EVALUATION OF A MASS MEDIA HEALTH EDUCATION CAMPAIGN FOR TUBERCULOSIS CONTROL IN CALI, COLOMBIA

Ernesto Jaramillo Betancur
Education and International Development and Policy Studies Academic Groups
Institute of Education, University of London

Thesis submitted as part of the requirements for a Ph.D. award
London, June 1998

BIBL.
LONDIN.
UNIV.

For Sandra

“there is some evidence that well-designed, well-executed and competently evaluated campaigns, for which there are generally low expectations of success, can be and have been construed as effective and defined as “pro-social” by their organizers. Yet this question, important in the narrow confines of administrative research, pales in comparison to questions involving the underlying proprietary and latent social functions of these efforts. Because every decision to engage —or refrain of engaging—in social intervention necessarily involves conflicts of values, campaigns represent weapons in conflicts of interests”

(Salmon 1989) (p. 46).

ABSTRACT

Tuberculosis is a world-wide problem in less developed countries. In this thesis I report the evaluation of impact, process and objectives of a mass media health education campaign for tuberculosis control developed in Cali, Colombia. The campaign aimed at reducing levels of prejudice against people with this disease and at increasing demand for diagnostic tests.

I assessed impact on levels of prejudice using two cross sectional surveys as sources of data. I assessed impact on demand for diagnostic tests with a quasi-experimental evaluation design relying on epidemiological data. I used qualitative and quantitative techniques for assessing the process of the campaign. I used text analysis for assessing the objectives of the campaign, and for identifying the values underpinning these objectives.

The results show that the campaign significantly reduced the prejudice, and increased the demand for tests. Process evaluation shows that the campaign managers applied satisfactorily the programme theory of the intervention, that around half of the population was exposed to the campaign, and that it aimed exclusively at reinforcing a medical approach to tuberculosis control, which promoted compliance with medical surveillance, instead of contributing to the creation of an educated public regarding this disease. Assessment of objectives showed that the values underpinning the campaign are Utilitarian which define the worth of human life in terms of its economic productivity.

This thesis demonstrates that current evaluation models of health education, which draw only on impact and process, are inappropriate for all those who have an interest at stake in the programme in order to judge its worth and to take policy decisions. Health education programmes are responses to social problems based on a specific idea of what is worthwhile to be pursued by individuals and society. Thus, evaluation research in health education should include not only assessment of impact and process but also assessment of their objectives in order to unveil the values underpinning such responses.

TABLE OF CONTENTS

Part II

Part III

Appendixes

LIST OF TABLES

LIST OF FIGURES

LIST OF GRAPHS

ABBREVIATIONS

ANOVA	Analysis of Variance
BCG	Bacillus of Calmette-Guerin
DALYs	Disability Adjusted Life Years
DOTS	Directly Observed Therapy Short-Course
GDP	Gross Domestic Product
GNP	Gross National Product
HCWs	Health Care Workers
HIV	Human Immunodeficiency Virus
IMF	International Monetary Fund
IUATLD	International Union Against Tuberculosis and Lung Diseases
KAP	Knowledge, Attitudes and Practices
LAC	Colombian League Against Tuberculosis
LDCs	Less Developed Countries
NGOs	Non Governmental Organisations
PWT	People With Tuberculosis
QALYs	Quality Adjusted Life Years
TB	Tuberculosis
UN	United Nations
UNDP	United Nations Development Programme
WHO	World Health Organisation

ACKNOWLEDGEMENTS

My interest in tuberculosis began 12 years ago when I was participating in a primary health care programme for an indigenous community in Colombia. I had been told at the school of medicine that we should suspect tuberculosis in every individual poor and with chronic cough, and in this indigenous community I found both cough and poverty everywhere. To make more effective my work as a volunteer I found necessary to improve my knowledge about tuberculosis. Thanks to Luz Maria Guerra, I made contact with Dr. Carlos A. Victoria, who introduce me into the world of tuberculosis. I am thankful for the support and advice he gave me while working in the Tuberculosis Control Programme of Cali. I decided to leave the country for doing a training abroad (which main material result is this thesis) that could help me to digest better the learning experiences I had had. I am extremely grateful with too many people who helped me in different ways to achieve the goals of this training.

Thanks to Dr. Alberto Alzate who encourage me to do training in Britain, and gave me important advice during the earliest steps of this thesis. I am thankful to Drs. Gabriel Carrasquilla, Hector R. Echavarria, Oscar I. Rojas and Luis A. Tafur I got a scholarship from the fund Beneficencia del Valle-Universidad del Valle-Fundacion FES, for beginning my doctoral training. I am thankful to Nora Valli de Jaramillo, Perla Luz Rossi de Gandini and the Board of Directors of the Colombian League Against Tuberculosis and Lung Diseases (Chapter of Valle) for their full support during the time I worked in the League. I am thankful to Dr. Nancy Gore Saravia for inviting me to join the 'Fundacion Cideim' as an associate researcher, making it possible for me to obtain a scholarship from Colciencias (the Colombian funding body for scientific research and training). Thanks to Colciencias I could fulfil most of the objectives of my training project. Thanks to Louisa Van Den Eynde and the charity 'De Brug', who helped with a grant at a particular difficult moment of my training.

I am thankful to Drs. Alberto Concha, Antonio Irurita, and Carlos A. Hernandez. As Secretaries of Public Health of Cali, they gave me not only full support while I was working in the tuberculosis control programme, but also facilitated the use in my doctoral dissertation of data I collected while working for this Secretariat. I am thankful to Erika Arias, Martha Cecilia Castaño, Gloria de Vernaza, Dr. Ricardo Garcia, Dr. Jose Thier Montero, Maria Fernanda Realpe, Isabel C. Rios, Alba Maria Ropero, Dr. Carlos

Salazar, Dr. Esther Sumartojo, Marlene Vahos, Isabella Vernaza, Dr. Jorge Victoria, Dr. Rodrigo Viteri and Diana Weidl for their help in finding key data and references. I am thankful to Mr. Anthony Green, Drs. Janet Holland, Janet Harland, Angela Little and Ian Plewis for their teaching and thinking while I was writing this thesis. I am thankful to Drs. Paul Farmer, John Porter, Rodrik and Deborah Wallace for the discussions we had and for their work, which challenged many assumptions I had about tuberculosis and its means of control. I am particularly thankful to Drs. Eva Gamarnikow and Elwyn Thomas, who supervised my research training. They made space for me to be as creative as I could, being supportive rather than directive. I am most grateful for that.

I am grateful to many friends for their interest in my work, for their material and emotional support and for the encouragement I receive from them. I am most grateful to Cyriel de Pauw, ready to help me unreservedly at all times, and always thinking in my welfare. I am thankful to Noemi, Francisco, Alicia, Olga and Melba, Abraham, Maria Fernanda and Millerlania for all their support and care. Thanks to Cilli Govaers, who many years ago began to help me to have access to formal education, and still today is caring of this project; to Rene and Jeanine Vanderheyden; Debora, Reinaldo and Francis Caldas; and Guillermo Ponce for their unreserved support at particularly difficult moments. I am most thankful to Elena del Corral and Drs. Denise Gastaldo, James Montoya, and Samuel Mindel and for their honest and opportune advice at definitive moments of my training; to Merle Mindel for her honest challenge to my beliefs, her encouragement and her concern with our welfare. I am grateful to Roman Roither for the present of the unforgettable holidays of the summer 1997, an opportune healthy break for the demanding life of a student. I am grateful to the staff of 'John Adams Hall' and the 'International Lutheran Student Centre', for doing their best for making of my staying in both places a pleasant and unforgettable experience.

I am grateful to Sandra. Her faith in God and in we ourselves, her advice and patience, and her deep love are all the best I could ever wish during this time. Her soul, as the mine, was also strengthened throughout all the hardships arising day by day and that we have faced together. This strength is really the most precious achievement we have had during these years. Indeed, above all, I thank God for helping me to make of this learning experience an opportunity of personal growth. It is this growth what really matters, after all.

Chapter 1

1. INTRODUCTION

Tuberculosis (TB), a deadly bacterial infectious disease, is one of the most important causes of death in most less developed countries (LDCs). TB control in these countries is currently based on two different activities. First, finding of suspect cases and diagnosis of those transmitting the bacteria (case finding). Second, the healing through chemotherapy of those who are infectious. Unfortunately the strategy has not been very successful. Among the many factors discussed to explain the failure of the strategy those dealing with health behaviour are prominent. Some of them are delay by people sick with TB (PWT) for seeking health care, the stigma attached to the disease and the discrimination suffered by PWT, non-adherence of PWT to the treatment, and people's scientifically unfounded beliefs about TB. Small wonder then that health education is claimed to be essential for the strategy to achieve its goals (White et al, 1995).

I am reporting in this thesis the evaluation of impact, process, and objectives of a mass media health education campaign for TB control carried out during six weeks, between April and May (1994) in Cali, Colombia. This campaign aimed at reducing levels of prejudice against PWT and at increasing demand for diagnostic tests. The messages of the campaign were based on social marketing techniques, and the Health Belief Model and Social Learning Theory. The intervention was sponsored by an alliance of the Secretariat of Public Health of Cali and the Colombian League Against Tuberculosis and Lung Diseases, Chapter of Valle (LAC-Valle), a non-governmental organisation (NGO). These two bodies also financed part of the evaluation of the campaign I am reporting here.

The size of the population affected by TB is such that it seems convenient to employ health education approaches having the best coverage and, at the same time, having a high cost-efficient ratio. Health education through mass media has proved to fulfil these requisites. It has been successfully used in LDCs for controlling infectious diseases and promoting family planning—fostering the demand for drugs, vaccines or contraceptive pills. In spite of the world-wide burden of TB, and the claims for including health education in the strategy of control which were made many years ago by its leaders (Fox 1962), health education approaches through mass media are very rarely reported in the

English scientific literature. In fact, I found only one report (Girling 1985) using the key words *mass media*, *health education* and *tuberculosis* for reviewing the literature indexed in MEDLINE and EXCERPTA MEDICA during the last 20 years.

The evaluation of this campaign has two aims. First, to assess the process of the campaign, and its impact on the control of TB in Cali in terms of case finding. Second, to develop a more comprehensive model of evaluation in health education and health promotion, that includes not only the assessment of impact and process but also the assessment of the objectives set by the sponsors of the social programme. In order to develop these aims I address three different research questions. Firstly, what was the impact of the campaign on the prejudice against PWT, and on the demand for direct smear tests? Secondly, what was the process of developing the campaign? Finally, which values underpinned the objectives of this intervention?

To assess impact on levels of prejudice at population level I use a pre-test—post-test evaluation design. I measured the prejudice before and after the campaign with a social distance scale in a face-to-face cross sectional survey. For assessing impact of the campaign on case finding I use a quasi-experimental evaluation design. I examine trends in the demand for diagnostic tests relying on records of the epidemiological surveillance system of the TB control programme in Cali and Risaralda, the control group.

I assess four dimensions of the process of the campaign: implementation, network analysis, programme exposure and social acceptability. To assess the implementation of the campaign I used text analysis of the messages and observations I carried out during the campaign. In order to carry out a network analysis I conducted group interviews with key informants. To assess programme exposure I relied mainly on television audience surveys conducted by a company specialising in this work. I conducted several group interviews along the six weeks of the intervention to assess social acceptability of the campaign.

To assess the objectives of the campaign I used text analysis. Indeed, I relied on the programme theory of the campaign and the medical literature for examining the empirical justification of the objectives of the campaign. Once this examination reaches an stage where the objectives can not be longer justified on empirical basis it is possible to identify its underpinning values.

I was responsible for the design and implementation of the campaign. I was also commissioned by the sponsors of the intervention for evaluating its impact and process. When I carried out this work I was, at the same time, chief officer of the TB control programme of the Secretariat of Public Health, and of the medical and social services of the LAC-Valle. Four months after the end of the campaign I reported to the Secretariat of Public Health and the NGO the preliminary results I managed to collect and analyse, and continued developing this evaluation research as part of my PhD thesis.

In terms of the evaluation, my contractual relation with the sponsors of the campaign occurred while gathering data for evaluating impact and process of the programme. Being an insider for the campaign facilitated understanding of how objectives were selected by both institutions, and how the process developed. Improvements upon the original research design, analysis of raw data, and the adoption of a critical stance towards evaluation research in health education and health promotion were facilitated by the new academic environment where I continued developing this evaluation. They were also facilitated by the loss of all contractual relationships with the sponsors of the campaign from the beginning of the PhD course. Thus, the terms of my approach to the field as researcher and as evaluation researcher fit very nearly into the *practioner-as-researcher* and the *autocratic evaluation* modalities I discuss in chapter four of this thesis.

The main argument I present in this thesis is that, within the context of liberal democracies, evaluation research in health education and health promotion must embrace models that not only examine the impact and process, but also the objectives of the programme. By examining the objectives, or the criteria that the programme managers usually choose for judging the impact of the intervention, it is possible to unveil the values underpinning the programme and how the problem was defined by the designers of the programme. An evaluation of a health education programme that presents also the values underpinning the intervention does make a difference in the policy debate in respect to those evaluations that only provides evidence of impact and process.

Indeed, I argue that the main function of evaluation research in health education is to examine if the intervention helped *all* those having an interest at stake in the programme, first, to make better informed choices in their daily life and, second, to take better informed decisions in the policy making process. In line with this, I argue that clarifying the notion of what is 'good' which sustains health education and health promotion programmes, and not only what its impact and process, is a fundamental contribution that evaluators can make to the policy debate.

The argument presented in this thesis is based on the assertion that health education and health promotion practice are driven by values and not only by facts. It is not the plain fact that TB is a deadly disease that makes us to choose a specific strategy to control it. Instead, the control strategy is the result of a specific set of ideas about what is worth to pursue in human life and how society should work. This set of ideas are values which permeate every action in health education and health promotion, and in the complex process of making social policy.

Evaluation research that presents evidence for individuals, communities and governments to judge the worth of health education programmes is fundamental for furthering progress in these fields, and for policy makers to develop new strategies that help to improve individual and social well-being. Evaluation researchers normally draw on assessment of impact and process for judging the merit of social programmes. Yet this is an inadequate approach to evaluation in health education, as I demonstrate in this thesis. The inadequacy of this approach lies in the assumption that social programmes are value free endeavours and that stakeholders develop policy on the basis of the verdict of objective evaluation.

Systematic evaluation of health programmes is one of the consequences of the new role that, in modern capitalist societies, individuals have in relation to their health and health care services. Indeed, until some decades ago the solution to the main health problems was an exclusive responsibility of the state. However, the way in which social problems are increasingly understood by the main actors in policy making has made individual behaviour the main explanatory factor in health and disease. This explains why health education is now seen by many as one of the most powerful tools in disease control. Indeed, health education is a cornerstone of the primary health care strategy Health For All promoted by the World Health Organisation (WHO) (WHO 1978). As a result, governments now challenge public health practitioners to 'help' individuals and communities to modify behaviours which contribute to the spread of health problems such as, for example, the Human Immunodeficiency Virus (HIV) or the coronary heart disease epidemics.

Researchers have described a multitude of theories regarding the determinants of health behaviour. These theories attempt to explain the ways, the processes or mechanisms by which individuals and social groups behave. Many theories work very well under certain circumstances and environments, but others do not. Successful results achieved in developed countries by projects using the dominant theories of health behaviour tend to promote their application in LDCs. However, many of these health education projects are not always successful. Some of the factors which explain this lack of success are, for example, omission of the cultural context and system of health operating in the specific community, lack of community participation in the design and implementation of the projects, programmes relying on a reductionist model of causality, and failures in the planning process, in the organisation of the project and in carrying out evaluation research. In fact, behaviour does not occur in a vacuum, and provision of supportive environments is fundamental for the aims of health education programmes. This interdependent relationship between behaviour change, as the outcome of health education, and supportive environment is at the core of the health promotion discourse, and explains why it is necessary to look at health education within a health promotion perspective.

One of the factors mentioned above which explains the failure of many health education programmes is lack of evaluation research. This concern is particularly serious in the context of the HIV epidemic, for example, where the lack of sound evaluation designs precludes conclusions about the effectiveness of health education. Sound evaluation of health education and health promotion programmes is essential to build up the knowledge required in order to face the challenges of public health. But what is sound evaluation? Health education and, particularly, health promotion are relatively new disciplines which are frequently under fire from those who dispute their theories and methods. This is particularly true when we take into account the context created by the current health care reforms, within which health education and health promotion action currently develops. As the theoretical frameworks of health education and health promotion are diverse and, to some extent, contradictory, practitioners try to demonstrate the soundness of their approaches with evaluations that look exclusively at the impact of the programmes.

However, as I argued earlier, any programme aimed at tackling a social problem is the product of an specific idea about the nature of the problem and of a particular set of values (ideas about what is good and worthwhile) underpinning the solution incorporated into the programme. Most evaluators ignore this point, and take for granted that the objectives of the programme are good and that its sponsors define 'correctly' the problem it aims to tackle. In fact, evaluators of health education and health promotion rely on evaluation models that do not question the way in which the problem is defined and that ignore the role played by the values underpinning the programme under evaluation. Most evaluators agree that evaluating is nothing else than valuing a social programme, that is, judging the worth of the intervention. However, only a few evaluators recommend including an examination of the objectives embodied in the programme in order to identify the values embodied in the intervention. This thesis aims to fill this gap in evaluation research of health education by developing an evaluation exercise based on a model that encompasses assessment of impact, process and objectives.

This thesis has three parts. Part I provides a literature review and the theoretical frameworks for this thesis. In the second chapter I review several definitions of health, and explore the relationship between health, development, and social capital. It includes a discussion of the basic definitions of different strategies of health education. Finally I review health promotion and the main critiques of its aims and strategies. In the third chapter I present the basic concepts of the epidemiology of TB, the current biomedical model of control and the social and behavioural issues resulting from this model. I also include in this chapter a critique of the basis of the biomedical model of control, and provide an alternative model of control that tries to locate and explain TB in a wider perspective. In the fourth chapter I review *evaluation research* as a field of social science research. I introduce the antecedents and aims of evaluation research, its most relevant theories, and the current models of evaluation in health education and health promotion.

Part II, chapters five and six, presents a description of the campaign, and of the methods chosen and techniques applied in the field in order to answer the research questions. In the first section of chapter four I include a description of the challenges for health education and health promotion in the Colombian context. In the second section I describe the campaign and its programme theory, which reflects the manager's perception of the problem to be tackled by the intervention. In the first section of chapter six I present the research design I used to answer the three research questions of the evaluation. In the second section I discuss the sources of the qualitative and quantitative data I draw on and the research techniques employed to process and analyse these data in line with the research design.

Part III presents the results and discussion of the evaluation. In chapter seven I present the results of the evaluation of impact, process and objectives of the campaign. In chapter eight I discuss the research findings in the context of the main argument of this thesis. In chapter nine I present the main conclusions drawn from this evaluation, and its implications for further research and practice in the evaluation of health education programmes.

Chapter 2

2. HEALTH EDUCATION: A MEANS FOR SOCIAL DEVELOPMENT

2.1 INTRODUCTION

In this chapter I argue that health education is a means not only for helping people to make informed choices in matters dealing with health but, and more importantly, also a means for social development through the creation of a health literate population. In this way health education could become a powerful trigger of social development processes. In the first section I introduce the most common concepts of health, on which different notions of health education and health promotion are based. In the second section I discuss the relationship between health with development. Here I emphasise the growing importance attributed to the creation of 'social capital' as a resource for social development and social cohesion. In the third section I review some definitions of health education, and its main strategies. In the fourth section I introduce health promotion as an essential complement of health education.

The contextual nature of the concepts of health, health education and health promotion I am introducing in this chapter must be taken into account. These concepts have been produced in western industrialised countries and their development is affected by people culture, economy and social structure. These factors change over time, and influence in different ways the prevailing ideas about health and health education. Some authors argue that trying to construct a comprehensive theory of health, health education and health promotion suitable to every situation and context is an impossible and, perhaps, an unnecessary task.

Indeed, recognising communities' needs, values and difficulties at every stage of their history is a key to building up the knowledge required for social development. Unfortunately, due to the dearth of both quality and quantity of social science research in Colombia I am not in a position to draw on the appropriate concepts for the Colombian context. However, it is important to keep in mind that this a western low middle income country with an emerging economy, that making it appropriate, to some extent, to the apply the concepts discussed in this chapter.

