progress toward positive behaviour change and increased awareness of risks. Perhaps F-scores are an inadequate tool for measuring activity in this area of study and should simply be regarded as descriptive aids.

Intervention Results

The intervention results suggest a variety of positive effects as first indicated by a comparison of means for the control and treatment groups (see table 19). Note the change from 4.2

to 3.3 for heavy drinkers in the treatment group for F3, the cognitive dimension. In fact, reductions are also noted for moderate and non-drinkers perhaps reflecting the fact that subjects were not as well informed about alcohol consumption risks as they might have thought before the intervention.

Table 19.
Comparison of Factor Means Before and After Treatment By Levels of Drinking.

	Control					
Factor	Before			After		
	Non	Mod	H	Non	Mod	H
F1 - Behavioural	2.0	4.5	4.7	3.8	4.4	4.7
F2 - Affective	4.8	4.2	4.7	4.0	4.5	4.5
F3 - Cognitive	5.0	4.6	5.0	4.2	4.6	4.2
F4 - Control	2.2	1.3	1.7	2.2	1.5	1.5

	Treatment					
Factor	Before			After		
	Non	Mod	H	Non	Mod	H
F1 - Behavioural	3.0	3.8	4.5	2.7	3.6	4.5
F2 - Affective	4.7	3.9	4.0	4.5	4.2	4.2
F3 - Cognitive	4.7	4.7	4.2	4.5	4.2	3.3
F4 - Control	1.8	1.8	2.0	1.3	1.7	2.0

Note..levels of drinking refer to Non, Moderate and Heavy.

Alcohol Consumption and Frequency of High Risk Environments

Reported average consumption of alcohol by treatment members remained virtually unchanged (Q3 = 2.58) at each phase of the study as did frequency of going to parties and bars (Q4 =3.00)

indicating the strength of present behaviours. However, closer examination of heavy consumers of alcohol indicate reductions in consumption and frequencies. Nearly 50%, 5 out of 11, heavy drinkers moved down one level of consumption and 67%, 12 out of 18, heavy bar and party frequenters reduced by one level the rate of their bar and party attendance. Both of these results indicate success with higher risk subjects and further support the belief that the intervention was successful on some levels.

Focus group discussions and interviews with students further confirmed the positive reaction to the intervention effort. Students expressed a strong interest in peer behaviour and regarded data as a good means to compare their own behaviour. Many expressed anger with the alcohol industry and indicated interest in taking pro-active action against campus newspaper alcohol related advertisements.

Audience Response to Video Presentation

Finally, the immediate reaction of the treatment group to the video presentation by level of alcohol consumption, as measured by questions 54 through 76 supports the belief that short-term immediate measurements of audience reaction to an intervention may not be a good indication of behavioural change (see table 20). An examination of the results indicates little suggestion of likely change in behaviour by heavy

drinkers. However, tracking over the following two months clearly demonstrated that behaviours had indeed changed.

Table 20.
Means and Standard Deviations of Immediate Reaction to Video By Levels of Drinking (N=51).

	Non		Moderate		Heavy	
	M	SD	M	SD	M	SD
Q54	2.6	0.9	2.7	1.4	2.1	1.2
Q55	2.2	1.2	1.7	1.2	1.7	0.8
Q56	3.8	1.5	3.6	1.3	3.6	1.3
Q57	2.9	1.5	3.1	1.3	2.8	1.4
Q58	3.4	1.0	3.2	1.2	2.7	1.1
Q59	4.0	0.8	3.1	1.1	2.8	1.1
Q60	3.3	1.0	2.8	1.2	2.3	0.8
Q61	2.9	1.2	2.8	1.3	2.2	0.8
Q62	3.3	0.9	3.4	1.1	2.7	1.0
Q63	3.3	0.8	3.3	1.2	2.9	1.0
Q64	3.9	1.1	3.2	1.2	2.6	1.1
Q65	4.6	0.6	3.7	0.9	3.3	1.1
Q66	4.6	0.6	4.0	1.1	3.9	1.2
Q67	4.6	0.6	2.8	1.0	2.4	1.3
Q68	5.0	0.0	4.0	1.3	4.3	0.7
Q69	3.2	1.6	2.3	1.2	1.2	0.4
Q70	4.3	0.8	3.2	1.2	2.4	1.2
Q71	3.6	1.1	2.8	1.4	2.8	1.4
Q72	1.6	0.9	1.9	1.1	2.3	1.6
Q73	1.9	1.1	2.0	1.0	2.3	1.3
Q74	3.9	1.1	2.8	1.4	2.6	0.7
Q75	4.4	0.9	3.4	1.5	3.3	0.9
Q76	4.4	0.9	3.3	1.4	3.1	1.1