2.2 HEALTH AS A COMPLEX CONSTRUCT.

Health education is seen quite often as the panacea for the health problems of both developed countries and LDCs. This view is held by those emphasising that it is behaviour that is the main determinant of people's exposure to risk factors, and of their relationship with health care system. However, those holding a different idea about the determinants of health also have a different perception about the potential of health education for resolving health problems. The issue gets more complex once the problematic nature of health is taken into account in order to define health education, and how it influences the socio-economic development of a country. Indeed, different ideas of what education and health are result in different notions of health education and health promotion.

Many definitions of health are available in the literature of the social and medical sciences: from quite complex and arid constructions to some others quite romantic and not very useful like that provided by Rene Dubos (1970):

> "...health is a modus vivendi enabling imperfect men to achieve a rewarding and not too painful existence while they cope with an imperfect world..." (p. 97).

Health could be an absence of disease, a state of complete well-being (physical, mental and social), a state of optimum capacity for effective performance of roles and tasks, an ability to adapt to changing circumstances, a commodity (which can be bought, sold, given and lost!), and so on, depending on the perspective of the author (Aggleton 1990). Lay conceptions of health seem to be strongly affected, at least in developed countries, by socio-economic status: in lower social classes people tend to consider health as absence of disease (what is called the negative sense), while people in higher social classes are more likely to perceive health as a positive condition, valuable in itself (d'Houtad and Field 1984). Sutherland's (1987) health definition is a good example of a health in a positive sense:

> "sometimes, when I feel well and physically at ease, I can become aware of that feeling expanding into a sensation of contentment, which expands in its turn into aesthetic and even spiritual perceptions of my existence, my surroundings and my relationships, with the result that I may in due course believe that I am in touch with the source of all being and so with the eternity...health of this sort,

> often also called well-being, is not divisible…" (p. 9).

Sutherland (1987) admits that this awareness occurs infrequently. This means that health is not a permanent condition but a subjective state of well-being that can be experienced by diabetic people, for instance, during the course of their disease. However, he does not explain what it is needed to achieve such an ethereal condition, very similar to those feelings allegedly experienced by addicts to some psychoactive drugs, and by Buddhist, Christian, or Hindu mystics. Health of this nature is certainly more likely to be experienced happen in communities whose basic needs are already met, but it is beyond reach for most of those who lack essential resources.

For Sigerist, a North American historian of medicine, health is a plan to be achieved during the whole of one's life. Despite the fact that his view of health is more than a mere absence of disease, it suggests a passive attitude wherein unresisting individuals are fully accountable for adapting to many circumstances, even to those coming from inequalities, a fate he calls 'life':

> "a healthy individual is a man who is well balanced bodily and mentally and well adjusted to his physical and social environment. He is in full control of his physical and mental faculties; can adapt to environmental changes, so long as they do not exceed normal limits; and contributes to the welfare of society according to his ability. Health is, therefore, not simply the absence of disease: it is something positive, a joyful attitude toward life and a cheerful acceptance of the responsibilities that life puts upon the individual" (Sigerist, cited in Terris 1992).

The Constitution of the WHO defines health as "...a state of complete physical, mental and social well-being, and not merely the absence of disease or infirmity..." (WHO 1946). Although WHO has been widely criticised for this idealistic view, its definition is helpful in underscoring the multidimensional nature of health. In 1986, the Ottawa Charter for Health Promotion, endorsed by the WHO, offered a complement to the earlier definition:

> "to reach a state of complete physical, mental and social well-being, an individual or group must be able to identify and to realise aspirations, to satisfy needs, and to change or cope with the environment. Health is, therefore seen as a resource for everyday life, not the object of living. Health is a positive concept

> emphasising social and personal resources, as well as physical capacities" (WHO 1986).

Downie et al (1990) disagree with this vision of health as an absolute concept, a rigid and complete state of well-being. In their opinion, health is a relative concept that lacks standards, it is a consequence of a balance between ill-health (disease, illness, deformity, injury, disability, handicaps) and positive health. Positive health encompasses

> "…true well-being (with its roots in empowerment, and of considerable value to the individual and the society) together with the related notion of fitness, and as having physical, social and mental ingredients…" (Downie et al. 1990) (p. 23).

Their notion of empowerment is "...the acquisition or development of lifeskills and autonomy...", in such a way that absence of disease does not necessarily mean a healthy condition and its appearance does not preclude it. This definition recognises health as a process, wherein people and communities occupy different stages over time, but all of them an improvement on the previous one.

In spite of the fact that all these definitions are quite illuminative, they do not reflect the idea of health operating at the present. In fact, within the kind of society we are living in now, health is presented by governments and bodies such as World Bank, as the ability to function and be productive in economic terms. This notion is closely linked to the idea of development as economic growth fostered by these bodies.

2.3 HEALTH AND DEVELOPMENT

Poverty, famine, disease, violence and war are situations that preclude the full development of human beings' potential. Policy makers regard these situations as consequences of insufficient development. However, some facts show that the notion of human development itself, and its relation with health and economic growth is another complex and contested issue:

- An increasing number of authors report the astonishing development achieved by AIDS patients and their families as the disease forces them to discuss openly about sex, life, and death (Rieder and Ruppelt 1989). Meanwhile a chapter of the World Bank

Development Report 1993 (World Bank 1993) is called 'AIDS: a threat to development'.

- Increased longevity has been found in certain areas of Central Asia and Ecuador, with particularly low income. In order to explain this situation some scientists argue for genetic factors, but almost everyone accepts the importance of behavioural and environmental factors (Perls 1995).
- In countries like Sri Lanka, China, Costa Rica, or in the Indian province of Kerala, for instance, health achievements are not related to predictions based on their per capita incomes (UNDP 1997).
- In United States, the most powerful economy amongst the developed countries, huge health budgets and technological development have not produced a proportional increase in health (Lamm 1996). Meanwhile an anti-depressive drug, fluoexetine (Prozac™), became the top selling drug in the pharmaceutical market of this country (Porter 1998) until the release of a drug to combat male impotence, sildenafil citrate (Viagra™).
- Scandinavian countries are considered developed: high income per capita, high quality of life and increasing longevity. They also have one of the highest suicide rates in the world (Retterstol 1992).

Thus, a very sophisticated theory of development is necessary in order to explain such contradictory facts. According to all the principal development theories, development is a concept denoting a process of change in a specific direction which is regarded as positive or highly valued (Fagerlind and Saha 1989). The content of the latter changes depending on the author's fundamental assumptions about nature of society and human beings. Yet it is well accepted by most of theorists that development means, at least, material welfare of the reference population. However, this uneasy consensus around what development is does not resolve the questions concerning its relationship to health and economic growth. Is it necessary to be healthy to achieve development? Is it necessary to be developed to achieve health? Is economic growth the only way available to increase life expectancy?

The most widely employed health indicator of material welfare is mortality, measured as life expectancy. With the rise of the germ theory in the late 1800s the importance of medical advances became the causal factor which explained the increase in life expectancy and in the improvement in levels of health. In the mid-1960s this idea was challenged by McKeown (1976), who, based on the analysis of mortality records of Wales and England, argued that the increase in life expectancy between circa 1850 and 1971 in these two countries was a result of improvements in nutrition. His work remains controversial (Mitchell 1992; Johansson 1994; Szreter 1994; Mackenbach 1996), and it is becoming clear that his thesis can only partially explain the mortality trends in Wales and England during the last century (Fogel 1997). However, McKeown's work has been very influential in dismissing the often exaggerated claims about the role of medical advances in the control of disease, well demonstrated in the case of infectious diseases such as TB (see second chapter, p. 92). McKeown's work has been also one of the main supports of modernisation theorists and bodies such as the World Bank who promote the idea that it is by increasing the wealth of a country through economic growth that higher levels of development can be achieved. However, research findings show that the relationship between health and development as economic growth is quite complex. Certainly, high per capita income is correlated with lower levels of mortality, but beyond US$5.000 the correlation is weak. Even, below this level of income the relationship is far from simple, as Birdsall (1992) found in her review of the link between development and health:

> "high per capita income is by no means a prerequisite to countries achieving low mortality rates and thus better levels of health. Prices and income are variables that might influence health but appear to explain little at the household level (p. 161) (...) Though some minimal level of income is almost surely a prerequisite to maintaining good health, that level is fairly low (...) Much improvement in health has occurred as a result of development in the broadest sense, not because of improvements in personal health services (p.162) (...) There has been some success in establishing that better health contributes to higher productivity at the individual level (...) Nutritional status of children affects school performance, supporting the evidence that in general better health does speed development" (p. 172).

Although this helps to clarify how health and development are related, the pursuit of economic growth persists as the main strategy for development, particularly under the hegemonic role played by the World Bank. Within this strategy health becomes as the minimum physical and psychic conditions required to be productive in economic terms and, as a result, health care resources are allocated specifically with that aim.

The Human Capital Theory is fundamental in this idea of development. This theory, which dates back to Adam Smith's work (Sweetland 1996; Sen 1997) posits that certain types of investment in people result in higher returns expressed in economic growth (Sweetland 1996). Investments of this nature include health care, nutrition, and education. However, it is mainly in the field of education where human capital theorists (mainly economists, some of them Nobel Prize winners) have focused their research. This interest in education investment is because its effects are not only positive in terms of economic growth but also in health, nutrition and population growth control (Caldwell 1993). Another benefit derived from education is the creation of an educated public able to participate in a democratic society (Carr 1991; Kelly 1995). However, this is a benefit that has been less appealing to human capital theorists until very recently.

This notion of development as economic growth promoted by the World Bank was challenged in the 1980s by the United Nations (UN), amongst others, mainly as a result of the consequences of the structural adjustment programmes applied by the Bank on those LDCs experiencing problems in paying external debt. In 1990 the United Nations Development Program (UNDP) launched its annual report on human development, which presented an alternative notion of development:

> "Human development is a process of enlarging people's choices (...) for people to lead a long and healthy life, to acquire knowledge and to have access to resources needed for a decent standard of living (...) human development has two sides: the formation of human capabilities—such as improved health, knowledge and skills-and the use people make of their acquired capabilities—for leisure, productive purposes or being active in cultural, social and political affairs (...) development must, therefore, be more than just the expansion of income and wealth. Its focus must be people" (UNDP 1997) (p. 10).

This report represented not only a direct attack on the World Bank's notion of development, but also a new approach to human capital theory as the driving force of development processes:

> "theories of human capital formation and human resource development view human beings primarily as means rather than as ends. They are concerned only with the supply side—with human beings as instruments for furthering commodity production. True, there is a connection, for human beings are the

> active agents of all production. But human beings are more than capital goods for commodity production. They are also the ultimate ends and beneficiaries of this process. Thus, the concept of human capital formation (...) captures only one side of human development, not its whole" (UNDP 1997) (p. 10).

This idea of development promoted by the UNDP is highly influenced by the work of the economist and philosopher Amartya Sen (1985a; Sen 1985b). He presents the idea of accumulation of 'human capital' and the expansion of 'human capability' as two different but complementary and necessary perspectives for human development, but one where the former is subordinated to the latter since human beings cannot be seen as means but only ends of the whole process of development (Sen 1997). Expansion of capabilities deals with all those abilities helping human beings to "lead lives they have reason to value and to enhance the substantive choices they have" (Sen 1997). Education, for example, argues Sen, expands human capabilities because learning to read, communicate and argue, help people to choose the lives they want to live. In his theory of development the instrumental role of 'accumulation of human capital' is the production of commodities, while the instrumental role of 'capabilities expansion' is its contribution to social change (reduction of gender inequality and increase of political participation, for example), people's well-being and freedom, and indirect influence on economic production (Sen 1997).

Rebuttals to McKeown's work (Johansson 1994), particularly those which demonstrate that economic growth was not the single cause of longer life expectancy, for the creation of public health infrastructure played a fundamental role in Wales and England (Szreter 1997), contribute to reinforce the idea promoted by the UNDP that economic growth is important but not essential for health and for human development. Even at the microlevel, as Birdsall's (1992) review suggests, household income explains little about access to goods and services improving health.

Research carried out during the last two decades has dealt a final blow to the argument that life expectancy is determined mainly by economic growth, and that the best level of health is the mere product of combining certain minima of good food, good shelter, sanitation, basic education, and basic medical care. Firstly, by analysing patterns of mortality and income between and within countries several authors have demonstrated that beyond a certain level of Gross National Product (GNP) per capita (around US$5,000) (World Bank 1993) the correlation between income and life expectancy becomes poor, and what becomes more influential is the level of income inequalities (Davey-Smith 1996; Kennedy et al. 1996; Wilkinson 1996a; Wilkinson 1996b).

Secondly, evidence from analysing mortality and the type of social relationships demonstrated the significance of social support (a person's access to somebody from whom she or he can find help in emotional, material and information terms) and social support networks (groups of persons/institutions providing social support to someone) as predictors of mortality and, to some extent, morbidity (Cassel 1976; Berkman and Syme 1979; Seeman 1996).

Both findings, income inequalities and levels of social support, point to social cohesion (a result of the type of social ties maintained within a community), as one of the most important predictors of mortality. In fact, it seems this could explain the relationship between GNP and life expectancy within and between developed countries, and between LDCs. The typical examples in LDCs are Costa Rica (life expectancy 76 years, GNP per capita US$1,850) and Sri Lanka (life expectancy 71 years, GNP per capita US$500) (Wilkinson 1996b).

This social cohesion occurs in societies with high levels of literacy, gender equality, political participation and income equality, quite independently of the GNP per capita. Most of these elements are relevant to the Social Capital Theory described in the developed countries (Coleman 1988; Putnam et al. 1993; Leonardi 1995). Social capital is the capability of people to work as a team for common goals, and is determined mainly by the level of trust within a society (Coleman 1988; Fukuyama 1995). This capacity, unlike human capital, is created and reproduced by cultural mechanisms such as religion and traditions, for example (Fukuyama 1995). It has three interrelated components, namely, norms and values, social networks, and its outputs (facilities, services, goods) which, according to the way in which their interrelations are interpreted, can result in different conceptual meanings for different purposes (Newton 1997). One of these conceptual interpretations of social capital is Social Capital Theory.

Social Capital Theory posits that prosperity and economic progress develop more easily in civic societies, which are those that value solidarity, political participation, and trust between their members (Putnam 1993). Not surprisingly, combining the creation of social capital with the creation of human capital is being proposed as the strategy to promote sustainable economic growth (Coleman 1988; Leonardi 1995). As Newton (1997) points out, social capital can be defined and worked out in different ways depending on the agenda of its promoter. For example, certain social values of the social capital construct such as solidarity, which might have been appreciated by members of a community because of its intrinsic value, are being regulated or transformed for other purposes, such as the creation of a market economy: "Women in Kyrgyz Republic report that selling home-grown produce is stressful: in their culture a household with extra food always gave—not sold—food to neighbours in need" (World Bank 1996) (p. 72).

Creation of social capital and accumulation of human capital became fundamental components of the new discourse of development promoted in the 1990s by the World Bank. Within this discourse democracy and political participation are also very important (White 1995). Hyden (1997) argues that this new discourse of development affirms that social and human capital operating within a democracy could solve some of the main problems identified during the last two decades by the modernisation theorists of development, namely, top-down approaches and lack of social organisation.

One of the issues gaining momentum within this new discourse of development is the role of income inequalities in economic growth. Indeed, the idea of reduction of economic inequalities is now gaining wide acceptance as a pre-condition for countries to achieve sustainable economic growth (Persson and Tabellini 1994; Birdsall and Londoño 1997). It is argued by some authors working for the World Bank that reduction of income inequalities is one of the problems that benefit from the promotion of democracy and political participation (Birdsall and Londoño 1997). However, for such political participation to develop it is necessary to provide people with education appropriate to that aim. This is not the case with the educational policies and strategies currently promoted by the World Bank (Burnett and Patrinos 1996) which are still focused almost exclusively in the formation of human capital (Samoff 1996), a fact demonstrating one of the inconsistencies in the current Bank's discourse about development.

Democracy and political participation could have very positive effects on the social development and on the health achievements of a society. Understanding health as the minimum physical and mental conditions required to develop enriching social ties, within which the production of services and material goods is a collateral consequence, helps to see material welfare not as an end in itself but as an additional means to achieve health. In that sense, the type of social ties within a society becomes very important in order to understand how health develops. Health becomes not only a cause of material welfare but also a result of social development. In this context health education has a very important function. In fact, demand for medical and preventive services, understanding of medical information, acquisition of improved lifestyles, personal hygiene, access to social support networks and, what is more important, people's participation in political decisions affecting their health are activities which require the acquisition of knowledge and the learning of skills. In this respect, education and health education could be powerful triggers to development.

2.4 HEALTH EDUCATION: MANIPULATING INFORMATION WITH 'GOOD' INTENTIONS

The importance of health education in public health was acknowledged many years ago. Sigerist (cited in Terris 1992), describing the main elements to be included in a national health programme, considered education for everybody, including health education of primary importance. Thereafter, he considered working and living conditions, rest, recreation and, lastly, medical care. The different roles that health education has played in the public health arena reflect the different notions held by public health practitioners.

2.4.1 DEFINITION AND AIMS OF HEALTH EDUCATION

Downie (1990) provides a comprehensive definition of health education based on the writings of Peters (1970) on ethics and education. Downie (1990) describes five characteristics which differentiate health education from training, instruction and indoctrination. A genuine health education activity must be, he argues, "valuable for its own sake" (that is not the case for training, which only looks at practical uses of knowledge acquired), it must have wide cognitive perspectives rather than just provide 'tips' as instruction does; it must promote a sustainable interest for the health subject it addresses; it must induce a transformation in the way that people look at health and its determinants by the provision of critical thought; and, finally, it must rely on 'person-respecting methods' rather than relying on 'fear, threats, indoctrination or hidden persuasion' as training or instruction does. A definition of health education taking these elements into account would be:

> "Health education is an activity aimed at preventing ill-health and furthering positive health through creating an understanding of the human body and its working, through the provision of information about health care services and access to them, and through creating understanding of national or local policies and environmental processes which may be detrimental to health" (Downie 1990) (p. 21).

The essential aim underlying any health education activity is the promotion of autonomy. Downie (1990) describes autonomy as a generic value consisting of four overlapping aspects—all of them relevant to health education—that are acceptable to any human being who is going to develop a flourishing life. These aspects are self-determination, self-government, sense of responsibility and self-development. Self-determination refers to the "ability to choose for oneself (...) to formulate and carry out one's own plans or policies"; self-governing refers to the ability to conduct one's own life with the minimum of economic and psychological pressures but in line with the values applying to a society as a whole; sense of responsibility refers to the ability to take into consideration the implications that one's own behaviour entails for oneself and the other; self-development or self-realisation refers to the ability of realising and developing the capacities that help one to take control of one's own life (Downie et al. 1990).

While some authors stress the self-development or the self-determination aspects of autonomy other authors such as French (1990), for example, prefer to emphasise the cognitive aspects of health education:

> "Health education is not about behavioural change and it is not about overt

> political action to affect the determinants of health (...) it is an essentially practical activity rooted within educational practice (...) health education is or should be a systematic process drawing on all forms of relevant knowledge."

This view produces the false assumption that education aims only to provide a basic understanding of the world without acknowledging that education is a means for a non-value-free end. Relying just on the provision of lifeskills, as do the advocators of health education for lifestyle change, very easily becomes into an individualistic approach that promotes 'patient blaming': by assuming that these lifeskills place individuals in full control of their health determinants means that only they can be blamed for their health problems (Crawford 1977). At the other extreme are those authors who stress the self-determination and self-governing aspects of autonomy (Rodmell and Watt 1986). They consider health education as an empowerment process to address social and political forces determining health, yet they fail in acknowledging the importance of behavioural factors affecting health which are not always determined by structural forces.

Sutherland (1987) offers a concept of health education which encompasses structure and agency as determinants of health, and argues in favour of a sort of health education that promotes personal autonomy. In his view education is a process based on a personal interaction between teacher and pupil:

> "education could not simply be the promotion of an idea or the imparting of information (p. 6) (...) For there, in that process, education reaches towards aspirations like understanding the individual nature of human existence and its accompanying adventure turning people into persons (...) enabling self-possession, self-determination and freedom with dependence (therefore) a health education which rests only on limited goals as individual behaviour change and its environs is essentially interventionist and promotional in character" (p. 10).

In spite of the fact that this definition acknowledges persons as subjects rather than objects of health education, it fails to recognise that these concepts are utopian for many individuals and communities at early stages of autonomy and social development, where a persuasive or interventionist character in health education may still be essential if the poorest are to survive. Autonomy is a matter of degrees and, in some instances, many people may not have achieved sufficient competence to choose between different options. Choosing the most appropriate strategy for promoting autonomy through health education is certainly a highly contentious issue.

2.4.2 THE STRATEGIES OF HEALTH EDUCATION

Choosing between basic information, persuasion or a discreet manipulation in order to achieve behaviour change is what really concerns the typical health educator in developed countries and LDCs countries. I will draw on the issues surrounding vaccination as an example to explore the common views held by health educators about the different strategies of health education.

Vaccination against some diseases provides great benefit to the community in terms of decreasing mortality and morbidity. However, as with many medical interventions, it entails a risk, even of death, to the individual. It may be necessary therefore to ask for consent before vaccination is carried out. One may think of three alternative approaches for dealing with the educational issues arising from a community's vaccination programme. First, health care workers (HCWs) can be limited to providing all the information available, including mortality risks, without giving any opinion for or against the vaccination. Secondly, they can provide all the information available, including mortality risks, but arguing for the vaccination. Thirdly, they can limit themselves just to providing all the information available, without including any information related to death risk, but arguing strongly for the vaccination.

The first approach, neutral provision of information, is defended by those who define health education as the provision of information in order to help people to make free healthy choices. Yet, as Draper (cited in Naidoo 1986) argues, when

> "expensive psychological and social science skills are currently devoted to promoting or maintaining personal lifestyles which are unhealthy, it is unrealistic to talk of free choice" (p. 21).

The second approach, full information with persuasion, is widely and tacitly accepted by most health educators. For them health education is mainly persuasion: "the essence of persuasion is that it influences a person through the merit of the reasons put forward" (Faden 1987). The role of persuasion in health education is problematic for some authors such as Rose (1992):

> "The aims of health education are to inform, to challenge, to encourage independent judgement, and (arguably) to persuade (p. 116) (for) in dealing with individual patients, persuasion should probably have no part (…) in an ideal world the same might apply to health education in populations..." (p. 118).

However, in the real world, as Rose (1992) argues, persuasion can help to balance the various forces shaping an individual's choice:

> "the difficulty is the massive amount of persuasion that comes from the other side ('Drink more vodka!' 'Drive bigger and faster cars!'). Maybe freedom suffers less if it is attacked from both sides" (p. 118).

The third approach, censored information and persuasion, is considered a manipulation by some authors. It is rare for health educators to openly accept that manipulation is a strategy commonly used in health education. However, this is reflected in the jargon they use: 'intervention', 'objects', 'subjects', 'targets' and 'treatments', for example (Flay 1986; Kotler and Roberto 1989; Nutbeam et al. 1990). For some authors, manipulation is

> "a deliberate act that successfully influences a person(s) by non-persuasively altering the person's understanding of the situation, modifying perceptions of the available options (…) lying, withholding information and misleading exaggeration" (Faden 1987).

For some others manipulation is not deliberate, it is just unavoidable in any educational activity (Salmon 1989; Zimbardo and Leippe 1991; Witte 1994), even in those activities using persuasion, for it still reduces the autonomy of the individual to make choices:

> "to manipulate or persuade means to influence people into doing what we want them to do through direct (...) or indirect (...) strategies" (Witte 1994).

An extreme form of manipulation is propaganda:

> "a form of communication in which a communicator manipulates others, often without their being aware of the manipulative effort, for the source's own benefit rather than for the benefit of the receiver" (Jowett and O'Donnell cited in Salmon 1989) (p. 34).

Witte (1994) distinguishes three ways for health education to manipulate beliefs, perceptions and behaviours, namely: regulating the amount of information, framing the messages to produce the intended outcomes, and regulating the order of the messages. He asserts that manipulation operates by regulating the amount of information given to the audience

> "even if health communicators do not intend to influence or manipulate perceptions, they do so by virtue of presenting some facts and excluding others" (Witte 1994).

For Salmon (1989) the manipulative nature of a health education campaign is not only a matter of format of the messages or the amount of information given, but it also includes its conceptual basis:

> "The definition of social phenomena as problems, the locus of change proposed, and the selection of facts to be presented all involved the imposition of value judgements and attempts to influence individuals (...) the decision regarding which facts are to be cited necessarily stems from an organisation's vested interest in the situation" (p. 34).

He follows by arguing that this manipulative nature of health education is unavoidable since

> "campaigns are not conducted in a social vacuum; they represent one mechanism of change in direct competition with others" (Salmon, 1989) (p. 44).

Most health care decisions require dealing with complexities that are not easy to communicate to people within the constraints of the health care services (in terms of time and physical resources), or the pressures determined by circumstances such as epidemics or catastrophes. Even those authors working out a broader definition of health education, such as Green and Kreuter (1991), do not escape the temptation of overtly considering manipulation in health education:

> "Health education is any combination of learning experiences designed to facilitate voluntary actions conducive to health (...) but when the goals of the programme are urgent enough or important enough to the community some of the non educational features of health promotion are justified and acceptable " (pp. 17-20).

Yet, who defines what goals are urgent or important enough? What are those non-educational features of health promotion and who choose them? In fact, autonomy can be shaped through persuasive action. For example, the self-realisation aspect of autonomy can be triggered through the provision of lifeskills—this is currently the most common and successful aim of health education and health promotion. Persuasive action can raise interest in the individual and the people to acquire lifeskills.

However, lifeskills are not deployed in a social vacuum either. Individuals in the process of becoming more autonomous are members of societies, and it is in these societies where their respective degree of autonomy is deployed. As a result the social context cannot be neglected when health education is provided, and questions such as 'whose interests are served by the new lifeskills acquired?' must be addressed. In this social context the role of persuasion becomes more problematic when dealing with the 'self-determination', 'self-governing' and 'sense of responsibility' aspects of autonomy presented earlier in this chapter. The content of any health education activity, particularly when it aims at promoting autonomy, has important implications not only in terms of changing individual behaviours but also in raising awareness about the issues at stake in health and social policies, and about the determinants of health disease and well-being.

Indeed, raising awareness about these issues can turn out to be dangerous for social cohesion and the continuance of the current model of society, once people deploy their autonomy beyond the sphere of health. In short, autonomy and empowerment of individuals can result in chaos rather than order. How is it possible, and what is needed, then, for health education to achieve its goal of greater autonomy and empowerment if manipulation and persuasion seem unavoidable? Witte (1994) and Salmon (1989) ask for health educators to be more explicit about the values underpinning their work. For that aim, Witte (1994) suggests a basic set of standards for ethically conducting health education, within which community participation is fundamental. His suggestion could be more fully developed taking into account the proposal of Pratkanis for the construction of democratic debates (Pratkanis and Turner 1996).

Pratkanis (1996) proposes an alternative form of persuasion, different from propaganda, that might be useful for resolving the problems produced by the manipulative nature of health education. In the role that persuasion might play in the construction of a democratic society, Pratkanis (1996) makes an important distinction between what he calls 'deliberative persuasion' and 'propaganda'. Deliberative persuasion refers to that which encourages thought and reflection while propaganda refers to a extreme form of manipulation. Table 2.1 (unmodified from his paper) summarises the differences between both approaches.

If we are to accept that the only place for persuasion in health education—except, perhaps, in the aftermath of disasters where the capacity for decision-making among those affected can be severely impaired—is precisely in the sense of a 'deliberative persuasion' we must realise that this can only happen in a knowledgeable public, one that has mastered the concepts required for developing the discussions inherent in a democracy. This leads us to the notion of public knowledge:

> "whatever people need to know in order to exercise their rights fully and fulfil their responsibilities as citizens within a democratic polity (p. 5) (...) it subsumes both historical knowledge of collective cultural traditions and the capacity to justify these traditions rationally, providing the very foundations of democratic empowerment and citizenship (...) (Public knowledge) enables individuals to act into and upon the world..." (Kelly 1995) (pp. 19-20).

This could be seen as a chicken-or-egg puzzle—for health education to achieve its goals through 'deliberative persuasion' it requires a knowledgeable public, which is in itself one of the goals of health education. Yet, it might be just a sectional view of a process of growth towards higher degrees of autonomy necessary for a flourishing life of individuals and communities. This process of progressive growth in autonomy at individual and community level is what the health promotion discourse calls empowerment.

Table 2.1 Characteristics of deliberative persuasion and propaganda

Deliberative	Propaganda
1. Co-participation of leader in discovering solutions	1. Solution predetermined by a ruling elite
2. Authority used to stimulate discussion	2. Authority used to induce acceptance of predetermined solution
3. A system of checks and balances placed on power	3. Leader behaviour is not constrained by rules or other group members
4. Reciprocity of influence between leaders and members; multiple independent sources of information	4. Unidirectional influence from elites; single source or colluding sources of information
5. Decentralized communication structures	5. Centralized communication structures
6. Flexible group boundaries and roles that allow for additional resources to be obtained to solve problems	6. Rigid group boundaries and social roles to limit discussion and options
7. Minority opinion is encouraged as a means of obtaining a better decision; feedback encouraged	7. Minority opinion is censored via neglect; ridicule, social pressure, or persecution; feedback discouraged
8. Agenda, tasks, objectives, and work tasks set through group discussion	8. Agenda, tasks, objectives, and work tasks set through by elites
9. Rewards used to move group towards objectives	9. Rewards used to maintain group structure and leader's status and power
10. Persuasion based on debate, discussion, and a careful consideration of options; persuasion as a discovery	10. Persuasion based on simple images, prejudices, and the playing on emotions; persuasion as communication

Source: (Pratkanis and Turner 1996)

In the creation of public knowledge for health education to achieve its goals—individual and community autonomy to deal with issues determining health—the formal education system is fundamental. It may be wondered, then, to what extent schooling can provide the students with the basics of 'public knowledge' needed for developing the aims of health education. MacIntyre (1987) is not very optimistic in this respect. He argues that the two basic aims of education—"to shape the young person so that he or she may fit into some social role and function that requires recruits" and "teaching young persons how to think for themselves, how to acquire independence of mind"—are "under the conditions of Western modernity, mutually incompatible" (MacIntyre 1987) (p. 16). The reason he puts forward for such an argument is that both aims

> "can be combined only if the kind of social roles and occupation for which a given education system is training the young are such that their exercise requires, or at least is compatible with, the possession of a general culture, mastery of which will enable each young person to think for him or herself" (MacIntyre 1987) (p.17).

The specialisation of social and economic roles makes that thinking be "the occupational responsibility of those who discharge certain social roles: the professional scientist, for example", in such a way that an educated public is no longer possible. MacIntyre (1987) critiques too the specialisation which has occurred in the field of knowledge "which makes the specialised content of each discipline a subject-matter for enquiry, but excludes from any discipline the subject-matter of the disciplines to each other" (p. 18). The implications of this problem, too much specialisation in some disciplines, has resulted in calls for curriculum reform—a risk move against which MacIntyre (1987) and Bloom (1995) warn—in areas such as epidemiology, for example (Weed 1995).

The critique of MacIntyre is reasonable and illuminating but extremely pessimistic, and fails to suggest an alternative. The fact that the ideal situation for successful health education, namely, an educated public, is hardly attainable through schooling does not mean at all that the aims of health education are hopeless. Certainly, if the notion of health education I am proposing aims to put people in charge of the determinants of health, we must be realistic in recognising that some of these determinants —such as the economic forces at transnational level—are difficult to shape. However, at local level there are still many forces that can be shaped through the action of an educated public.

The apparently insurmountable difficulties in creating public knowledge and an educated public raise serious doubts about the most praised 'bottom-up' approach, i.e. community participation in making decisions about those forces affecting their health. It may be through the creation and support of people in small communities who can foster non-formal educational processes, that people can acquire the public knowledge necessary for engaging in the "deliberative persuasion" of Pratkanis or the 'critical consciousness raising' dialogue proposed by Freire (1970).

Many experiences in small communities in Latin America, for example, suggest that developing an educated public can be feasible under certain conditions (Boff 1984). One of them is the leadership of an elite—such as that exerted by Roman Catholic priests espousing Liberation Theology—genuinely committed to the problems of oppressed individuals and communities (Gutierrez 1988). However, it is not clear thus far how such projects can avoid resulting in social chaos as was the case with the Jesuit project of a university for social change in El Salvador (Beirne, 1996). Actually, chaos may be seen as a stage in the development of higher order structures (Prigogine and Stengers 1984), but much theoretical construction is still needed in social science before the principles of chaos theory can help us to understand complex social processes.

Thus far, we can conclude for the sake of this thesis, that health education entails the acquisition of increasing levels of knowledge, understanding and autonomy by individuals and communities to deal with all the factors determining health. Health education includes more than changing risky behaviours, applying medical preventive measures, and adhering to preventive or curative medical treatments. Health education also aims to provide people with the understanding of the determinants of health and their mutual links and of the ways to address such determinants. This broad scope of health education explains that it can be used with too many different purposes, and that the worth of these purposes be debatable. Indeed, as Gastaldo (1997) argues

> "health education covers a large range of practices, from 'good' to 'bad', from 'healthy' to 'unhealthy', from empowerment to subjugation, and from liberation to docilisation" (p. 129).

The creation of an educated public certainly empowers people to make informed decisions, by promoting autonomy and self-government, and by enabling participation in political debates.

The methodologies for achieving such goals must be based, ideally, on concepts such as the "deliberative persuasion", which requires an educated public and a socio-political structure willing to accept the consequences of empowering the less powerful.

Whatever the aims and the strategy of health education there are two basic modes of action: through interpersonal and through mass media communications (McQuaid 1994). Interpersonal communication encompasses any type of communication entailing a direct relationship between sender and receptor. The settings for such endeavours are diverse: the health care centre, clinics of medical specialities, the community centre, and the institutions of formal and informal education. Since developing health education in health care centres is proving quite difficult, the school—where a sort of public knowledge has been traditionally provided—is becoming one of the most important settings for health education in both developed countries and LDCs (Tones 1996).

Several initiatives undertaken in primary and secondary schools in LDCs, such as 'Child-to-Child', are proving useful in the provision of preventive medical services, the acquisition of healthy behaviours, and in channelling the community towards medical facilities (Dhillon and Philip 1994). One of these successful initiatives, called 'Vigias de la Salud' (health scouts), began in Colombia in the late 1980s (Dhillon and Philip 1994). Students in the last two years of secondary school received education and training in the five major causes of child mortality. In fact, the main objective of this programme was to reduce child mortality through the training of mothers by 'health scouts'. They received training in basic treatments for illnesses such as diarrhoea and respiratory infectious disease, and information about immunisations. Unfortunately the education received by the students was closer to 'training in selective primary health care' than health education. In fact, it was part of the selective primary health care strategy (Walsh and Warren 1979), a modified and compromising version of the original primary health care strategy Health for All proposed by WHO.

Mass media is the second strategy for carrying out health education action and creating public knowledge. Radio, television and newspapers are available world-wide, in such a way that the settings for health education are everywhere. The huge technical developments in mass media communications, and pressures on health educators and promoters to produce highly cost-effective results in the short term, could explain the appearance of a new discipline called 'communication for health' or 'public health communication' (Maibach and Holtgrave 1995). In fact most of the examples of empowering health education activities carried out in LDCs—summarised in a recent publication by the WHO (Dhillon and Philip 1994)—are based on the principles and techniques of 'communication for health'. This is defined as

> "the use of communication techniques and technologies to (positively) influence individuals, populations, and organisations for the purpose of promoting conditions conducive to human and environmental health" (Maibach 1995).

Thus far five different approaches have been identified in this field: social marketing, risk communication, behavioural decision theory, entertainment education, media advocacy and interactive decision support systems. Mass media is the communication technique most widely used in public health communication nowadays, and social marketing its most developed approach.

2.4.3 HEALTH EDUCATION AND MASS MEDIA

The consolidation of mass media as the most powerful instrument for communication, and its cost-effectiveness, are the main reasons explaining the widespread use of this instrument for health education and communication for health. Exposure to mass media communications emerged as a strong correlate of contraceptive use and of vaccination campaign coverage in LDCs (Bertrand et al. 1982; Pabon et al. 1986). Some other findings underscore the importance of communications in promoting health (Farquhar 1977; Maccoby et al. 1977; McAlister et al. 1982; Flay 1987). Hence, public service announcement campaigns are a common response to health and social problems.

Social advocacy and personal education are the two main roles of mass media in health promotion (Naidoo and Wills 1994; Cartford 1995). Social advocacy promotes organisational and environmental change by raising public and political awareness; creating a climate of opinion for action at individual and environmental levels; presenting a corporate image/programme identity to win support; providing information and advice on healthy living; and rewarding action (Cartford 1995). Social advocacy is considered by Rose (1992) as the main objective of health education:

> "Anything which stimulates more public information and debate on health issues is good, not because it may just lead to healthier choices by the individuals but also because it earns a higher place for health issues on the political agenda. In the long run this is probably the most important achievement of health education" (pp. 123-4).

Personal education looks at the facilitation of change in individual and group behaviour change by presenting examples and role models, introducing skills, encouraging self-confidence, promoting specific 'products' (events, opportunities), offering triggers and incentives for action and participation, and encouraging maintenance of behaviour change (Cartford 1995). It is well accepted that media usage in health promotion is more effective if it is part of an integrated campaign including other elements such as one-to-one advice; and also when information is presented in an emotional context, and seen as relevant by the audience (Naidoo 1994).

A pessimistic view of the power of mass media in health promotion is presented by Sutherland (1987):

> "Health promotion advertisements can create awareness and so raise issues for discussion among individuals but rarely affect attitudes and behaviour in any predictable way (...) in view of its ephemeral nature whatever medium is adopted, its use has to be sustained over time to have any effect at all (...) and since only big expenditures can produce small results (...) the costs of mass media methods in health promotion should not fall upon shoulders which are not strong enough to bear them" (p. 18).

There are two reasons suggesting that this is a realistic but partial consideration of the barriers to using mass media in health education and the effectiveness of health education media programmes. First, the costs involved in longer term delivery of messages make the mass media a source accessible only to powerful organisations. Since in most countries the government has been fully in charge of health provision until recent times, the decision to use mass media for addressing certain health problems has been relatively less constrained by economic reasons. High costs of mass media production explain that the ownership of the means for delivering messages resides in the government or powerful economic groups. Both are in control of whatever is going to be diffused through their channels. This makes it even more difficult to develop

BIBL. LONDIN. UNIV.

health education messages which challenge the interests of the mass media owners. In Colombia—as in several Latin American countries—this situation is exacerbated by the increasing ownership of mass media by the most powerful economic groups (Mahan 1995). Most of the Colombian radio stations and more than 90% of the radio listening audience belong to RCN and Caracol — the two biggest radio network stations—owned by two of the three most powerful economic groups. These networks are financed by advertising paid by companies belonging to the same holdings which own the networks. It is no surprise, then, that Herran (1991) found that journalists consider the advertisers as the main factor influencing self-censorship.

Secondly, successful results have been achieved in both developed countries and LDCs in occasional and short term endeavours such as immunisation campaigns (Pabon et al. 1986), or HIV testing (Jacob et al. 1989). That is not the case when the campaign is tackling lifestyles such as smoking or diet, where long term activities might be required. Several experiences show that the success of health education through mass media is mainly determined by the same factors working in any commercial advertisement. Social marketing—a multidisciplinary endeavour based on the principles of commercial marketing—is the strategy used by most of the successful projects in health education through the mass media.

Social marketing

Social marketing is a relatively new discipline, born out of the commercial marketing field. The purposes of social and commercial marketing are quite different but they share the same theoretical background and the same techniques. The title of a frequently quoted paper summarises the different realms of social marketing: "Marketing communications in non-business situations or Why it's so hard to sell brotherhood like soap" (Rothschild 1979). The term 'social marketing' was coined in 1971 by Kotler and Zaltman, well known gurus in the commercial marketing field, and henceforth Kotler has been one of its main leaders and promoters (Kotler 1982; Kotler and Roberto 1989). He defines social marketing as

> "the design, implementation and control of programmes seeking to increase the acceptability of a social idea or practice in a target group(s)" (Kotler 1982) (p. 5).