Chapter 5

Discussion and Recommendations

The John Abbott College study is an illustrative application of the theoretical thesis paradigm recommended to educational technologists to help guide mediated health and lifestyle education intervention programs. From the early stages of problem and needs assessment to program and message selection through to impact evaluation, the theoretical foundations grouped into the thesis paradigm provide a theory based approach to the complex task.

"Advertising Alcohol: Calling the Shots" proved to be a good mediated program selection for the target audience. Students were receptive to the direct, factual and informative nature of the video-tape presentation and no messages of fear or threats attempted to motivate a reduction in drinking behaviour. Instead an opportunity to think and learn about the cybernetic relationship between the consumer and the alcohol industry was unfolded along with a challenge for individuals to exercise greater personal influence in the system through increased control of their drinking behaviour. The results suggest that the message was received and acted upon.

Survey results clearly suggest a drinking problem exists for about 28% (Heavy drinkers) of the John Abbott College student population while 52% (Moderate drinkers) are potentially at risk of becoming heavier drinkers.

A comparison of results in tables 8a and 8b, show clear descriptive distinctions between non, moderate and heavy drinkers. Generally, knowledge about alcohol consumption and risks are well established across all levels but tend towards higher means among non drinkers. Non drinkers are more open to information about alcohol problems and pay attention more than drinkers.

Although heavier drinkers are less likely to seek a ride rather than drive while under the influence, scores indicate a strong awareness of correct behaviour across all groups. Heavy drinkers are less likely to tell their peers they are drinking beyond their limit in comparison to others. This reflects a value judgement often expressed in focus group dialogue that this was an area of individual choice and not really anyone else's business.

The feelings toward the behaviour and the social environment are as expected stronger for heavier drinkers, although there was a general unwillingness to acknowledge the importance of drinking in order to have fun in social situations. The

tendency to drunkenness and maintaining a drunk condition was not reported by heavy drinkers but they openly admitted the likelihood of getting drunk at the next drinking occasion, indicating problem behaviour.

As for alternative behaviours at parties, it is clear that heavy drinkers attend with the express purpose of drinking alcohol whereas others see other behaviours to be more appealing. Heavy drinkers would rarely consider drinking non-alcoholic beverages whereas the other groups see these as quite acceptable.

All groups reported being happy and content with their lives, appearances, family and friends. They all feel in control of their lives but whereas non and moderate drinkers see the risk of loosing that control through alcohol, heavy drinkers do not. Low scores by heavy drinkers on questions associated with recognition of alcohol as a problem, indicate a lack of awareness for the need to control their behaviour. Fortunately, all groups indicated strong levels of self-efficacy in general and with respect to drinking in particular.

Examination of the factors scores indicate significant differences between the groups on three of the four factors. Although no significant differences were reported on F2, the

affective dimension which included feelings about self-concept and self-esteem, groups were different with respect to F1, their behavioural tendency toward drinking, F3, their cognition of correct behaviours in drinking situations and F4, their measures of self-regulatory control.