Several health education and health promotion activities and projects were and are being implemented using this approach (HealthCom Project 1985; Clift 1990; Graeff et al. 1993; McDivitt et al. 1993).

Commercial marketing is based on consumer behaviour theory. This theory explains why and how people take decisions regarding daily life activities such as buying, voting, tasting, or choosing a school for children, for example. It is mainly informed by disciplines such as anthropology, economics, social psychology and psychology. The core of consumer behaviour theory is inspired in social exchange theory. This theory claims that

> "all action represents a search for pleasure and/or a reduction of pain. Actions which succeed in gaining such ends will be maintained, and those which fail will be abandoned. In order to obtain rewards and reduce punishment in the social sphere, the individual must perform various behaviours. If others find these behaviours rewarding, they will furnish behavioural outcomes in return which may of value to the individual. Thus, social life is constituted by a series of transactions in which rewards and costs (in the form of behaviour) are being provided to others in exchange for behaviours that may be 'consumed' by self" (Gergen et al. 1980) (p. 127).

In consumer behaviour theory the rewards are goods, services or ideas. Cost or price is time, money, effort, and also certain goods, or services. Marketing research seeks to identify characteristics of consumers. Once the characteristics are identified it is possible to classify or segment the group of potential consumers of the product, service or idea. Other objects of marketing research are the price, channel and communication. These elements of the marketing process are described in the textbooks as the marketing mix. It is composed of four elements: product, price, place and promotion. Product can be any object of a transaction. Price deals with every social and economic effort facing the consumer to acquire the product. Place refers to the product's distribution strategies. Promotion refers to the different ways used in order to communicate the messages to the target audience.

Yet social marketing can not operate successfully without theories explaining and predicting how health behaviour changes, and is affected by modifications in the marketing mix. Dozens of health behaviour change theories have been developed during the last 40 years (Glanz et al. 1990). Two of the most influential of these theories are the Health Belief Model and the Social Learning Theory.

Health Belief Model

This model for explaining health behaviour was developed by Rosenstock (1966). It is one of the theories that best explains client behaviour in the context of health seeking behaviour (Berkanovic and Aaronson 1986). The most important indicator of success of the model is the number of preventive actions undertaken by the group target (Rosenstock 1990). The model affirms that, with no barriers to taking action, an individual will undertake an act if she or he believes:

- That the condition is serious.
- That she or he is susceptible to a given condition.
- That the proposed action is beneficial.
- That these benefits outweigh the costs.

This theory has been widely applied in health education programmes, particularly in those aimed at increasing demand for screening tests. In fact, its origin dates back to the late 1950s, when strategies were devised for motivating people's compliance with X-ray screening for TB diagnosis (Rosenstock 1990). However, health behaviour is quite complex and, even from a mere psychological point of view, the cognitive aspects of this model can not take account of all the factors impinging on lifestyles, for example. A modification to the Model was made by adding the concept of self-efficacy, defined as "the conviction that one can successfully execute the behaviour required to produce the outcomes" (Bandura 1977) (p. 79). This modification helped to broaden the scope and the explanatory power of the Model.

Social Learning Theory

When the health behaviour in question clearly involves not only cognitive aspects but also the influence of environmental factors, the Social Learning Theory has a better explanatory and predictor power than the Health Belief Model. This theory, developed by Bandura (1977), underscores the role of skills to undertake certain behaviour and self-efficacy as crucial factors in the decision-making process. In fact, developing appropriate skills enhance an individual's self-efficacy. Two other key constructs in this theory are expectations and observational learning. Expectations refers to the "anticipatory outcomes of a behaviour" and observational learning refers to the "behavioral acquisition that occurs by watching the actions and outcomes of others' behavior" (Perry et al. 1990) (p. 166). Both concepts assert that an individual's behaviour is influenced by the behaviours of others, in such a way that imitation is a paramount element in daily life (Perry, 1990). It follows from these constructs that when credible actors model the positive outcomes expected from the behaviour being promoted, it will be easier for the audience to accept and to adopt them (Perry, 1990).

Most of current health education practice is based on psychological models of health behaviour. Although these are helpful in explaining practices dealing with health at the individual's level, it is this individualistic focus that renders these models less useful understanding health behaviour at the community level. If social ties and social cohesion are strong determinants of health, as already discussed, these models can only provide a somewhat biased picture of the processes determining health behaviour. In fact, two theoretical biases—neglecting the contribution of the social structure in the creation and maintenance of beliefs and values about health, and the ignorance of how cultural processes operate in the transmission of knowledge—are some of the most fundamental critiques of these models (Bunton et al. 1991; Bennett et al. 1995). These flaws explain, to a great extent, why these models are used mainly in sophisticated social engineering programmes, where the manipulative nature of health education is notorious. In this respect the increasing interest in the field for the setting up of a basis ethics of health education (Doxiadis 1990; Gillon 1990; Witte 1994; Duncan and Cribb 1996; Glanz et al. 1996) could contribute to control of the abuses of human dignity that social engineers perpetrate in the name of public interest (Salmon 1989).

2.5 HEALTH PROMOTION

Health education, either as a process for voluntarily increasing the level of autonomy, or a manipulative process for modifying health behaviour, takes place in the context set by affective, economic and political relationships. Thus, any health behaviour change promoted through educational strategies has to take account of the nature of social relationships within that community. Health promotion is what integrates health education and the social context within which the behaviour occurs.

Health promotion was a term used many years ago by public health leaders when referring to activities aimed at generating well-being and improving the quality of life through disease control. In 1920, for example, Winslow (cited in Green and Kreuter 1991), defined 'promoting health' as

> "(an) organised community effort for the (...) education of the individual in personal health and the development of social machinery to assure everyone a standard of living adequate for the maintenance or improvement of health" (p. 5)

In 1941, Sigerist (cited in Terris 1992) defined health promotion in terms of material welfare, and stressed the importance of intersectoral collaboration and prevention of illness:

> "...Health is promoted by providing a decent standard of living, good labour conditions, education, physical culture, means of recreation. The co-ordinated efforts of large groups are needed to this end, of the statesman, labour, industry, of the educator and the physician (...) the promotion of the health obviously tends to prevent illness, yet effective prevention calls for special protective measures...the classical tasks of the public health services..."

Both definitions stress clearly that health promotion implies activities at individual and social level that includes, at least, education and prevention of disease. In 1974, Marc Lalonde, the then Canadian Minister of National Health and Welfare, produced "A new perspective on the health of Canadians", a document that marked the 'rebirth' of health promotion (Lalonde 1974). The Lalonde report presents health as a result of the interaction of four components: human biology, environment, lifestyles and health care organisation. Certainly medical services access was not considered the main determinant of health achievements, instead the report suggested five strategies within which health promotion was a preventive strategy aimed only at changing lifestyles.

In 1977, the Alma Ata Declaration was an additional step forward in health promotion (WHO 1978). The Declaration states clearly, for the first time, that health is a right and, therefore, a political issue: communities and government, at local and central level, should facilitate the means for achieving health. Communities are no longer the object of governmental action but subjects of their own development (WHO 1978). Yet the most important impetus in health promotion is the framework provided in the 1st International Conference on Health Promotion, held in Ottawa in 1986 (WHO 1986).

2.5.1 THE OTTAWA CHARTER FOR HEALTH PROMOTION

After a quite individualistic definition of health in its Constitution, the WHO opted for a more structuralist approach to health promotion, manifested in its endorsement of the Ottawa Charter for Health Promotion: "Health promotion is the process of enabling people to increase control over, and to improve their health" (WHO 1986). Thus, health promotion is not just the responsibility of the health sector, but goes beyond healthy life-styles to well-being. The process is based on several prerequisites, according to the Charter: peace, shelter, food, education, income, social justice, a stable ecosystem, sustainable resources and equity. Accordingly, the Ottawa Charter health promotion activities are: creation of supportive environments, strengthening of community action, reorientation of health services, developing of personal skills and building of healthy public policy (WHO 1986).

Creation of supportive environments

The creation of supportive environments It is based on a so called 'socio-ecological approach to health'. It emphasises the interdependent environmental effects of those decisions affecting health at local and international level. Consequently, decision makers must take into account the implications of their decisions on natural and built environments. This action looks also at the organisational patterns of living and working at the local level, which should provide healthy working and living environments.

Strengthening of community action

Every action in health promotion is centred around the community, which is the subject rather than the object of its own health development process. This implies that it is the community which sets priorities, makes decisions, plans and implements strategies aimed at improving its own health. Empowerment is the essence of this community development process, which requires "full and continuous access to information, learning opportunities for health as well as funding support".

Reorientation of health services

The Ottawa Charter calls for a shift in the emphasis provided by health services. Rather than stressing curative activities, health services must focus on the intrinsic nature of each human being, looking at the social, political, economic and physical contexts of daily life.

Developing of personal skills

This action is required if personal and social development is to be achieved. Health education and provision of information are endeavours which not only promote the development of personal skills but also help in the making of healthful choices.

Building of healthy public policy

This action aims to put health on the agenda of policy-making processes at each level of society. Health promotion policy refers to several different but complementary activities such as: fiscal measures, legislation and taxation. It is expected that a healthy public policy will provide healthier goods, services and environments. That is, agricultural, education, and economy governmental departments, for example, should be involved in any healthy public policy. A healthy public policy also includes the due consideration of the health effects of 'non-health policies' such as, for example, transport.

2.5.2 EMPOWERMENT, THE HEART OF HEALTH PROMOTION

The concept of empowerment has been discussed in several different disciplines, including education, psychology and sociology. Most of these agree in defining empowerment as the process that enables individuals and people to understand and take control of the forces that affect their lives.

Empowerment operates at three levels: individual, organisation and community. Empowerment at the individual level refers to the process enabling a person to take control of her or his own life. It includes a critical understanding of the social and political context and the participation of the individual in the processes influencing decision-making (Israel et al. 1994). Empowerment at an organisational level refers to the same process but at a more collective level. Empowered organisations not only empower their own members but also look at influencing the decision-making at community level. At this level, empowerment refers to the promotion of autonomy by collective efforts, influencing and taking an active role in the larger social system.

Yet the role of empowerment, as the essence of health promotion, attracts critiques. I will introduce briefly those critiques to empowerment which draw on its origin, basic assumptions, and how people work out and assess empowerment processes in the field. Dealing with its origins Grace (1991), for example, argues that the discourse of empowerment in health education and health promotion is just the bureaucratic response of the State to those who demand more control over their own health and its determinants. The fundamental contradiction in the assumptions of empowerment lies, according to some authors,

> "in the idea of people empowering others because the very institutional structure that puts one group in a position to empower also works to undermine the act of empowerment" (Gruber and Tricket 1987).

For this reason empowerment, and health promotion based on empowerment, is very difficult to implement in capitalist societies, where the concept of power is determined by factors different to those posited by the community empowerment model (Swift and Levin cited in Rissel 1994). How can the empowerment discourse fit in the individualistic essence of the type of capitalistic society prevalent at the end of this century?

Dealing with the strategies for working out empowerment processes Israel et al (1994) argue, for example, that "health educators cannot 'give' power to people, but can enable others to strengthen skills and resources to gain power over their lives". This position is stressed by Wallerstein and Bernstein (1994), who argue that the role of health education in the context of empowerment is

> "to serve as resource and help create favourable conditions and opportunities for people to share in community dialogue and change efforts (...) and to engage in the empowerment process as partners, plunging ourselves equally into the learning process".

Finally, how to assess empowerment processes is another problematic area. Rappaport

(1987) proposes a naturalistic approach to the assessment of empowerment, since it cannot be analysed other than case by case, taking into account the particular context of each individual or community. Other authors argue in favour of models designed to measure empowerment since it is important to document quantitatively its impact, particularly when decision-making concerning resources is made (Rissel 1994; Schulz et al. 1995). Certainly, developing an appropriate answer to the critiques mentioned above is fundamental not only for the theory of empowerment, but also for the progress of health promotion.

2.5.3 CRITIQUES OF HEALTH PROMOTION

The basis for health promotion presented in the Ottawa Charter is not free from contradiction and debate (Rawson 1994; Bunton and Nettleton 1995; Seedhouse 1997). Important critiques of health promotion have been made in the sociology field (Lupton 1995; Nettleton and Bunton 1995). Nettleton and Bunton (1995), for example, argue that health promotion action is mainly directed at

> "promoting the health of populations, (which serves) to contribute in the creation of individual identities. Both populations and individuals are envisaged in terms of differential risk factors, (which reduction) requires that adequate attention be paid to the environmental context in which people live out their lives" (p. 50).

Populations, identities, risk and environments, according to Nettleton and Bunton's (1995) review, are the four areas of health promotion where three different categories of sociological critiques, namely, structural, surveillance and consumption, are focused. The structural critique says that, in spite of health promotion aiming to take into account the socio-economic determinants of health and disease, in the practice this has not been the case. Instead, health promotion action at the population level reinforces social division due to the "sexist, racist and homophobic value systems" (Nettleton and Bunton's 1995: 42) in which it operates; at the individual level it creates negative self-images and victim blaming since the free choice on which health promotion bases its action is far from free; at the risk level health promotion focuses on behavioural factors that ignore the material circumstances contributing to create those risks; finally, at the environmental level the structural critiques point out that it is the economic mode of production that is the main cause of environmental degradation, which is not touched on at all by health promotion action (Nettleton and Bunton, 1995).

Those presenting the surveillance critique argue that health promotion is just an endeavour for regulating population and to construct new identities ('healthy minds and healthy subjectivities') by the use of modern technology and information systems (Petersen and Bunton 1997). The surveillance critique says that at a population level modern techniques have intruded into people's private lives, for the supposedly good aim of setting up actions that promote the well-being of these populations (which is at odds with the principles of autonomy of health promotion). These actions contribute to the creation, at the individual level, of the health promoting self, a new identity which becomes a fundamental component of social regulation. For the aims of this social regulation the idea of risk is fundamental, every action that was part of normal daily life becomes natural and can now becomes a risk susceptible of regulation, which is less easy at environmental level, where the risks are not predictable (Nettleton and Bunton, 1995).

The consumption critique points out the parallels between health promotion and marketing techniques embodied in the use of commercial marketing techniques in so called 'social marketing') (see section 2.3.1 in this chapter). This is reinforced by the neoliberal project of keeping high rates of good and services consumption fuelling economic growth within liberalised economies. Marketing creates specific needs, transforming individuals into consumers. The patterns of consumption of these consumers are determined to a great extent by the way in which their perceptions of risk are manipulated in order to 'purchase' specific behaviours. A particular set of these products are ecologically 'responsible' behaviours, that supposedly contribute to the protection of the environment.

These critiques have not been properly answered, indeed have been ignored, within the health promotion movement. In fact, the wide agenda set out in the Charter is one of its main weaknesses, since it leaves room for the creation of different approaches to health promotion, depending on which aspects are given more weight. Several authors distinguish up to five different approaches to health promotion (Naidoo and Wills 1994; Tones and Tilford 1994; Seedhouse 1997), and several typologies when more sociological categories are employed (Downie et al. 1990; French 1990; Beattie 1991; Caplan 1993). Overall, and for the sake of this thesis, I will consider two basic approaches to health promotion, namely, the medical and the social. Most versions of medical health promotion have in common a notion of health as being the absence of disease (health in a negative sense) and of education as merely the delivering of information and the teaching of lifeskills. Thus, health is promoted by identifying those at risk of disease and encouraging them to change their behaviour. Health education messages with 'supportive' measures (such as reminders, freebies, enablers), pre-defined by experts, delivered at the individual and the mass level, and based on health psychology theories of health behaviour, are the most common strategy within this approach. The socio-economic context within which the health behaviour occurs is ignored, and individuals are held fully responsible for their health. Empowerment at the individual level for complying with the expert's advice is the aim of this approach.

At the other extreme are the versions of social health promotion which encompass a holistic conception of health, an appeal to communities' empowerment, and a separation from the medical model of health. The health promoter here is more a facilitator than an expert who leads the whole process. It aims to regulate the forces producing disease and health inequalities through legislation and fiscal control. This regulation can be the result of top-down approaches. However, according to social health promotion, it is a bottom-up approach the appropriate way to legislate on those issues determining health. This has been considered a post-modern[1] approach to health promotion (Kelly and Charlton 1995).

As in health education, the current debate about the aims of health promotion occurs between those with a structuralist view, closer to the social approach, and those with an individualistic one, closer to the medical approach. Structuralists consider that health is more a social construct than a consequence of individual responsibility, hence fiscal and legislative measures must create environments where health can be attained.

---

[1] The modern world is characterised by rationality and science, rooted in the ideas of the Enlightenment and in Descartes' philosophy. Postmodernity is characterised by a rejection of modernity ideas: reality is complex and paradoxical and the borders between truth and falsehood are tenuous; logical positivism is not the best approach for dealing with this reality; the human body is more than a machine ruled by laws; knowledge is not an accurate representation of reality; and tradition, as a source of authority, is replaced by reflective individuals (Kelly and Charlton 1995; Giddens 1997).

Structuralists criticise the individualistic approach to health promotion as it permits governments to avoid dealing with the economic and political causes of disease. While Structuralists consider that lifestyles are an expression of social, economic and political constraints on the individuals, individualists view lifestyles as a sustained pattern of behaviour, the consequence of free choice, in such a way that the fundamental task of health promotion is to combine efforts to educate people in the right choices, and provide legislative measures to facilitate the educational efforts.

In the health promotion boundaries' debate, Rawson (1994) suggests three kinds of solutions: a fundamentalist (only one criterion of health promotion is acceptable), an evolutionary (some solution is possible despite the fact that a universal one is impossible) and an eclectic (all versions are equally acceptable). Despite some significant elements the first two options fail to recognise the variety of social structures and cultural environments within which health is constructed. The last option is considered as a rather epistemological anarchic solution. French (1990), trying to create a health promotion theory, concludes:

> "Health promotion, then, is a collective activity that should not be led by any one group. Because of its truly eclectic nature it is impossible for the author to conceive of the development of a metatheory that will encompass all aspects of health promotion."

Rawson (1994) disagrees with this opinion and criticises programmes such as 'Heartbeat Wales' (Nutbeam et al. 1993), which is based on social marketing and social psychology theories of behavioural change, as an example of health promotion based on

> "a highly eclectic battery of imported models (...) the overall framework appears to have no guiding principles. Such unabashed eclecticism leaves health promotion in a limbo of arbitrary influences (...) easily assimilated by more powerful rivals or dismissed as an empty subject matter wholly dependent on other disciplines" (p. 218)

Nevertheless, Rawson (1994) ends his analysis by admitting that it is rational for a theory development process to go ahead despite its flaws. Rosenstock (1990), for example, argues that it is only when provisional theories are tested in the 'real world' that theory and practice begin to converge. It is well accepted in psychological research that it is not possible to build up a theory that explains the whole of human behaviour based just on an in-depth analysis of, let us say, infancy. The same assertion can be applied to the process of building a health promotion theory. It is not possible to obtain a unified model that explains and predicts facts, arising from dissimilar cultural contexts at different stages of social and economic development, when different types of social interventions are carried out. In that sense, the health promotion challenge is to generate a core theory that identifies what is common amongst this diversity.

For Kelly and Charlton (1995), the debate between structuralist and individualistic approaches defining health promotion is, basically, the debate between modernism and postmodernism. They argue that health promotion is jammed on the bridge between both banks:

> "(health promotion takes elements of) free will and determinism in explaining human behaviour. For health promotion, free will is held up as a guiding principle, embedded in notions of empowerment and facilitation, while at the same time defining the social structure as acting on people in a determinist way (...) either we are all free or are all socially determined (...) because the health promotion movement wants it both ways, it finds itself attacked both by the free will school of the right and the Structuralists of the left" (p. 89).

The vast array of factors determining health, and the broad scope of health promotion goals, call for a multidisciplinary approach with psychology, education, epidemiology and sociology as primary feeder disciplines, and social policy, philosophy, communications theory, marketing and economics as secondary feeders (Bunton and MacDonald 1994). Yet, as health promotion matures, the roles of these disciplines are redefined. This redefinition must be encompass the evolution of health promotion in each community—a quite laborious evolution in the Colombian context, as will be discussed in Chapter Five.