The results show a clear positive progression among members of the treatment group over a two month period lending support to the argument that small sized group intervention with peer feedback and discussion acted to change a variety of factors shown to be related to alcohol consumption behaviour.

Closer examination of score changes among those heavy drinkers who reduced their consumption reveal some areas where the intervention made its impact. For example, generally speaking both males and females reduced the number of times they went out to bars, increased their effort at learning more about the subject, increased their willingness to intervene in a friends drinking action, listen to their friends, call their parents when they have drunk too much and most interestingly, indicated effort at developing alternative action tendencies in drinking situation.

Consistent with Piaget's learning theory, the data suggests a time for deep processing and integration of what has been learned through intervention may be required to effect

behavioural change. Time, as a critical factor or catalyst, provides an explanation for differences in expressed intended behaviour results immediately after viewing the video and actual behaviour which unfolded over the following two months.

Just as Ajzen and others have found discrepancies between planned and actual behaviour due to intervening influences, it is interesting to note the twist discovered in this study. Although little intended effort at change was expressed by heavy drinkers immediately after viewing the video presentation, leading an observer to conclude that the effort was a poor one, in fact behaviour did change for the better.

Perhaps time is required to provide learners with empirical opportunities to discover whether in fact their social behaviour can change. Speculation might also include the need to test possible new Action Tendencies or strategies for changing behaviour before the individual recognizes that a new configuration of affect, behaviour and cognition has in fact arrived.

This notion suggests that educators may be using the wrong instrument for measuring intervention impact by focusing too much attention on cognition and micro-media factors such as camera angles and message content. This study suggests that

subtle changes, perhaps in cognitive processes not directly observed, play a stronger part in affecting behaviour change.

Research is needed to help determine whether in fact intervention efforts change behaviour by changing processes, that is, the way the individual processes the same social information, rather than the more static view of affect, behaviour and cognition. Theoretical parallels for this orientation is found in the Visual Theory literature which suggest that different mental processes may be at work when visual images as opposed to sounds are processed.

Another explanation for educational technologists to consider is perhaps there was an unwillingness of subjects to admit the intervention effort affected them or perhaps there was a lack of awareness that the intervention had indeed made an impact. Consistent with Bem's approach to attitude change, perhaps intervention effort creates a window of opportunity by destabilizing the present configuration leaving open the opportunity for change in the near future where a newly tried behaviour pattern convinces the individual that indeed he has changed. After the behaviour, affective and cognitive components realign themselves to properly reflect the current balance.

Regardless of the reason or reasons for the gap between intended behaviour and actual behaviour, the results bring into question whether behavioural intention is a good predictor of actual behaviour as argued by Reasoned Action theory. Perhaps the configuration of antecedents to behaviour as summarized by behaviour intention, are too unstable to be of much use in predicting what will occur when the next drinking social experience occurs.

The results suggest that the importance attributed to behaviour intention as proposed by Reasoned Action theory at the very least, may be over-rated. The weakness may lie in the research imperative to simplify complex cognitive processes and thereby miss the critical, but minute catalyst which may direct future behaviour.

This study suggests that researchers might be better served by regarding behavioural intention as nothing more than a best guess at what the individual hopes to do or expects because of previous experience. In effect, the behaviour intention is really just one possible, albeit the most prominent, action tendency within the individual's inventory of social behaviours. Rather than employing a reductionist approach to understanding social behaviour, researchers should instead accept that the individual carries a complex schema of behaviour patterns (action tendencies) which have various

degrees of probability of being executed. Ultimately, only post facto analytical study can reveal why one action tendency emerged instead of the anticipated behaviour intention.