2.6 CONCLUSION

In this chapter I discussed the different concepts of health, development, health education and health promotion. Drawing on my discussion of these concepts I can make several conclusions relevant for the main argument of this thesis. Firstly, that health is a valuable condition for its own sake, but is the result of the interaction between factors which are not always under the control of individuals or communities. Secondly, that health education is an activity aimed at the creation of an educated public able, firstly, to take informed decisions affecting health at a personal level and, secondly, to participate in the political debate for health decision-making. Thirdly, that social development processes can be boosted by human capital investments combined with the creation of social capital within a democratic environment, wherein an educated public is fundamental. Finally, that health promotion action is essential for creating the supportive environments that an educated public requires for deploying the higher level of autonomy acquired through health educational processes. In the next chapter, I develop some of these ideas in the strategy for the control of TB.

Chapter 3

3. TUBERCULOSIS: EVIDENCE OF SOCIAL AILMENTS

3.1 INTRODUCTION

In this chapter I argue that the TB epidemic is the manifestation, at the biological level, of serious problems in the social fabric, and that its control requires a strategy drawing on a clear understanding of the biological, health behavioural and economic forces shaping its patterns. I develop this argument by introducing, firstly, the strategy for TB control exclusively based on a biological understanding of the disease. Secondly, I present a literature review of the socio-behavioural issues influencing the response to this strategy. Finally, I introduce the basis of a TB control model that combines prevention and treatment measures that take into account the biological, health behavioural and socio-economic forces causing the epidemic. Creation of an educated public through health education is essential in this model for two reasons. Firstly, to enable people to adhere to the medical advice for controlling the biological components of the disease. Secondly, to enable people to participate in the political debate for creating the policies supportive of adhesion to treatment, and the policies that can prevent the action of socio-economic forces contributing to the cause of the disease.

World-wide, every year eight million people develop TB and about three million die (Raviglione and Luelmo 1996). Indeed, TB is the largest cause of death from a single infectious agent in the world and is the biological cause of 26% of all avoidable adult deaths in LDCs (Raviglione and Luelmo 1996). Its economic impact is particularly high in LDCs because people between 15 and 44 years old are the most badly affected by this disease (Kochi 1991; Sudre et al, 1992). However, an increase in notification rates of TB has also been reported in pockets of poverty in developed countries, and in the former socialist countries (Raviglione and Luelmo 1996).

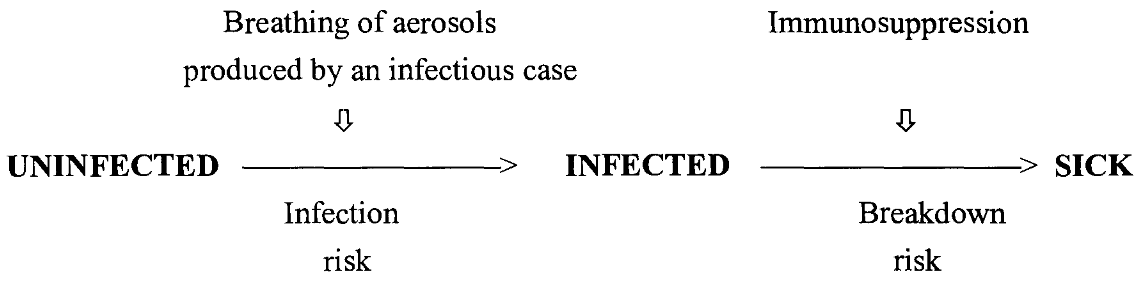
The biological agent of TB is the bacillus *Mycobacterium tuberculosis.* The most common source of infection is an individual with pulmonary TB and a positive sputum direct smear test. These individuals contaminate the air by coughing or sneezing without covering their mouth (Fig. 3.1). Just one bacillus in the lung tissue, after breathing contaminated air, is enough to infect the body (Murray et al, 1993). The infection risk to a person in contact with a source of infection depends on the duration of contact and the ventilation of the space in which contact takes place. Traditionally, TB was seen as a disease of relative low infectivity, requiring several months of household contact in an average North American dwelling for an individual to become infected (Daniel and Fauci 1992).

However, molecular biology techniques have been used to re-evaluate this concept, and point to crowding as the main determinant for infection risk, even after a few hours of exposure to contaminated air (Kenyon et al, 1996). TB infection is an asymptomatic life-long condition, but no more than 10% of infected people will develop the disease during their life time. This risk increases several times in the case of co-infection with HIV. Disease occurs when an immunosuppressive event, such as HIV infection, decreases the individual's immune control of the TB bacillus (see Fig. 3.1). In most cases the disease attacks the lungs, though any part of the body can be affected.

The discovery of the biological agent of TB during the early 1880s was an outstanding advance in the understanding of transmissible diseases, and marked the beginning of the germ theory era. As a result of this discovery the control of TB based exclusively on the biological understanding of the disease (bio-medical model for TB control) was strengthened.

Meanwhile, the environmental interventions preached during the 1800s were progressively discarded. The bio-medical model for TB control received a final boost with the discovery in the 1940s and 1950s of drugs that cure the disease. This model has been championed as the best strategy to control the disease by the International Union Against Tuberculosis and Lung Diseases (IUATLD), the WHO and, more recently, the World Bank (Murray et al, 1993). All three institutions provide supplies, technical assistance, donations or loans to LDCs in order to help them to implement this approach. Impressive results have been achieved both in developed countries and LDCs in terms of the objectives set up by this model for TB control (Murray et al, 1990; Frieden et al, 1995; Chinese Tuberculosis Control Collaboration 1996).

Figure 3.1 Stages in the natural history of TB.



In order to understand more clearly the objectives of the mass media health education campaign, it is convenient to spell out in more detail some fundamental concepts of the bio-medical model for TB control.

3.2 THE BIO-MEDICAL MODEL FOR TB CONTROL

The best way to prevent TB, from the bio-medical point of view, is to interrupt the transmission cycle by early diagnosis and effective treatment of every infectious case (Rodrigues and Smith 1990). It is not uncommon for people with pulmonary forms of TB to produce negative results from the sputum direct smear test, particularly among those individuals who also have HIV infection. However, only those individuals producing positive results from the sputum direct smear tests are considered able to transmit the bacillus. They also have a high risk of death without anti-TB treatment (Murray et al, 1993).

Provision of short-course chemotherapy (a specific combination of drugs that produces the most effective results) for PWT having a positive direct smear, and immunisation with the Bacillus of Calmette-Guerin (BCG) (in countries with a high risk of infection) are two of the most cost-effective health interventions available for LDCs (Murray et al, 1993). Diagnosis and preventive therapy of individuals infected with *M. tuberculosis* (asymptomatic by definition) are the main components of the TB control strategy in developed countries, since the low number of PWT facilitates the allocation of resources to control the breakdown risk in the infected population.

The best way to assess the impact of any TB control programme is to examine its effects on the annual infection risk. The annual infection risk is an epidemiological indicator describing the proportion of people being infected, for the first time, every year. An annual infection risk of more than 0.5% suggests that TB transmission is high (Murray et al, 1993). Production of this indicator is a very complex task, particularly in places where BCG immunisation coverage is high, so a proxy indicator is often used. The two main components of this proxy are the proportion of PWT cured among the total number of those starting treatment in a period of time, and the incidence of the disease (estimated from the notification rates).[1]

The annual infection risk is also the best indicator for assessing the impact of the bio-medical model of control. At the operational level other indicators such as diagnostic coverage (availability of services for TB diagnosis) and the detection rate (the proportion of PWT being diagnosed among the supposed total number of PWT) are also extremely important for assessing the case finding process. However, the priority in the bio-medical model of TB control is to achieve high cure rates. In fact, low cure rates coupled with high rates of case finding yield a high infection risk with multidrug-resistant strains, worsening the TB profile of a community. From longitudinal studies carried out in the 1960s and 1970s it is now accepted that a high detection rate (>80%), and a high cure rate (>90%), are the two key factors that can reduce the annual infection risk by 5% every year. In short, this means a reduction of 50% in the TB burden in a community every five years (Grzybowski et al, 1976). The fact that TB is one infection that can be cured among people with HIV explains that the incidence of HIV among those with TB does not affect the validity of this prediction.

Attainment of high detection and cure rates mean a different role for both PWT and health care institutions. Promoters of the bio-medical model expect that any member of the community should demand diagnostic services when symptoms appear and fully adhere to the treatment whenever the result of a smear test is positive. They also expect

---

[1] TB is really an uncommon disease, making it very difficult to know its real incidence rate. Instead, notification rates (the proportion of the whole population diagnosed with TB in a specific time period) are commonly used.

that the primary health care network provides PWT with diagnostic and treatment services that adhere to specific standards of practice which have been proved to be successful (Murray et al, 1993). Although the technology for diagnosing and curing TB is already well known and widespread in both developed and LDCs, the TB is still the main infectious disease in terms of mortality.

From the bio-medical point of view, many factors have been suggested to explain the persistence of TB, namely, insufficient diagnostic coverage, lack of direct observed therapy, minimal use of short-course chemotherapy, difficulties in the management of the control programmes, delayed diagnosis and non-adherence to treatment (Pio 1989; Styblo 1989; Enarson et al, 1995; Bloch et al, 1996). These explanations for the control programme's failure are briefly summarised by Styblo (1989), who blames the health care services:

> "...we are unable to diagnose a sufficient number of sources of infection and we are unable to cure those who are diagnosed...".

In the same way, others place the onus on society's inability to use the medical technologies available:

> "...the story of TB during the past 30 years has been one of triumph and tragedy: the triumph of the scientists who provided the means to control and ultimately eradicate the disease and the tragedy of the widespread failure to exploit their discoveries..." (Bignall 1982).

Yet, the most fashionable explanation in the late 1990s for the world-wide increase in the TB burden, and for the increase of multi-drug resistant forms of TB, not only in LDCs but also in developed countries, is that TB control programmes do not use the directly observed treatment short course (DOTS). DOTS is the bio-medical strategy for TB control championed nowadays by the WHO and the World Bank as the most comprehensive strategy for primary health services to cure PWT (WHO 1998a). DOTS strategy consists of HCWs or trained volunteers observing that PWT with a positive smear test swallow each dose of the short-course chemotherapy, and monitoring the PWT's progress until they are cured. The principle at the core of DOTS, HCWs witnessing that PWT take the pills, was first described and implemented in the 1950s in

Hong Kong (Humphries 1995). However, it is only now that the WHO is paying due attention to the advantages of this strategy.

The explanations of the failure of the bio-medical model for TB control as being merely a result of insufficient use of DOTS, or poor performance of health care services and HCWs, or poor reliability of PWT, are severely flawed. In fact, they neglect or diminish, firstly, the importance of socio-behavioural and economic determinants on HCWs' performance, people's accessibility to diagnostic services and PWT's adherence to treatment and, secondly, the influence of behavioural and socio-economic factors in the infection, breakdown and death risk. In the rest of this chapter I discuss the influence of these factors on the outcome of the bio-medical model for TB control.

3.3 SOCIO-BEHAVIOURAL ISSUES IN TB CONTROL

Organisational behaviour and beliefs of HCWs, people's health care seeking practices, and PWT's adherence to treatment are fundamental to the success of the bio-medical model for TB control. I argue in this section that, firstly, PWT's and HCWs' culturally determined perception of TB and its control has an important but limited power to explain their behaviour. Secondly, that in the context of extreme poverty, where most PWT and HCWs live and work, economic barriers to access to the poorly managed and underfunded health care services could be better predictors of delayed diagnosis, non-adherence to treatment and inefficiency in health care, than cultural factors. Finally, I argue that health education addressing lay beliefs must be combined with structural interventions in order to improve the outcome of any form of the bio-medical model for TB control.

For supporting these arguments I present a review of research findings published in the English language concerning the issues mentioned above, and the way in which they are affected by cultural and economic factors. This review was based on reports included in MEDLINE/EMBASSE databases during the last 18 years. Firstly, I introduce research findings dealing with lay beliefs and behaviours regarding TB. Secondly, I present findings dealing with HCWs' perceptions of TB control. Finally I introduce findings about the impact of these beliefs and behaviours on health seeking behaviour, adherence to TB treatment and organisational culture in health care settings.

Research reports based on qualitative methods, the most productive research method to understand culturally determined behaviour, were uncommon in TB research until very recently. Indeed, most of what is known regarding socio-behavioural issues in TB comes from 'knowledge, attitudes and practices' (KAP) surveys made by researchers from LDCs. KAP surveys, as applied in LDCs, have limitations dealing mainly with their reliability and validity, which are described elsewhere (Bulmer and Warwick 1993; Hauser 1993; Warwick 1993). Therefore, the results are difficult to interpret, promoting speculation and badly informed programme design (Stone and Campbell 1984; Freidenberg et al, 1993). It does not mean that useful information can not be obtained from such surveys. However, a generalisation of findings is problematic and analysis can be difficult. Nichter (1994) has demonstrated, for example, how biological aspects of TB are easily answered when the people are questioned in medical terms, which is not necessarily the case when the people are questioned about the illness as a lay construct. Another example is given by Sumartojo (1993), who found that many KAP surveys cite demographic variables as related to attitudinal, knowledge and cultural issues without taking into account that these are confounding variables representing cultural and socio-economic factors influencing health seeking behaviour and adherence to treatment.

These faults in current research practice are, to some extent, due to the gap between qualitative and quantitative research methods and to the precarious development of social sciences research in LDCs. Another factor contributing to the scarcity of good quality information about social aspects of TB in LDCs is the lack of interest in developed countries, until very recently, for issues dealing with TB in LDCs.

3.3.1 LAY BELIEFS AND BEHAVIOURS REGARDING TB

The increasing interest in health education as a tool for strengthening the impact of the bio-medical model for TB control explains, to a great extent, the surge in the 1990s of literature about lay beliefs regarding TB. Beliefs regarding the causes of the disease, factors predisposing to becoming infected, mechanisms of transmission, and strategies for treating those sick, are the main categories I found in the literature review. The way in which these beliefs are structured within society explain the different expressions of the stigma attached to TB, which is explored in more detail in this section.

Causes and predisposing factors

Most reports show that people describe TB as a result of different biological, economic and cultural factors. Witchcraft is commonly accepted as a cause of TB in East Africa, India and Haiti (Ndeti 1972; Farmer et al, 1991; Barnhoorn and Adriaanse 1992). In Latin America, Pakistan, and South Africa mechanical processes ('lung injury' or sudden exposure to changes in the weather) are how usually people think that TB develops (Mata 1985; Metcalf et al, 1990; Liefooghe et al, 1995; Menegoni 1996; Jaramillo 1998). TB is sometimes attributed to folk illnesses like the 'piang' in the the Philippines (Lieban 1976), or '*susto*' among Mexicans (Rubel and Garro 1992). In most reports TB is linked to poverty, food scarcity, consumption of alcohol and germs (Mata 1985; Westaway 1989; Nichter 1994; Nair et al, 1997).

Mechanisms of transmission

TB is widely considered to be a contagious disease transmitted through the coughing of PWT (Mata 1985; Westaway 1989; Metcalf et al, 1990; Liefooghe et al, 1995). However, in the the Philippines, South Africa and Latin America some other behaviours such as kissing, or sharing cutlery or other belongings with PWT, are also considered to be ways of catching the disease (Mata 1985; Westaway 1989; Metcalf et al, 1990; Nichter 1994; Jaramillo 1998).

Treatment.

People usually link the early symptoms of TB to benign conditions. Therefore, self-medication either with folk or over-the-counter remedies is a common practice (Mata 1985; Nichter 1994; Jaramillo 1998; Rubel and Garro 1992). People think the disease is curable, but doubts about the effectiveness of formal medical treatment lead patients, in some areas, to add folk remedies, or to consider pregnancy incompatible with medical treatment (Nichter 1994; Liefooghe et al, 1995).

The semantic meaning of TB can make treatment a complex issue. In a Philippine community, for example, TB and weak lungs are two conditions with overlapping symptoms (Nichter 1994). As vitamins are thought to strengthen 'weak' lungs, some pharmaceutical companies draw attention to their presence in isoniazid, one TB drug, in products available over the counter. In addition, it is not uncommon for people to treat themselves with TB drugs for weak-lungs/TB symptoms. Parents are advised by some HCWs to give isoniazid to their children when suggestive signs and symptoms appear (Nichter 1994). All these practices increase the prevalence of TB multi-drug resistance.

Stigma

Stigmatisation of PWT occurs universally (Ndeti 1972; Kim et al, 1985; Mata 1985; Westaway and Wolmarans 1990; Rubel and Garro 1992; Nichter 1994; Westaway and Wolmarans 1994; Jaramillo 1995; Jaramillo 1995; Liefooghe et al, 1995; Wolski et al, 1995) with some dubious exceptions (Metcalf et al, 1990; Van der Werf et al, 1990), and is one of the most disturbing aspects of people's experience of TB. Indeed, the prejudice against PWT has severe social consequences making PWT and their families shocked and reluctant to accept that they have the disease (Liefooghe et al, 1995; Dick et al, 1996). In fact, in many places PWT ask HCWs not to disclose the diagnosis to relatives, neighbours and employers while trying to adhere to the treatment (Liefooghe et al, 1995; Dick et al, 1996; Johansson et al, 1996; Nair et al, 1997). In the the Philippines, for example, TB is a taboo issue, and using the term weak lungs makes people more comfortable to discuss it. People think that TB is shameful and a bad mark to the family, but inside the family the stigma is less powerful (Nichter 1994). That makes sense of the common practice of HCWs to diagnose weak lungs in PWT (Nichter 1994). There is a clear tendency of HCWs in some settings to avoid talking to PWT openly about the disease, a practice that could help to perpetuate the stigma (Nichter 1994; Jaramillo 1995).

Goffman (1968) defines stigma as an attribute that discredits and spoils the identity of the bearer. Sociologists (Goffman 1968; Williams 1987) and psychologists (Jones et al, 1984) agree that stigma is determined by social experiences, and helps people to deal with the challenges of daily life. Psychologists focus on the study of prejudice, the attitude behind discriminative behaviour, in order to understand the stigma attached to some diseases and their implications (Crandall and Moriarty 1995). Allport (cited in Gross 1992) (p. 539) defines prejudice as

> "...an antipathy based on a faulty and inflexible generalization directed towards a group as a whole or towards an individual because he is a member of that group".

This antipathy has the three components of the classical attitude theory, namely, cognitive, affective and behavioural (Gross 1992). The cognitive component of the prejudice is the stereotype, which is a shared belief about the characteristics of a group (Gross 1992). This belief may be neither favourable nor unfavourable. The affective component refers to a strong feeling of aversion or liking (it is important to keep in mind that prejudice can be against or for a specific group). The behavioural component can take different forms, according to Allport (1954). He proposes five stages: antilocution (hostile talk expressed in verbal denigration, insults or jokes); avoidance (keeping a distance but without inflicting any intentional harm); discrimination (exclusion from civil rights, employment, etc.); physical attack (intentional harm inflicted on the person, or the property); and extermination (indiscriminate violence against the whole group) (Gross 1992).

The two most common behavioural stages of the prejudice against PWT reported in the literature are avoidance and discrimination. In a Honduras community, 60% of the healthy population surveyed feared that they would be rejected by their family and friends if they got TB (Mata 1985). A survey of hospitalised PWT in Mexico found that it was hard to be accepted again in the household after receiving TB treatment (Herrera 1971). In Machakos, Kenya, TB patients are rejected by their friends (Ndeti 1972). In Korea, "60% of people were reluctant to keep company with a person if she or he were found to have the disease" (Kim et al, 1985). In Cali, Colombia, a qualitative study found that lay people were afraid of PWT because of the infection risk (Jaramillo 1995). Isolation of PWT during treatment (avoidance of sex relations, kisses, sharing of meals and dishes, etc.) was the commonest approach to deal with the infection risk.