Behaviour tends to be routine because it saves time and frees the individual's attention for other problem-solving concerns. Routine behaviours are necessary in order to function efficiently in a complex, dynamic and overwhelmingly stimulating social environment. Once learned, an Action Tendency is an asset. It can be invoked on cue without much mental effort. Is it any wonder then, that forcing an individual to change that comfortable behavioural routine is difficult and complicated. At the very least, the educational technologist should be prepared for subjects to experience as much mental activity at deriving the new behaviour pattern as they endured while developing the old. As such, is it any wonder that time and empirical experience with testing and exploring this new routine is a necessary requirement for more permanent successful behavioural change.

This study found a range of individual behaviour routines within the group, from non drinking at one extreme to heavy, abusive consumption at the other. Each level of drinking represented a behaviour pattern which may have been learned and reinforced. Educators should recognize that these behaviour patterns possess probabilities of coming into

existence and that the probabilities can be increased or decreased in the future. The present probability to drink at a particular level is relatively stable but can be changed.

Individuals who have little or no behaviour tendency to drink alcohol may not remain that way if their choice is undermined by an inability to socially interact comfortably in social environments where alcohol consumption is taking place. The condition of not knowing how to behave in social situations produces dissonance and is likely to be acted on in some way. The neophyte's temporary state of "inert" behaviour tendency is due to a lack of experience and indecisiveness and will automatically trigger cognitive processes to deal with a new problem-solving situation.

What educators should be looking for is the opportunity to create that first positive behaviour tendency before negative ones have a chance to develop. Just as education efforts at preventing panic during crisis situations involving behaviours during a fire or how to deal with a drowning victim, the proper educational strategy is to train individuals in advance so that they know what to do when the crisis occurs. In this way, behaviour routines that are correct are cued and triggered automatically in crisis situations when only correct behaviours are acceptable.

By nurturing healthier action tendencies and undermining unhealthy ones as this intervention did, educators can gradually strengthen the probabilities for healthier action tendencies emerging in future social situations. As Social Learning theories suggest, deep understanding through empirical experience will reinforce individual choices as to which action tendency to select at the next opportunity.

Following Festinger's and Bem's view that individual's tend to maintain attitude and behaviour congruency, it is evident that the intervention effort disturbed the attitude side of the equation sufficiently to cause many subjects to re-evaluate their alcohol consuming behaviour. The tri-component structure of affective, behavioural intention and cognitive dimensions comprising the attitude framework in this study and the more subtle underlying components of self-regulation and self-efficacy help suggest where change potential originated.

Strategies for change may come from any one or more of the following orientations. First, as suggested by the research, the cognitive dimension should be considered fundamental to any change strategy. Asking someone to change their behaviour when no factual information exists to explain the reason for change is likely to fail. This idea is also consistent with continuing positive behaviour. That is, if no factual information can be presented to reinforce good social

behaviour, the behaviour is likely to be undermined and would be vulnerable to alternative more appealing behaviours.

Secondly, the affective dimension is often a poorly understood or appreciated factor for understanding present behaviour and subject's unwillingness or inability to change. Deep emotional associations are as part of the behaviour schema as factual information, beliefs and other cognitive items. Asking someone to change behaviour involves an emotional change with respect to the behaviour. The feelings about drinking will not be the same after the behaviour has been changed and intuitively, subjects understand this. The strength of the emotional bonds should be recognized as difficult challenges in the effort to replace one behaviour pattern with another.

Thirdly, the educator should employ the direct route to behavioural change and pay less attention to the cognitive or affective issues involved. By challenging subject's self-regulatory control as was done in this intervention study, perhaps behaviourial change can be motivated.

Regardless of how the affective, behavioural, cognitive configuration of complexities are re-aligned for healthier social behaviours, the new configuration can easily be undermined by future influences as subjects interact with an ever changing environment. It is unlikely that any video-based

intervention experience will be powerful enough to overcome all future influences favouring alcohol consumption. The task then is to recognize that intervention effort to maintain healthier behaviour must be constant, monitored and revised as needed.