Women are more seriously affected by avoidance and discrimination than men.[1] Women, for example, may face less opportunities for marriage (Barnhoorn and Adriaanse 1992; Liefooghe et al, 1995; Nair et al, 1997), or even separation or divorce (Liefooghe et al, 1995; Nair et al, 1997). In India and Pakistan, it was found that TB is perceived as an adverse factor in the chances of getting married, particularly for females (Barnhorn and Adriaanse, 1992; Liefooghe et al, 1995). In Punjab, Pakistan, TB in either of the partners can lead to divorce or separation, but it seems to be more common when the person with TB is female (Liefooghe et al, 1995). In some instances, the husband of the individual with TB takes a second wife. As the financial support for female PWT in these communities is provided by their husbands, the disease burden is different for married women. Even for cured PWT the chances of marriage are diminished (Liefooghe et al, 1995). Rubel cites control officers who report that women who do not adhere to treatment bursting into tears at the possibility of their husband's learning of their diagnosis (Rubel and Garro 1992). In his own research findings, it was disclosed the patient's "fear that a spouse would discover their illness, refuse to eat or sleep with them, and even sever the relationship" (Rubel and Garro 1992). It is reported also that parents of girls of marriageable age may be reluctant to send their daughters to the health centres (Barnhorn and Adriaanse, 1992). In an opportunistic sample of 34 hospitalised PWT in Uganda, which aimed to analyse the cost they paid for diagnosis and treatment, Saunderson (1995) found that two out of 13 women reported divorce after being diagnosed. In this case, and perhaps in the other examples, health beliefs and the cost burden on PWT and families could explain their behaviour.

Avoidance and discrimination of PWT due to the stigma attached to the disease have other serious implications beyond the realm of family relationships. Indeed, stigma can be a synergetic factor worsening the TB-poverty relationship. In Cali, for example, a TB label on PWT precludes them from getting a job and is an extremely common cause of losing a post (Jaramillo 1995). Stigma, and ignorance of the mechanisms of infection, promote an abusive approach by some HCWs. Unsurprisingly, stigma is involved in many cases of PWT's non-adherence to treatment.

An approach to reducing the impact of stigma on TB control efforts can be based on the application of psychological concepts of prejudice and attitude change. A neo-functionalist approach to understanding prejudice in physical illnesses, distinguishes instrumental and symbolic functions (Crandall and Glor 1997). The instrumental function refers to the implications, in terms of material advantages and disadvantages, deriving from the relation of the individual with the attitude object. The symbolic function refers to the gains or losses in the process of re-affirming personal values that are produced by interacting with the attitude object. Instrumental function of the

---

[1] For a comprehensive review of gender issues in TB see Hudelson (1996) and Conolly and Nunn (1996).

prejudice against PWT is, for example, fear of infection. For example, behaviour based on this prejudice helps the individual to control the infection risk by avoiding exposure to potential sources of infection. A symbolic function is, for example, the aversion of poverty. Prejudice against PWT helps individuals, for example, reaffirm their social status: 'rejecting PWT I remind myself and my peers I am not poor'.

Since the instrumental function predominates in prejudice attached to physical illnesses it is easier to reduce this attitude with interventions providing information that contradicts those beliefs commonly held by the community (Crandall and Moriarty 1995). This is the principle of Cognitive Dissonance Theory for the control of prejudice (Aronson 1969; Leippe and Eisenstadt 1994). Health information programmes based on these social psychological concepts could reduce the stigma attached to TB and the severe social consequences it entails for PWT.

3.3.2 HEALTH CARE WORKERS' BELIEFS REGARDING TB CONTROL

For a long time HCWs have being blamed for the failure of TB control programmes (Bignall 1982; Chaulet 1987). Indeed, several researchers found HCWs giving poor information to PWT about the disease, reinforcing the stigma attached to TB, distrustful of public health programmes, ignorant about mechanisms of TB transmission, and making appropriate use of case-finding strategies and fundamental principles of chemotherapy. However, it is uncommon for research to be specifically aimed at assessing the extent to which HCWs contribute to the failure of TB control programmes.

While HCWs are blamed for TB control failure, they blame the PWT for the same problem. Rubel and Garro (1992), for example, cite a survey of directors of TB control in Mexico in which the officers pointed to PWT's ignorance and poor motivation to explain the difficulties in TB control. This point of view was also shared by many private practitioners surveyed in India (Uplekar and Rangan 1993). However, some HCWs in Vietnam, for example, operate a more comprehensive framework of reasons for non-adherence to treatment, including the behavioural and economic barriers faced by PWT (Johansson et al, 1996). One of the most common arguments presented by HCWs is the claim that PWT are poorly educated about TB and that, therefore, provision of information could be the key to improve the 'irresponsible' behaviour of

PWT. However, some findings suggest that HCWs are not effectively contributing to inform PWT about the biological aspects of the disease, for example (Mata 1985; Jaramillo et al, 1995). Lack of knowledge about TB in PWT, even after a long period of hospitalisation for treatment, has been reported elsewhere (Ndeti 1972; Roy 1985; Liefooghe et al, 1995).

HCWs can promote or reverse the stigmatisation process in their contact with PWT (Volinn 1983). In some settings HCWs' beliefs about TB differ from those of PWT, but in other settings both share the same beliefs. In the the Philippines the folk term 'weak lungs', used by many to designate conditions related to TB/acute respiratory infections and equivalent to TB for many others, is frequently used by HCWs aiming to reduce social stigma (Nichter 1994). In contrast Cali HCWs promoted the stigma, by giving information that reinforce the avoidance and discrimination exerted by the community (Jaramillo et al, 1995).

HCWs' beliefs about the quality of the TB control programmes can make a big difference as they are the source of advice for PWT. A survey made in Mumbai (India) in both allopathic and non-allopathic private practitioners found that none of them sent any person suspected of TB to the public health services available in the neighbourhood in order to be diagnosed (Uplekar and Rangan 1993). In the same survey 53 out of 102 doctors considered that the treatment of TB at the public health centres was not satisfactory.

HCWs beliefs about TB drugs can affect negatively the outcome of the control programmes. In a region of the Philippines, HCWs suggest PWT to purchase Rifampicin and combine this with Isoniazid, both essential drugs of short course chemotherapy, for symptoms compatible with TB, a practice that contributes to the increase in the rates of multi-drug resistance (Nichter 1994). Both drugs, available over the counter, are provided free by the National TB Control programme but shortage of supplies are quite common (Nichter 1994). Irregularity in the drug supplies affects the adherence to treatment and promotes drug resistance, this effect being strengthened by the HCWs' attitude in management of the same drug supplies. The chairman of an anti-TB hospital in Bogota (Colombia) admitted that when PWT begin taking anti-TB drugs

HCWs do not care if there are enough supplies to provide all the doses required in a full course of treatment.

In some places HCWs' beliefs regarding TB are scientifically unfounded. A survey of general practitioners in Korea showed that about 67% of them believe in the danger of infection from PWTs' belongings (Hong et al, 1995). Knowledge about the strategies for for the bio-medical model for TB control is reported to be poor in some places. Reports from Korea, India and Colombia show that HCWs relied mainly upon chest X-rays for the diagnosis/treatment of TB and monitoring of treatment courses (Hong et al, 1995; Jaramillo, 1998; Juvekar et al, 1995; Nair et al, 1998). HCWs' lack of knowledge about TB supports the common claim that they need more training in the technical issues of TB control. Undoubtedly this is an urgent need, but as demonstrated by Jaffre and Prual (1994) in Niger's midwives, this is not sufficient if the training provided does not take into account "cultural beliefs and practices of both the practitioners and lay people".

3.3.3 IMPACT OF SOCIO-BEHAVIOURAL FACTORS ON TB CONTROL ACTIVITIES

That lay beliefs were influencing TB control was acknowledged many years ago within the medical field (Fox 1962). However, concepts drawing on medical anthropology and the sociology of health and illness, such as health seeking behaviour and the adherence to treatment (medical compliance), were only fully developed in the late 1970s. Now it is more apparent that HCWs' and lay beliefs regarding TB and health care services interact to produce specific patterns of health seeking behaviour, and adherence to treatment. On the other hand, these socio-behavioural factors are interrelated with the organisational culture in health care institutions, and the household economy of PWT.

Health seeking behaviour

Studying diagnosis delay can expose the level of efficacy of health care seeking practices, and the barriers that PWT face when seeking help. Whether a diagnosis is early or delayed depends on both PWT and health care services behaviour.

PWT's contribution to delayed diagnosis can be explained, to some extent, by the stigma attached to TB and the misinterpretation of symptoms (Ndeti 1972; Lieban 1976; Rubel and Garro 1992; Johansson et al, 1996; Jaramillo 1998). Yet the quality and coverage of health care services also contribute to explain delayed diagnosis. This is the case in Colombia and India, for example, where HCWs may be unaware of TB symptoms and the management rules of the health care services (Nair et al, 1997; Jaramillo 1998). A survey in Korea found that rural PWT were at significantly higher risk of delayed diagnosis than urban ones (Mori et al, 1992). This was explained by the difference in availability of medical services between rural and urban areas and not by any clinical, socio-economic, behavioural or demographic factors (Mori et al, 1992). In Nepal, longer diagnosis delay occurs for those patients who initially visit the National TB Programme, than for those attending traditional healers (Nagata et al, 1995). Unacceptable diagnosis delay occurs even for PWT receiving attention at hospitals, as reported in Malawi (Harries et al, 1997).

Adherence to treatment

Adherence is basically determined by the characteristics of the treatment course, health care system, the individual and the social support network. The fact that treatment adherence is defined differently in most of the studies of this literature review, and that information on drug consumption is extremely poor in most of them, makes it difficult to assess.

Lay beliefs exert an important influence on adherence to treatment in some areas. In a community in India, lay beliefs predicted adherence in 81% of the cases (Barnhoorn and Adriaanse 1992), although a sorcery explanation for TB symptoms was not a predictor of PWT's adherence in a quasi-experiment of social support and TB treatment in Haiti (Farmer et al, 1991). This contradicts the conclusions derived from previous research carried out in the same country, which suggested that the failure of TB control was a consequence of the health services' unawareness of the local culture (Weise 1976). In some places PWT blame the social consequences of stigmatisation in order to explain their non-adherence to treatment. In Mexico City PWT point to the dread of family disintegration and fear of family rejection as the main reasons for non-adherence (Rubel and Garro 1992). The low status of women, in addition to the stigma, makes it even more difficult for them to adhere to treatment (Nichter 1994; Liefooghe et al, 1995; Nair et al, 1997).

Organisational culture in health care settings and TB control

The WHO have blamed the health care services as the main cause for the current TB situation: "...the majority of the health care systems are doing a poor job of curing TB patients (...) without question, the lack of effective TB control programmes around the world is the primary reason the TB epidemic is out of control " (Anonymous 1993).

That the quality of health care services is a key factor in the impact of the TB control programmes is beyond doubt. Perception of illness and the quality of medical services provided to PWT in Indian communities in southern Mexico, for example, influenced their response to TB control programmes (Menegoni 1996). A reform in the quality and coverage of the TB control programme in Cali (Colombia), mainly focused on HCWs' attitudes and practices, greatly improved the programme's performance (Jaramillo 1995). A well founded TB control programme, with periodic supervision of HCWs and bonuses for their work has been very successful in China (Chinese Tuberculosis Control Collaboration 1996). Nevertheless, with the exceptions mentioned above, many interventions have concentrated their efforts on trying to understand and promote a change in behaviour of PWT, neglecting the importance of HCWs' behaviour in the operation of health care systems and its determinants (Foster 1982).

The concept of organisations as social systems—reflecting the needs, values and perceptions of their members—applies also to primary health care centres (Nichter 1986). Structural and cultural elements at the health care systems determine labour stability, level and reliability of wages, availability of resources to carry out duties, supervision and technical assistance, continued education, bonuses, schedules of work, and the levels of stress that HCWs have to cope with (Nichter 1986; Foster and Tomkins 1997). HCWs' expectations and perceptions of these elements contribute to the creation of the values underpinning the organisational culture of health care services. Aitken (1994) applied anthropological methods and concepts from organisation theory in the Nepal health services, where the TB burden is notorious. The author demonstrated how 'inefficient' behaviour' can be explained as a characteristic of a wider system of 'values in use'. She concludes that the

> "...public health service in Nepal is operating under two values systems or theories. The official is that the organisation exists to improve of the district's population (in contrast with this) the theory implicitly accepted by staff is that the organisation exists in order to distribute and account for funds and to provide the staff directly or indirectly with an income..." (Aitken 1994).

Provided that this situation is not uncommon, it may be wondered whether the organisational culture in the health services of LDCs is able to deal with the challenges of an extremely demanding activity like TB control. Indeed, control of TB would benefit from more research into the way in which the organisational culture of health care could provide PWT with good quality health care.

TB control and household economy

Access of PWT to material support (food, money, fees for transport, etc.) is also a predictor of the outcome of TB control programmes. In Cali, Colombia, for example, house ownership by PWT (an indicator of socio-economic status) was significantly associated with adherence to treatment (Gutierrez 1989). Personal and family income is also a very important factor in the household economy that can predict adherence to treatment (Barnhoorn and Adriaanse 1992),

TB treatment entails high, and sometimes unaffordable, costs for PWT. In many countries PWT are still charged for diagnosis and treatment of TB. Yet it does not mean that where those services are free people do not have to pay some costs while seeking health care and during case-holding. A study in Uganda estimated that 70% of the total costs of diagnosis and treatment on a group of hospitalised patients, from initial symptoms to cure, is borne by PWT (Saunderson 1995). The majority of these costs are incurred before diagnosis, while patients seek treatment (Saunderson 1995). The importance of these costs as a barrier to early diagnosis is clear in some reports. Travel expenses, for instance, were often a greater financial burden than the hospital charge in some African communities (Van der Werf et al, 1990; Pocock et al, 1996), and in other areas it is reported as contributing to a delay in diagnosis (Menegoni 1996). On the other hand, inappropriate use of chest X-rays increases the costs for diagnosis, and often compel PWT to delay the next medical appointment (Nair et al, 1997; Jaramillo 1998).

Personal and family income can be badly affected as a result of case-holding (Pocock et al, 1996). Indeed, inability to work (Van der Werf et al, 1990; Liefooghe et al, 1995; Saunderson 1995; Nair et al, 1997) and length of treatment are a burden on the economic activities of PWT (Dick et al, 1996; Nair et al, 1997). These costs paid by PWT while adhering to treatment are particularly relevant when irregular supplies of drugs frustrate their efforts to attend a health centre daily to receive DOTS (Johansson et al, 1996).

Successful results in terms of PWT's adherence to treatment and high cure rates are reported from projects where social support was offered to PWT. This strongly suggests that household economy is an important determinant of the success of TB control programmes. The "Manyatta Project" in Kenya has been successful in TB control goals by providing shelter and food to nomad PWT during the intensive phase of therapy (Idukitta and Bosman 1989; Bosman et al, 1995). In Haiti, a quasi-experiment made with PWT showed that the cure rate was 100% in the group that received daily visits by the village HCW during the first month, special reminder forms, travel expenses aid and economic aid in cash during the first three months (Farmer et al, 1991). The control group received the conventional free treatment, achieving a cure rate of 56%. No difference in patient's beliefs about TB was found when both groups were compared, despite the fact that more than 80% of patients claimed that sorcery played a role in their disease. Although these projects lack appropriate evaluation research design they suggest that provision of social support (material help in goods, emotional support and information about TB) can make a big difference in terms of TB cure rates.

This literature review shows that some cultural beliefs and practices negatively affect the health care seeking process as well as the adherence to treatment. On the other hand, the well-being of PWT, already damaged by the disease, is seriously affected by stigmatisation. Erratic behaviour of PWT and HCWs is considered to be an important cause of the failure of TB control efforts. Those holding this view propose community health education on the epidemiology of TB and continued education for HCWs as the best strategies to counterbalance the negative effects of these cultural beliefs and practices.

However, lay beliefs and stigma do not occur in a vacuum, they are social constructions to understand and to deal more easily with daily life. One of the purposes of stigmatisation, for example, is to gain protection from a frightening aspect of reality (Gilmore and Somerville 1994). That makes health education a deficient approach in dealing with lay beliefs and stigma unless it is combined with structural measures that make visible for PWT that the diagnosis and curative treatment of TB are not an unpleasant experience. On the other hand, reports reviewed for this section show that lay beliefs and stigma are not consistent predictors of adherence to treatment. Lack of quality and inadequate accessibility to health services also contribute to delayed diagnosis, default, and non-adherence to treatment. In fact, high cure rates are achieved in projects providing social support to patients (Buri et al, 1985; Farmer et al, 1991; Bosman et al, 1995), or providing efficient health care services (Chinese Tuberculosis Control Collaboration 1996) based on DOTS, with HCWs committed to PWT's needs (Menegoni 1996), whatever their lay beliefs. This shows that the treatment course, the health care system, lay beliefs and social support networks are weighed up by PWT against the costs of receiving treatment and assuming a stigmatised sick role. Thus, some behaviours of PWT, commonly seen as irrational from outside, may be appropriate once the determinants of those behaviours are taken into account.

HCWs have also been blamed for the low achievements of TB control programmes. Reports reviewed for this paper suggest that HCWs do contribute to the poor performance of TB control programmes. However, causal claims between HCWs behaviour and poor TB control are difficult to substantiate since none of these studies took into account the context in which the HCWs carry out their duties. A successful TB control project in China, based on DOTS suggests that HCWs would not be impede the achievement of high cure rates when the strategy of control is applied with reliable supplies, good supervision, and when they receive adequate reward (Chinese Tuberculosis Control Collaboration 1996). HCWs, then, cannot be blamed for their poor performance unless the operational constraints they commonly face, the cultural beliefs they share with the community, and the organisational culture of health care services, are properly addressed.

Emphasising the role of culture in the outcome of TB control programmes implies that early diagnosis, adherence of treatment and efficient work at health care services are agency achievements of PWT and HCWs. This notion derives very easily in 'victim blaming': 'your behaviour is dangerous for you being diagnosed and cured of TB' (Crawford, 1977). By the same token, emphasising the role of structural factors assumes that PWT and HCWs are powerless victims of these forces. In fact, there are ethical principles to consider before making certain claims:

> "a person cannot be held morally accountable for failing to adhere to ethical or legal standards if he or she cannot do so, or if he or she faces insuperable obstacles to adherence" (Bayer and Dupuis 1995)

Indeed, addressing the agency and structural context of PWT and HCWs behaviour with educational and environmental interventions becomes an operational and ethical duty in TB control. The next section proposes the basis and justification for such types of intervention, which are the same as those underpinning a social approach to health promotion (see chapter 1, p. 58).

3.4 A COMPREHENSIVE MODEL FOR TB CONTROL

In this section I argue that the current bio-medical model is an inadequate approach to TB control, and that a more complex model integrating the different factors causing the disease would be more efficacious. This argument will be developed, firstly, by discussing the reasons why relying exclusively on the bio-medical model is a flawed strategy for TB control. Secondly, by discussing the current epidemiological model of causality in TB. Finally, an integrated model of causality of TB will be proposed. Such a model of causality is the way in which social health promotion would approach TB control. In this model treatment and prevention can be seen as complementary measures rather than divergent options as it has been often portrayed by historians of the TB (Tomes 1989; Wilson 1990).

As was mentioned in the previous section of this chapter, inappropriate use of the bio-medical strategy of control has been, by far, the most common explanation for the persistence of the TB burden (Styblo 1989; Enarson et al, 1995; Bloch et al, 1996). This idea is reinforced by the impressive results achieved by the bio-medical model for TB control, which may conceal the role that socio-economic factors play in the TB epidemic.

The rise of germ theory and, particularly, the discovery of treatment which cures, has resulted in the abandonment of the consideration of any other measures beyond medical treatment. Paraphrasing Sommer, once the cause of consumption was known "(and) 'consumption' could be treated why bother to prevent its spread?" (Sommer 1995). Yet both causality in epidemiology, and socio-economic issues in TB, are again appearing on the public health agenda. The approach to causality of traditional epidemiology is being questioned, and proposals are currently being developed for moving towards models that integrate different levels of complex structures (Millard 1994; Link and Phelan 1995; McMichael 1995; Sweat and Denison 1995; Pearce 1996; Susser and Susser 1996; Susser and Susser 1996; Shy 1997). Similarly, socio-economic issues in TB are again being considered as an important factor in controlling TB (Lerner 1993; Frieden 1994; Freudenberg 1995; Sommer 1995; Fineberg and Wilson 1996).