Research into improving the questionnaire design to more accurately measure the antecedent factors would be useful to educators and lead to better strategies for media evaluation. For example, it may be argued that factor analysis has not served well in reducing the large number of questions into a few clearly defined and interpretable factors. Perhaps the weakest of these is F2, the factor measuring the affective dimension. This may also be due to weaknesses in the original questions which attempted to measure this attitudinal domain.

Furthermore, the compilation of a variety of sub-group average scores on these measurements would provide educators with a reference for making immediate individual comparisons to sub-group norms. For example, knowing the scores for say a group of inner city, women between 17 and 19 years old would provide the educator with a diagnostic tool for evaluating new groups and individuals in much the same way a financial budget allows comparison between planned and actual performance. Data could also be tracked over time to allow evaluation of longer-term intervention effort and the effect on antecedents.

Finally, the creation of "standardized" measurements of the antecedents for a variety of sub-groups would provide individual learners with information about peers and offer guidelines for self-regulation in much the same way that dietary charts suggests appropriate food intake to help maintain good health.

The thesis paradigm and the illustrative study have demonstrated the importance of adequate theoretical underpinning for the use of educational technology in intervention design. Further research in other social settings and with other health and lifestyle intervention efforts will add to the confidence in the paradigm to serve a wide variety of situations including smoking cessation, eating disorders and coping with violent social confrontations.

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Appendix A

Questionnaire A and B

Alcohol Research Survey

The following questionnaire is part of a research program being conducted by Professor Brahm Canzer of John Abbott into alcohol consumption behaviour of college students.

Please answer the following questions only on the answer sheet provided and return all materials to your supervisor when you are finished. Most students will complete the questionnaire within 15 to 20 minutes.

To assure anonymity and confidentiality, please enter a personal code number in the space provided for IDENTIFICATION NO. on the answer sheet. This code number could be your locker combination or any other number you will be able to recall easily in the future if your class is asked to participate in another phase of this research program. Please select a number which will only be associated with you and is unlikely to be duplicated by another student. For example, do not use your birth date. Thank you for your help.

Answer All Questions On The Answer Sheet Only

1. If you are Male select 1. If you are Female select 2.

2. Select the age you are today..
   17 years.. select 1
   18 years.. select 2
   19 years.. select 3
   20 years.. select 4
   21 years+ select 5

3. When you go out for the night with your friends to a party or bar, how many alcoholic drinks do you usually consume? Note: one drink would be equivalent to a regular individual size bottle of beer, a four ounce glass of wine or one drink containing one ounce of hard liquor.

   0 .. select 1
   2 .. select 2
   4 .. select 3
   6 .. select 4
   8+ .. select 5

4. How many times in a month do you usually go out for the night with friends to a party or bar where alcoholic drinks are consumed by you or others?

0	.. select 1
2	.. select 2
4	.. select 3
6	.. select 4
8+	.. select 5

INSTRUCTIONS

Using the scale below, enter the appropriate number code on the answer sheet which best describes your answers for the rest of the questionnaire.

1	2	3	4	5
Disagree	Somewhat Disagree	Neutral or No Opinion	Somewhat Agree	Agree

5. I believe I am well informed and know the risks and health dangers associated with alcohol consumption.

6. Although alcohol is legally available for sale, it is in essence still a dangerous drug which needs to be understood by consumers.

7. I read warning labels on alcoholic beverage containers.

8. I notice public service announcements in the media about alcohol consumption issues.

9. I read articles about alcohol consumption issues.

10. I would never drive after drinking too much alcohol.

11. I would ask a friend to drive me home if I did drink too much alcohol.

12. I would call my parents or another relative to get me home if I did drink too much alcohol.

13. I would tell a friend to stop drinking if I felt they were over-doing it.

14. I would follow a friend's suggestion to stop drinking.

15. I would stop a friend from driving if he had been drinking.

16. I would never be a passenger in a car driven by someone who had been drinking.

17. I like the feelings I experience when I drink alcohol.

18. I like drinking at parties and bars.

19. I feel my drinking behaviour is about right.

20. I sometimes feel regret after drinking, especially the following day.

21. I feel comfortable being around people who are drunk even if I am not.

22. After I have had a few drinks at a party, my behaviour becomes routine and predictable.

23. At parties, I need to drink alcohol in order to have fun.

24. After I've had a few drinks at a party, I keep drinking to keep the drunk feeling constant.

25. After I've had a few drinks at a party, I keep drinking to get as drunk as I can.

26. I find it difficult to socialize with people at parties without drinking alcohol.

27. I probably will get drunk at the next party I go to.

28. I look for other things to do at parties, other than drinking.

29. I can think of several non-alcoholic beverages that I could enjoy consuming as a substitute for alcohol.

30. I sometimes prefer drinking non-alcoholic beverages at parties.

31. At a party, I would be embarrassed to tell people that I am drinking a non-alcoholic beverage.

32. I try to avoid people at parties who I know will encourage me to drink.

33. I feel good about who I am.

34. I am happy with my life so far.

35. I am happy with the way I look.

36. At parties, I believe an alcoholic drink in my hand makes me look better.

37. Getting together with friends and getting drunk at a Saturday night party helps me feel better about my life.

38. I have a lot of problems which have nothing to do with alcohol.

39. I believe I have a drinking problem.

40. I have good friends who care about me.

41. I have a family that cares about me.

42. My friends know the real me.

43. I wish I was someone else.

44. On the whole, I feel I am in control of my life.

45. I always like feeling in control of my behaviour.

46. I always like feeling in control of my behaviour, so I usually avoid drinking too much alcohol at parties.

47. At parties, I can control my drinking behaviour.

48. At parties, drinking helps me feel more in control.

49. I am presently trying to reduce or control my drinking behaviour?

50. I should be trying to reduce or control my drinking behaviour?

51. I always determine for myself how much I will drink; my decisions are rarely influenced by my friends.

52. I have the ability to do anything I set my mind to; I just have to want to do something and I do it.

53. I could stop drinking if I felt I was drinking too much alcohol at a party.

Questionnaire B

INSTRUCTIONS

AFTER VIEWING THE VIDEO, enter the appropriate number code on the answer sheet which best describes your answer.

1	2	3	4	5
Disagree	Somewhat Disagree	Neutral or No Opinion	Somewhat Agree	Agree

54. I intend to reduce the number of alcoholic drinks I normally consume when I go out with friends to a party or bar.

55. I intend to reduce the number of times I normally go out with friends to a party or bar.

56. I have learned some new facts about health risks associated with alcohol consumption which I did not know about before.

57. I have learned some new problem-solving techniques about behaviours associated with alcohol consumption which I did not know about before.

58. I intend to learn more information about alcohol from product warning labels, public service announcements on T.V. or articles in the press.