3.4.1 WEAKNESSES IN THE CURRENT MODEL OF TB CONTROL

The bio-medical model for TB control relies on services—diagnosis and treatment—which cannot be easily provided by those in charge of the programmes, and which most of those in need cannot easily afford. The high cure rates achieved in developed countries and some LDCs show that the first difficulty—provision of TB services—is more amenable to a solution (Murray et al, 1990; Chinese Tuberculosis Control Collaboration 1996), but it requires political willingness, reliable supplies and sound management at local level (Enarson et al, 1995). However, even where health care systems are able to provide high quality services for TB control, it does not follow that they can reach all of those in need of them. Several research findings underscore the role of low income among PWT as a very important obstacle, as seeking help and receiving treatment both entail high costs, even in countries where the treatment is free (Farmer et al, 1991; Saunderson 1995; Pocock et al, 1996; Bevan 1997; Nair et al, 1997;

Jaramillo 1998). The World Bank reports, for example, that 20% of Colombians in need of health care services, and 36% among the poorest 10% of the population, were unable to attend medical facilities because of the cost (IBRD/ The World Bank 1994). Lack of education is also singled out as an important obstacle to benefiting from TB control programmes (White et al, 1995; Dick et al, 1996). Both elements, low income and poor education, converge to construct what Link and Phelan call the fundamental causes of disease:

> "...knowledge, money, power, prestige, and social connections that strongly influence people's ability to avoid risks (because) no matter what the profile of diseases and known risks happen to be at any given time, those who have greater access to important social and economic resources will be less afflicted by disease" (Link and Phelan 1995).

These fundamental causes of disease can not be addressed by those working within the bio-medical model for TB control. Those who advocate an approach based on the bio-medical model of control, acknowledge the relevance of socio-economic factors (Reichman 1996) but dismiss a more comprehensive agenda (Landesman 1993; Reichman 1996). They argue that the medical treatment of infectious cases has demonstrated high cost-effectiveness and faster results, in terms of a reduction in the annual infection risk, than the improvement of socio-economic conditions (Murray et al, 1993; Enarson et al, 1995). Even when attention is paid to social issues, the bio-medical model is reinforced by the application of social psychology theories that promote behavioural change by the provision of information (Dick et al, 1996) or material incentives to encourage adherence to treatment (Brenner and Poszik 1993).

However, even if the bio-medical approach could achieve its objectives, namely, a high cure rate and high diagnostic coverage—both of which are problematic, particularly in LDCs—it still has at least two fundamental shortcomings. Firstly, lasting control of the disease requires long-term commitment. As the incidence of TB decreases it is more difficult to obtain political support for an increasingly costly strategy to control a disease that ceases to be a priority and, even worse, mainly affects the poorest, who are not in a strong position to exert political pressure. This was the case in the United States during the 1970s, and it seems that it could happen again once the downward trend in TB incidence, reversed in the 1980s, is fully recovered (Reichman 1996). Secondly, the bio-medical model, as applied in LDCs, is not focused on the enormous pool of infected people, who are the source of new cases transmitting the bacteria.

Indeed, 'preventive therapy' for controlling the breakdown risk in infected people is part of the strategy of control in developed countries but not in LDCs. This pool of infected people is highly susceptible to breakdown when facing social disruption—war, famine, economic crisis—and immunosuppressive conditions such as HIV infection. In fact, malnutrition, unsafe sex and alcoholism—the main risk factors for breakdown in people with TB—are also included within the group of five major risk factors in the so-called 'global burden of disease' (Murray and Lopez 1996). On the other hand, reinfection with *M. tuberculosis* is a serious threat undermining any 'preventive therapy' effort, particularly in LDCs ravaged by the HIV and TB epidemics. Thus, even if 'preventive therapy' could be fully implemented in LDCs—a task probably entailing, at least, the same difficulties faced by diagnosing and curing infectious cases—it could not protect against the social pressures that these countries are experiencing while moving towards a market economy.

Overall, empirical evidence shows that even a successful programme based on both chemotherapy (treatment of the source of infection) and preventive therapy (treatment of people infected but not sick) lacks sufficient protective action against the effects of social stressors and the HIV epidemic on infection and breakdown risk. In Cuba, for example, where the elimination of TB was predicted to happen within a short time (Gonzalez et al, 1994), the economic blockade by the United States has produced a sharp increase in the incidence of TB and other diseases associated with malnutrition (Garfield and Santana 1997). Similarly, the effects of the HIV epidemic on the TB incidence in deprived areas of developed countries, and the effects of the current economic reforms on the incidence of TB in the former socialist countries show, that a lasting control of TB is not possible by relying exclusively on chemotherapy and preventive therapy. In fact, even DOTS would not make a big difference.

3.4.2 CRITIQUE OF THE NOTION OF CAUSALITY IN MODERN EPIDEMIOLOGY

At the root of the weakness in the current strategy of TB control is the way in which causality is regarded by modern epidemiology, one of the main disciplines informing public health policy. Causality in epidemiology is currently challenged by critiques which focus on the epistemological approach, and the paradigmatic view of science (Link and Phelan 1995; McMichael 1995; Pearce 1996; Susser and Susser 1996; Shy 1997). The validity of these critiques are reflected, for example, in the way that multi-drug resistant strains of *M. tuberculosis* are seen within the public health field. The production of drug-resistance is seen as a consequence of "(a) failure of health care providers to treat patients initially with an adequate regimen and (b) failure of patients to take prescribed medications" (Bloch et al, 1996). That both facts are at the centre of the problem is beyond any doubt but, at the same time, relying just on this minimal explanation results in an inappropriate approach for dealing with the problem.

While this reductionism is one of the critiques of modern epidemiology, the neglect of paradigms critical of rational positivism is also an issue. Why are HCWs treating PWT inadequately, and why are PWT failing to take medication? These are questions that cannot be fully answered simply with the tools provided by the biological sciences, or social psychology. The way in which people, either PWT or HCWs, view and experience their own reality is better understood through the combination of interpretative and positivistic approaches (Baum 1995). Yet taking into account the way in which people view and experience their reality would require epidemiology to be able to look also at the socio-economic context influencing exposure and risk (Agar 1996). To deal with these critiques of modern epidemiology, several authors propose the development of a new paradigm in epidemiology that moves beyond the current focus on risk factors at the individual level, to include higher and lower levels of organisation in socio-economic and molecular contexts respectively (Link and Phelan 1995; McMichael 1995; Pearce 1996; Susser and Susser 1996; Shy 1997). How such a paradigm would help to explain the epidemic of TB and what would be the resulting approach for its control are discussed next.

3.4.3 MULTICAUSALITY: THE RATIONALE FOR A NEW AGENDA IN TB CONTROL

Within the reductionist paradigm of modern epidemiology, prevention is seen as an exclusive asset of the bio-medical model for control of diseases (Freeman 1992). However, when a view of multicausality is considered to explain disease, prevention has less to do with biological facts and more to do with social and economic issues. This section explores how this perspective applies to TB, and how feasible a policy for its control based on multicausality is at present.

Three different levels of causality—biological, health-behavioural and socio-economic—are introduced to explain TB (see Table 3.1). This model of an integrated view of causality in TB helps to point out the control measures which need to be taken at different levels of organisation, and thus suggests a more comprehensive agenda. For a better understanding of how these different levels of causality interact, they are linked to the three stages of the natural history of TB, in accordance with the biological perspective (see Fig. 3.1). The current evidence available to explain TB—and the approaches proposed to deal with the respective causal levels—are introduced in the intersection between each level of causality, and each stage of the natural history of this disease.

Not surprisingly the biological level of causality is the one which is most widely studied. However, the discovery of curative treatment and the decreasing incidence of the disease in developed countries resulted in the almost total disappearance of biological research on TB between the early 1970s until the mid 1980s. The re-emergence of TB in developed countries, linked to the HIV epidemic, fostered new research initiatives. The use of molecular biology techniques in endeavours such as the study of TB outbreaks with the help of restriction fragment length pattern analysis (RFLP) (Alland et al, 1994), and the sequencing of the DNA genome of *M. tuberculosis* (Cole 1996), are just two examples of new promising areas of biological research in TB. This research could help to improve the current medical techniques, by producing novel tools for dealing with infection risk in hospital wards and resistant strains of the bacteria, and for shortening the time for treatment required by current preventive therapy and chemotherapy.

Table 3.1 Levels of causality in TB and approaches to control at different stages of its natural history.

STAGES IN THE NATURAL HISTORY OF TUBERCULOSIS	LEVELS OF CAUSALITY / *APPROACHES*		
	BIOLOGICAL / ***MEDICAL***	**HEALTH BEHAVIOURAL/** ***HEALTH EDUCATION***	**ECONOMIC/** ***POLITICAL AND ECONOMIC POLICIES***
Infection risk	Inhalation of aerosol contaminated with bacillus/*Mask filters and ultraviolet lamps*	Coughing/sneezing without covering mouth; house designs without appropriate ventilation and sunlight exposure/ *Covering the mouth when coughing and sneezing; healthy house designs.*	Overcrowding/ *Access to resources to build or live in houses with healthy designs*
Breakdown risk	Lost of immune control on dormant bacillus/*Preventive therapy; BCG vaccination*	Unsafe sexual behaviour; poor dietary habits; non-adherence to preventive therapy/ *Safe sexual behaviour; diet rich in protein; promotion of adherence to preventive therapy*	Lack of food, education, and supportive environments for a safe sexual behaviour/ *Access to the respective resources mentioned above*
Death risk	Destruction of vital tissue by immune reaction/ *Chemotherapy*	Delay in diagnosis, treatment non-adherence/*Promotion of early diagnosis and adherence to treatment*	Lack of access to health services/ *Access to health services*

The health-behavioural level is the least well studied of the three levels of causality, particularly at the infection and breakdown risk stages. Indeed, under the influence of the HIV epidemic and the dominance of the bio-medical model of TB control only the behavioural aspects of sexual relationships, and early diagnosis and adherence to TB treatment have been researched by social scientists (Sumartojo, 1993), albeit within the reductionist paradigm of modern epidemiology (Farmer 1996). Explicit pleas to incorporate the health-behavioural determinant of TB through health education have been made not only in the LDCs (Roy 1985; Pan American Health Organisation 1986; Metcalf et al, 1990; Lancaster 1993; Liefooghe et al, 1995; Saunderson 1995) but also in the developed countries (Centers for Disease Prevention and Control 1995; White et al, 1995; Sumartojo 1993; Rubel and Garro 1992).

In 1994, a workshop organised by the Centers for Disease Prevention and Control, and some branches of the National Institute of Health in the United States, considered that "the major limitation of current efforts to control TB is ineffective education" (Centers for Disease Prevention and Control 1995). Unhesitatingly, education about TB is an essential input in the decision making of PWT. However, lack of education has been used mainly by HCWs to argue that it is PWT who are to blame for their diagnosis delay and treatment non-adherence. Thus, 'ignorance' is added to the stigma carried by PWT, an additional burden in societies where educational attainment is highly valued. Some interventions, based on individualistic notions of health education, have been delivered in LDCs aimed at improving adherence to treatment (Roy 1985; Van der Werf et al, 1990; Kumaresan and Maganu 1992). However, it is not possible even to assess the impact of this type of health education since they lack appropriate evaluation design.

Noticing that the benefits of the powerful tools available to control TB—chemotherapy and preventive therapy—are not fully exploited, the workshop organised by the Centers of Disease Control I mentioned above, defined TB education "as the creation of a pathway of understanding between TB control experts and the public, facilitating communication in both directions" (Centers for Disease Prevention and Control 1995) (p. 132). In line with this idea, it was considered that "public education about TB" should address the following issues: understanding that control of TB is an achievable goal, the social stigma attached to the disease, the adherence to treatment, the understanding of the social, economic, and political factors underlying TB epidemic and the sustainability of public health-based efforts in the control of the disease (Centers for Disease Prevention and Control 1995). Developing health education projects related to these issues would require, according to the workshop participants, the carrying out of some basic steps:

First, formative research to understand lay perceptions of TB and the variables affecting the acceptance of educational messages. Secondly, analysis of the way in which TB is portrayed by the media and by previous educational projects. Thirdly, choice of theoretical models suitable to the needs of TB, and design of appropriate strategies for delivering relevant information. Finally, the workshop recommended developing evaluation strategies to assess the impact of the different approaches available. Overall, the workshop concluded that the

> "challenge for the development of research in public health education about TB is to better understand the most feasible and cost-effective methods of conducting market research for TB education and to assess the degree to which messages tailored for one group maybe effective in another setting" (Centers for Disease Prevention and Control 1995) (p. 132).

Although promoting an understanding of the socio-economic factors affecting the TB epidemic was mentioned on one occasion as a goal of TB health education, it was not discussed any further within the document. In fact, this was more dominated by the individualistic ideas of traditional health education and medical health promotion where manipulation of information is paramount (see Chapter two, p. 57-8).

Educational interventions addressing the behavioural level still require a great deal of basic research in order to promote, for example, practices such as covering the mouth when sneezing and coughing—the most elementary prevention strategy. Yet, any health educational intervention can not be isolated from its socio-economic context if it is to avoid becoming a 'victim blaming' strategy. If health education initiatives really want to promote informed choices by communities they must help people, not only to change risky behaviours, but also to understand the relatedness of the different levels of causality. Health education in TB should aim to create an educated public on TB. An educated public on TB is that enabled, firstly, to follow appropriate health seeking behaviour. Secondly, to adhere to treatment. And, thirdly, as White et al (1995) points out, "to elicit the needed grassroots support of legislative action for adequate funding of needed services". In short, an educated public on TB is one that is literate about those forces causing the TB epidemic.

Finally, results from studies of TB mortality trends in England and Wales (McKeown 1976), and in the United States (McKinlay and McKinlay 1977; Bradshaw and Smith 1997) strongly suggest that improvement in levels of nutrition was the main factor in the downward trend in the TB epidemic during the last two centuries, and that the introduction of chemotherapy in the 1950s only accelerated that trend. The validity of McKeown's assertion has been questioned by authors who argue that public health measures such as PWT's isolation in sanatoria made a huge contribution in decreasing the infection risk and, therefore, the mortality (Bryder 1990; Wilson 1990; Mitchell 1992). However, this is debatable. On the one hand, there is clear evidence that confinement in sanatoria did not happen at the early stages of the disease but when symptoms were well advanced (Bryder 1988). On the other hand, by using the current techniques of molecular epidemiology it is possible to demonstrate that contacts of a contagious individuals can catch the infection at the very early stages of their disease, provided that some conditions like crowding are favourable (Griffith et al, 1995; Kline et al, 1995; Kenyon et al, 1996). It can be argued, then, that many PWT had already infected a substantial proportion of their contacts before they were sent to sanatoria, making negligible the effects of their isolation. This controversy could remain insoluble, at least for Great Britain, due to the low reliability reported in the registry of TB cases (Bryder 1996).

Nevertheless, there are several clues emphasising the importance of economic forces behind TB trends. In those countries where the socio-economic status of people has improved, TB is still more common in those groups who are less well-to-do. For example, in a cross sectional ecological study aimed at measuring the effects of income inequality on all-cause and cause-specific mortality in the United States, TB was one of the treatable causes of death strongly associated with the Robin Hood index, a measure of income distribution (Kennedy et al, 1996). Another element underscoring the effects of socio-economic variables on TB derives from the fact that the rates of this disease are positively associated with levels of overcrowding—a variable in infection risk—among those currently migrating from developing to developed countries (Mangtani et al, 1995), from rural to urban areas in less developed countries (Hardoy et al, 1990), and within the big cities of developed countries (Drucker et al, 1995). In many cases the migrants are the poor who managed to escape from war, from economic crisis or from urban decay (Wallace 1990).

No matter how strong the evidence derived from research at each level of causality, none individually is able to explain the forces influencing the pattern of TB for different individuals, cultures and societies. Higher infection risk of TB in hospital wards (Harries et al, 1997), for example, cannot be explained only as a result of PWT not covering their mouth when coughing. Crowding in these wards, for example, is an important factor regarding this higher infection risk. In the same vein, early diagnosis and adherence to treatment cannot be understood only on the basis of health behaviour issues since the need of PWT to buy basic resources such as food competes with the costs of attending health care facilities for diagnosis or receiving TB treatment (Farmer et al, 1991; Saunderson 1995; Pocock et al, 1996; Bevan 1997).

However, behind each of these three levels of causality there are, both in developed countries and LDCs, extremely powerful forces shaping patterns of risk and giving direction to causal relationships. Crowding in hospitals, costs of food, poor housing, malnutrition and access to health care services are intimately linked to the way in which wealth is distributed locally, and to transnational economic policies such as health care reforms or structural adjustment programmes promoted by the International Monetary Fund (IMF) and the World Bank—whose negative effects on the HIV epidemic and health care have been cogently discussed elsewhere (Loewenson 1993; Lurie et al, 1995). Similarly, the epidemic of TB in New York, for example, cannot be explained only as a by-product of the AIDS epidemic or the influx of immigrants, since the dismantling of the public health structure (Wallace and Wallace 1990; Brudney and Dobkin 1991) and the policies of urban planning put the poorest, and eventually the rich, at higher risk of infection and death by TB (Wallace and Wallace 1997).

While the biological and the behavioural level of causality can be partly addressed with bio-medical and educational approaches (see Table 3.1), the economic level is more problematic. Addressing the economic level means, at least, addressing poverty. The notion of a welfare state that provides or facilitates access to housing, health services and food to the poorest people could be the answer to the needs of a TB control policy that takes account of the economic level of causality. However, nowadays the welfare state is no longer on the political agenda of most developed countries and LDCs. In those countries most severely affected by the TB epidemic political decisions affecting the socio-economic level of causality are heavily influenced by the IMF, the World Bank, and bodies regulating the international trade (where the LDCs are powerless to defend their economic interests). Indeed, control of poverty is allegedly one of the most important aims of the World Bank. Its current strategy for controlling poverty is the promotion of growth through the creation of market economies in the context of world-wide liberalisation of the economy.

Empirical evidence contradicts the aims of that strategy: inequality in income has risen in most of those countries in transition or facing economic reforms towards a free market economy (World Bank 1996). This inequality in income appears to have a strong negative impact on poverty, and even to offset the positive effects that growth could have on poverty (Smolensky et al, 1994; Veltmeyer 1997), at least in the short term, not to mention its effects on social cohesion (see chapter two, p. 34). Even in countries such as the United Kingdom—where the non-interfering role of the State and the liberalisation of the economy have been strongly pursued since the early 1980s—the widening of the income gap between rich and poor has occurred simultaneously with an increase in TB rates (Bhatti et al, 1995; Mangtani et al, 1995; Pringle 1998). In this case trends in migration or the HIV epidemic cannot explain increased TB infection rates, as has been argued in the United States (McKenna et al, 1995). The World Bank acknowledges that increases in poverty and income inequality are inescapable during the early transition and reforms aimed at marketisation: "transition produces winners—the young, the dynamic, the connected—but it also imposes cost on visible and vulnerable groups" (World Bank 1996). However, it promises that, in the long term, this trend will be reversed once economic growth resumes (World Bank 1996).

Within the perspective of this model of causality for TB it is clear that treatment (interventions at the biological or proximal level of causality) could be still a technical issue, but prevention (interventions at a more distant level) is very much a political business, relying on the notion about what kind of society we want to live in. It is understandable, then, that at present—unless it is considered an alternative model of development that genuinely cares about the poorest, and that is based on more egalitarian and less utilitarian principles—TB is, and shall be, the stigmata of the losers, the hallmark of those vulnerable groups who, even in industrialised societies, endure the consequences of their inability to succeed in the game ruled by the market economy.

Sound economic reasons are argued to support the control of infectious diseases, such as TB, through a bio-medical approach (Evans and Jamison 1994). An integral agenda in TB control, taking account of the web of causality presented in this section of this chapter, could result in even more effective interventions to control the disease. Addressing those so-called fundamental causes of disease, mentioned above—unequal distribution of knowledge, money, power, prestige and social connections—not only would enhance the accomplishments of the goals of the bio-medical model of control, but would also reduce the impact of social disruption on TB. Instead of claiming impotence to deal with causes of disease beyond the biological level of causality (Sommer 1995; Fineberg and Wilson 1996), medical and public health leaders must look for alliances with leaders in those other fields participating in the causality web of disease—which could strengthen the impact of their respective programmes.

3.5 CONCLUSION

In this chapter I have presented a review of the biological, social and economic forces shaping the patterns of the TB epidemic, with a special emphasis on LDCs. TB is one of the most serious diseases world-wide, and its profile is intimately linked to patterns of poverty within and between societies. In addition to the physical burden, PWT suffer from the social discrimination resulting from the stigma attached to the disease. I have also argued that the bio-medical model is inadequate in order to understand the complex forces determining patterns of the TB epidemic. Therefore, a responsible strategy for TB control must tackle the biological, behavioural and socio-economic levels of casuality. Within such a strategy health education action is fundamental. Even within the reductionist notion of causality of the bio-medical model for TB control, discussed in this chapter, health education interventions could still help to rise the level of health literacy of the community. Evaluation of such interventions is the first step for a better understanding of how health education works and how they can contribute in the creation of an educated public.