59. My feelings about drinking alcohol are less positive than before.

60. I intend to find things to do with friends other than going to parties and bars and drinking.

61. I have learned some alternative strategies for controlling alcohol consumption.

62. I expect I will drink with greater control at the next party I go to.

63. I intend to make greater effort to control the amount of alcohol I drink.

64. At the next party I go to, I intend to find other things to do other than drinking alcohol.

65. I intend to try to socialize with people at parties without drinking alcohol.

66. I can think of several non-alcoholic beverages that I could enjoy consuming as a substitute for alcohol.

67. I intend to drink non-alcohol beverages at parties.

68. At the next party I go to, I will not be embarrassed to tell people that I am drinking a non-alcoholic beverage.

69. At the next party I go to, I will try to avoid people who I know will encourage me to drink.

70. I feel better about myself after watching the video.

71. I have learned some things about myself.

72. I feel I share some similarity with those people presented in the video.

73. I think I should be trying to reduce or control my drinking behaviour?

74. I now feel more in control of my life.

75. I now feel more able to determine for myself how much I will drink; my decisions are mine.

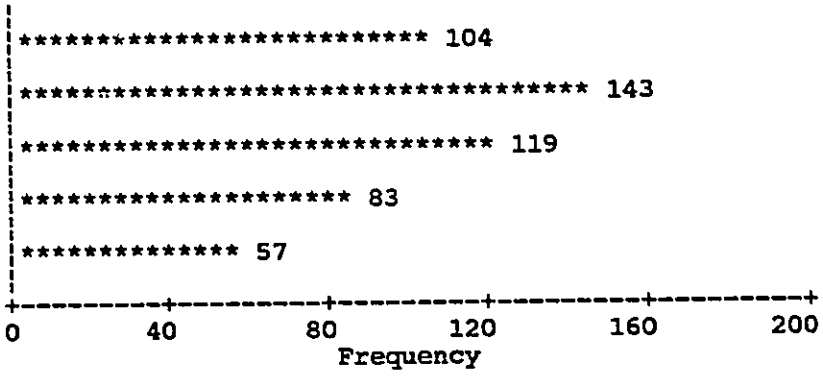
76. I now feel more able to do anything I set my mind to.

Appendix B

Sample Data Used For Discussion

Q3

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	1	104	20.6	20.6	20.6
	2	143	28.3	28.3	48.8
	3	119	23.5	23.5	72.3
	4	83	16.4	16.4	88.7
	5	57	11.3	11.3	100.0
	Total	506	100.0	100.0	

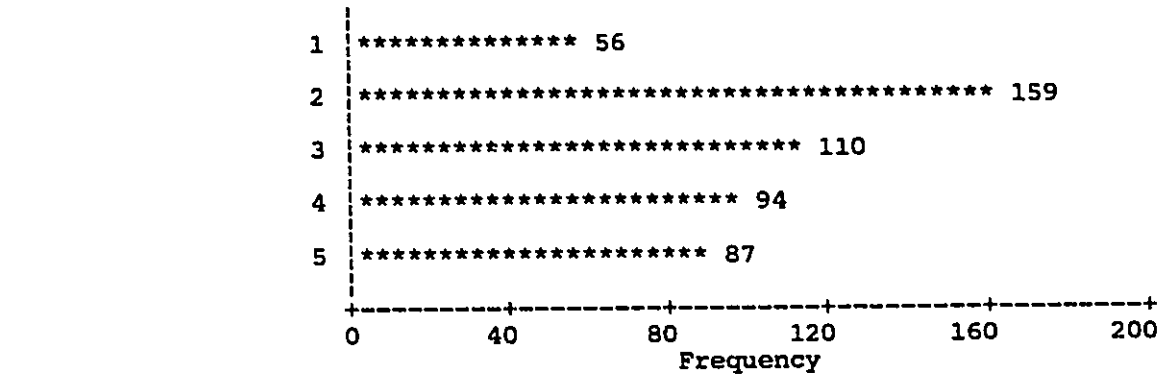


Mean	2.696	Std err	.057	Median	3.000
Mode	2.000	Std dev	1.277	Variance	1.630
Kurtosis	-.950	S E Kurt	.217	Skewness	.315
S E Skew	.109	Range	4.000	Minimum	1.000
Maximum	5.000	Sum	1364.000		

Valid cases 506 Missing cases 0

Q4

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	1	56	11.1	11.1	11.1
	2	159	31.4	31.4	42.5
	3	110	21.7	21.7	64.2
	4	94	18.6	18.6	82.8
	5	87	17.2	17.2	100.0
	Total	506	100.0	100.0	



Mean	2.994	Std err	.057	Median	3.000
Mode	2.000	Std dev	1.278	Variance	1.634
Kurtosis	-1.107	S E Kurt	.217	Skewness	.188
S E Skew	.109	Range	4.000	Minimum	1.000
Maximum	5.000	Sum	1515.000		

Valid cases 506 Missing cases 0