Chapter 4

4. EVALUATION RESEARCH: AN INSTRUMENT FOR POLICY MAKING

4.1 INTRODUCTION

Policy analysis informs policy makers about the consequences of different choices for addressing social problems (Moore 1986). A mass media health education campaign, for example, is one of several choices available for tackling certain aspects of the TB epidemic. Yet policy makers need information in order judge the worth of this particular choice, a media campaign, for dealing with a specific feature of TB. In this chapter I introduce *evaluation research* as a subsidiary discipline of policy analysis. Results of evaluation research enable policy makers to choose between different options. The main argument I present in this chapter is that current models of evaluation research of health education and health promotion are narrow in scope and ignore the normative aspects embodied in such programmes. I develop this argument by introducing the current scope, theories and methods of evaluation research, and how they are applied in the current models of evaluation of health education and health promotion.

Evaluation research is committed to principles of social sciences to build up valid and reliable evidence about the value of social interventions. Rossi and Freeman (1993) define evaluation research or evaluation of a social programme as

> "the systematic application of social research procedures, in assessing the conceptualisation and design, implementation, and utility of social intervention programmes" (p. 5).

At the beginning of this century, more or less systematic evaluation of programmes in education and public health had already been developed by central governments. However, evaluation research, as the systematic application of social science research methods in order to assess interventions addressing social problems, is a very recent endeavour. After World War II thousands of programmes in Europe rebuilt economic infrastructures and met needs in housing, health and education. Large-scale programmes in family planning, nutrition, rural development and primary health care were initiated afterwards in LDCs. As human services became a responsibility of the State, refined models for planning and decision-making were required. Consequently, in all these settings projects were implemented for a systematic evaluation of these social programmes, in such a way that they could inform the decision-making process.

In addition to the prevalent post-war economic factors, Shadish et al (1991) consider that evaluation theories and practices have rapidly developed since the 1960s thanks to the increasing number of researchers trained in social science methods and the interventionist role played by the United States government in social policy. As increasing amounts of money were being invested in social programmes, in both developed and LDCs, increasing political pressure was employed to determine whether social programmes' goals were achieved. This political influence changed the definition of evaluation research. Instead of the mere application of social science methods, evaluation research became a discipline with political and managerial components, informing policy decisions on planning, implementation and continuation of social programmes.

An analysis of the origins of evaluation research, with a more sociological insight, is given by House (1993). He argues that evaluation research is an exclusive product of advanced capitalist societies in, at least, two ways. First, by placing science in the 'authority vacuum' left by the loss of influence of family, church, and other traditional procedures (more or less openly authoritarian) used by governments to take decisions. The government, in order to justify its decisions, appeals to the supposedly objective authority of a scientific inquiry:

> "Look, we have subjected the situation to a fair determination of the facts and arrived at this decision objectively. What more can you ask?" (House 1993) (p. 18).

Second, in these societies the ruling elite present the idea that economic growth is the solution to all social ills, and assign economists to devise the best strategies to create wealth. Meanwhile, social scientists are assigned to discover, with ingenuity and minimum dissent, argues House (1993), which are the best programmes to resolve the remaining social problems. Thus, evaluation research became the field incorporating the authority of science in order to justify any political decision, based on the assumption that scientific facts are devoid of any value connotation, a point discussed further.

4.2 SCOPE OF EVALUATION RESEARCH

During the 1960s the scope of evaluation research was focused on the results achieved by the programme evaluated. At this stage evaluators stressed the internal validity as the essential characteristic of every evaluation research. That validity could not be achieved by means other than experiments and quasi-experiments. This positivistic approach aimed at establishing the causality links between intervention and outcome. Evaluations based only on this approach can demonstrate *which* social programme works but can not explain *why*. Results of evaluation made during this stage were, probably, more frequently used by the designers of new programmes and by the managers of current similar projects rather than by managers and stakeholders of the evaluated one. However, this reduced approach did not take into account the determining factors influencing the outcomes of a social programme.

In the 1970s, the quality standards of the programme were also included as an object of evaluation research. This happened as a result of those critiques as to the failure of the experimental approach to deal with the complex social, political and managerial factors determining the procedures and effects of social programmes. It was argued, then, that it its uncommon for a programme to be fully isolated from 'noise' in order to measure its effects and replicate its outcomes. Two new words were coined by Scriven (1972) to describe the new scope: *summative* evaluation and *formative* evaluation. The first is used to describe evaluations focused on programme effects. Summative evaluation of short and long term effects is called *impact* and *outcome* evaluation, respectively. The second, formative evaluation,

> "typically connotes collecting data for a specific period of time, usually during the start-up or pilot phase of a project, to improve implementation, solve unanticipated problems, and make sure that participants are moving towards desired outcomes" (Patton 1997) (p. 69)

During the 1980s, authors emphasised the importance of tailoring evaluation research designs to the specific circumstances of each social programme. In their opinion, it is a waste to research the outcome of a programme if the *process* required to achieve that outcome is not investigated as well, with both quantitative and qualitative methods.

Process evaluation refers to the evaluation research which is aimed at investigating coverage and implementation details. Patton (1979) defines process evaluation as that

> "focusing on the internal dynamics and actual operations of a programme in order to understand its strengths and weaknesses and changes that occur in it over time" (p. 95)

and emphasises the use of qualitative methods in that endeavour. For Rossi and Freeman (1993) process evaluation, or *monitoring* as they prefer to call it, is related to

> "(the) identification of targets and assessment of a project's conformity to its design; in current usage, the term typically is synonymous with studies of programme implementation (...) increasingly the trend is to plan and undertake monitoring in ways that both provide information relevant to explaining impact findings and to meet the needs of programme managers and stakeholders" (pp. 162-3).

During the 1990s momentum has been gained by those critiques of the emphasis of evaluation research on impact and process, and the neglect of normative issues underlying social programmes. Indeed, some authors consider that the existence of interests different to those of the bodies commissioning the evaluation and sponsoring the intervention is an extremely important issue, and one that is neglected in most cases by evaluators. Acknowledgement by some evaluators, at least in theory, that there are a diversity of interests, contributed to the creation of the concept of 'stakeholder'. Weiss (1983) introduces stakeholder as

> "a concept representing an appreciation that each program affects many groups, which have divergent and even incompatible concerns (...) it recognises the multiple perspectives that these interests bring to judgement and understanding (...) the concept enfranchises a diverse array of groups, each of which is to have a voice in the planning and conduct of studies" (p. 11).

Today, stakeholder is the name given to any individual or body having any interest in a specific programme. The diversity of interests in the decision-making process reflects how politicised the environment is. Evaluation theorists posit that evaluation is useful to the extent it contributes to the political process that shapes social actions (Cronbach 1980) and, thus, the results of evaluations are used by the accountable individuals or bodies to allocate resources for continuing or improving a programme or discontinuing it. However, in this process it is not uncommon for the final decision to go against the common sense derived from the evaluation's results due to pressures from the most powerful stakeholders. Additionally, evaluation is constrained by social, organisational and demographic factors. These factors make evaluation research "an endeavour which is partly social, partly political, and only partly technical" (Herman et al, 1987).

By focusing just on impact and process and ignoring the values of the stakeholders evaluators avoid examining the goals of the policy which is backing the programme under evaluation:

> "what we have by and large is evaluation of the effects of policy upon those who are declared to be its intended beneficiaries. We evaluate the instruments of policy, the programmes of social action which emanate from agency offices. Often our enquiries are even more narrowly focalised, searching only for those effects which tell us whether programmes have or have not achieved their stated goals, ignoring effects which are not goal-related. What we seldom contemplate, and even more rarely achieve with any degree of penetration, is the evaluation of policy formulation (...) we evaluate the managed not the managers, the objects of policy and not the originators" (MacDonald and Norris 1980) (p. 147).

From their own evaluation experience in Great Britain, MacDonald and Norris (1980) consider that evaluation used to be commissioned at low governmental levels, in such a way that evaluators can assess implementation strategies but not the institutions and practices at higher levels of power, which are ruling the strategies. They further argue that if evaluation is to be democratically-based, it should concern not only formative or summative purposes but also embrace political evaluation, so as to provide choices between policy-making processes. In short, for these authors the scope of evaluation is the *source*, and not only the processes and effects of social programmes. Some authors go even further to argue that it may be more important to assess how appropriate are the objectives that the programme sets for itself:

> "It is not enough to judge performance against objectives that are not in themselves questioned, indeed interrogation of policy objectives may be the central function of an independent evaluation" (Walker 1993).

This group of authors defends the idea that evaluation research has to be an exercise encompassing political evaluation too, opening up argumentative debates between stakeholders. House (1993), for example, argues that evaluation research has to be an instrument for democratising the policy process:

> "(Evaluation research) should be an institution for democratizing public decision making, for making decisions, programs, and policies more open to public scrutiny and deliberation" (p. 127).

Evaluation is certainly, as Walt (1994) (p. 178) explains, "the end of the policy process (is the policy effective?) and the beginning (what should be changed)". Yet, the fact that objectives and the policy itself are not usually examined in evaluation research and policy evaluation is due, to a great extent, to the way in which policy making develops. Policy making is a political process where decisions are usually made by and for the convenience of those having the strongest leverage in the political debate. How this debate develops is dependent on the nature of the polical system (Walt 1994). In liberal democratic systems (broadly defined as those systems where the government is chosen in free elections), for example, which is the most prevalent political system in the world today, the citizens have some access to the policy making. However, even in those liberal democracies with the most advanced forms of political participation, this is usually reduced to the level of 'low politics'. 'Low politics' refer to those issues

> "not seen as involving fundamental or key questions relating to a state's national interests, or those of important and significant groups within the state (Evans and Newnham cited in Walt 1994) (p. 42).

Meanwhile, 'high politics' (macropolicies affecting transnational, national and local interests) are mainly determined by bodies, ranging from the IMF/World Bank to, usually, local economic groups, representing powerful interests and beyond the control of the public. Whilst policy making is heavily determined by relations of power between stakeholders, the evaluation practice is also determined to a great extent by the type of power relationships between evaluators and those commissioning the evaluation. This is one of the main reasons explaining the reduced scope of current evaluation research.

According to MacDonald (1976), these relationships determine three levels of accountability in evaluation research, namely, bureaucratic, autocratic and democratic. In *bureaucratic* evaluation the evaluator accepts the values of the commissioning office and behaves as 'managing consultant'. The evaluator's approach in terms of methods and techniques is determined by the managers' interests. This relation precludes inputs from other stakeholders not belonging to the commissioner's group. The evaluation report is out of the control of the evaluator, and used to be 'locked' in the files of the bureaucracy.

In *autocratic* evaluation, the values "are derived from the evaluator's perception of the constitutional and moral obligation of the bureaucracy" (MacDonald 1976) (p. 38). Evaluators play the role of expert advisers, using their authority to back up the academic merits of the evaluation exercise. Their contractual relationship with those financing the evaluation is made in such a way that they are not restricted in their approach to the field and are the owners of the report. This report is sent to bureaucratic bodies, and is also published in peer reviewed journals.

The *democratic* evaluation is a public service, within which the supporter has no special influence on the evaluator, but negotiates its relationship with the evaluator in the same way as evaluands do. "The basic value is an informed citizenry", based on the evaluator's acknowledgement of value pluralism, in such a way that he or she represents the interests of every stakeholder (MacDonald 1976). The report is not a recommendation, and is open to access and control by every stakeholder.

The political implications of evaluation research are particularly well reflected in Guba and Lincoln's (1989) Four Generation Evaluation, one of the two most influential theories in this field.

4.3 THEORIES OF EVALUATION RESEARCH

There are two different and well defined theories of evaluation research practice. One is proposed by Shadish et al (1991) and the other by Guba and Lincoln (1989). Both theories draw on the context, purposes, philosophical assumptions made by evaluators, and the historical antecedents of this discipline in the United States—which is the country where evaluation research has developed.

4.3.1 FOUR GENERATION EVALUATION RESEARCH THEORY

Guba and Lincoln (1989) distinguish a *first generation* evaluation, which originated in the educational field and focused on the measurement of schoolchildren's attributes. During the 1920s and 1930s measurement and evaluation were synonyms, as school achievement tests proliferated. The role of the evaluator was to design and apply measurement tools. While the first generation focused almost exclusively on students, the *second generation* targeted curriculum as well. In the 1940s the target of evaluation was not only the student's achievement (the result), but also the curriculum (the process). This step marked, for several authors, the birth of *programme evaluation* (Joint Committee for Standards of Educational Evaluation 1994; Guba and Lincoln 1989). The evaluator was now a measurer and a describer. In the 1960s, evaluators criticised the current programme evaluation model for lacking standards against which judgements could be made. This point is the origin of the *third generation* of evaluation. The evaluator became measurer, describer and judge.

Guba and Lincoln (1989) identify three defects throughout the above three stages of evaluation research. Firstly, a managerial approach to deal with the power relations between evaluator and the evaluation's commissioners. This managerial approach is little different to what MacDonald (1976) calls 'bureaucratic evaluation', introduced earlier in this chapter.

Secondly, failure to recognise the pluralistic character of society. It is assumed that science is value-free and consequently its findings should be accepted as objective truths. This assumption does not take into account that facts are constructed by the system of values that the evaluator brings to bear (Guba and Lincoln 1989).

Thirdly, dependence on the positivistic paradigm of science. This dependence results in evaluations under carefully controlled conditions, outside their real context. Evaluation aims to measure, and what cannot be measured is not real. Since products of evaluation are real, evaluators claim a certain authoritative attitude in their judgements, precluding alternative ways to assess the evaluand. Evaluation's products are what the evaluators found, and they are not responsible for the findings.

Guba and Lincoln (1989) propose a different approach, *fourth generation* evaluation, which aims at dealing with the above flaws. This approach is best described by the *responsive constructivist* evaluation theory. Its ontological and epistemological basis draws on the constructivist conception of social life (Cohen and Manion 1994). Responsive evaluation is characterised by a different view of the roles of evaluator, commissioner and stakeholders and a different purpose in evaluation practice. Parameters and boundaries of the evaluation, that is, values, purposes, procedures, methods and use of results, are the product of negotiation between stakeholders, evaluators and commissioners.

The purpose of responsive evaluation is to reach consensus between these three groups in respect of their own perceptions or constructions about the evaluand. Since this goal is uncommonly reached, a new evaluation exercise is promoted, "such iteration and reiteration is typical of responsive evaluation" (Guba and Lincoln 1989). The evaluator's role is to guide the negotiation process providing data gathered by quantitative and qualitative methods. For responsive evaluators truth is a product of consensus, phenomena are understandable to the extent they are analysed within their context, and the products of evaluation lack special status as they are merely a new and provisional construction. These assertions prevent the use of experimental methods and manipulation of variables, characteristic of the positivistic paradigm.

Although the four generation-based evaluations are uncommon in the literature the contributions of Guba and Lincoln have contributed to the increasing acceptance of qualitative methods in evaluation research (Joint Committee for Standards for Educational Evaluation 1994). Constructivism in responsive evaluation has been identified as the postmodernist critique of the modern science-based programme evaluation (Fishman 1992). However, as pointed out by Rossi and Freeman (1993),

> "the problem of establishing a programme's impact is identical to the problem of establishing that the programme is a cause of some specified effect. Hence establishing impact essentially amounts to establishing causality (and), in social sciences, causal relationships are ordinarily stated in terms of probabilities" (p. 218).

Thus, in a world where efficiency is the main criteria for economic and political decisions and where more direct forms of political participation are just developing, it is hard to find a detailed example based on responsive evaluation. Indeed, it is the Shadish et al (1991) evaluation research theory that is the basis of current evaluation practice.

4.3.2 EVALUATION RESEARCH THEORY OF SHADISH ET AL (1991)

Shadish et al (1991) define evaluation research theory as the body of knowledge required in order to "specify feasible practices that evaluators can use to construct knowledge of the value of social programmes" (p. 36). After reviewing the work of seven evaluation theorists Shadish et al (1991) propose a theory consisting of five fundamental components: social programming, knowledge construction, valuing, knowledge use and evaluation practice. I introduce next a brief description of each of these components:

> "The *social programming* component concerns the nature of social programs and their role in social problem solving. It deals with the internal structure and functioning of programs, their relationship to other institutions, and the process through which programs and their components can be changed to improve program performance. The *knowledge* component is concerned with what counts as acceptable knowledge about the object being evaluated, with methods to produce credible evidence, and with philosophical assumptions about the kind of knowledge most worth studying. The *value* component concerns the role that values and the process valuing play in evaluation, and how to construct judgements of the worth of social programs." (Shadish et al, 1991) (p. 36).

The *social programming* component gives support to process evaluation as being one of the fundamental parts of any evaluation, a point that has been discussed earlier. The *knowledge* component is one of those that makes a great difference between *Four Generation* evaluation theory and the current evaluation practice. The *value* component is mentioned by several of the evaluators on which Shadish et al. (1991) base this theory, but only Scriven (1986) spells out in more its significance.

> "The *use* component concerns how social science information can be used in social policy and programming. It deals with possible kinds of use, relative weight to be given to each kind of use, and what evaluators can do to increase use. The *evaluation practice* component concerns the things evaluators do as they practice their profession. It deals with the role of evaluators in relating to program stakeholders; how to decide which questions to ask; where one gets

> questions from; and what methods to use given priorities among questions, the issues about which uncertainty is greatest and constraints of time, financial resources, staff skills, and procedural standards" (Shadish et al, 1991) (p. 36).

The *use* component is one of the most debatable aspects in evaluation research practice. The different levels of political leverage amongst stakeholders mean that often the conclusions of evaluation are implemented according to the interests of the most powerful. The evaluation practice component is one that has increased its scope during the 1980s due to the influence of constructivist research approaches. For the aims of this thesis it is particularly useful to explore in more detail the knowledge construction, evaluation practice and valuing components.

Knowledge construction

Those theorists of the first stage of evaluation research in the Shadish et al (1991) review present the experiment as the only instrument to find the 'truth' about the impact of a programme. However, they acknowledge that when circumstances make it impossible the quasi-experiment could still be useful if the researcher manages to rule out the most serious threats to its validity (Cook and Campbell 1979). The two quasi-experimental designs most commonly used by evaluators are the 'pre-test—post-test' and the 'simple interrupted time series'.

In the one-group pre-test—post-test or the ABA design (see Fig. 4.1) a set of variables, relevant for the hypothesis under study, are assessed in a number of subjects or groups of subjects (pre-test observation). The same variables are measured again in the same group once the intervention is finished (post-test observation).

Fig. 4.1 The pre-test—post-test quasi-experimental design.

$$O_1 \ X \ O_2$$

O = observations

X = intervention

The main threats to the internal validity of this design are history, statistical regression, maturation, testing and instrumentation (Cook and Campbell 1979). History refers to the presence of other events happening at the same time as the intervention, which could affect the results and its interpretation. Statistical regression deals with the cyclical random fluctuations in the value of factors relevant to the evaluation, which could affect its impact. These values could change consistently in one direction due to maturation effects, that is, improved skills of individuals for dealing with certain specific tasks due to increasing experience. Testing refers to the predisposition among those individuals tested in the first observation to be more receptive to the intervention and, therefore, perform better in the second observation. Instrumentation deals with basic defects in the instrument measuring the variables relevant to the evaluation. These defects can occur either because modifications are made after the first observation by the evaluator, or due to modification in the definition of the information system tracking the changes in the variable. In some circumstances it is possible to overcome these threats, as Cook and Campbell (1979) argue, in non-design ways. That is,

> "when particular threats seem implausible in light of accepted theory or common sense or when the threats are validly measured and it is shown in the statistical analysis that they are not operating" (Cook and Campbell 1979) (p. 96).

The 'simple interrupted time series' is represented in Fig. 4.2. Time series is defined as "a sequence of data points from a single variable measured at multiple points in time", and the label 'interrupted' refers to an external event that potentially alters the time series (Orwin 1997) (p. 444).

Fig. 4.2 The simple interrupted times series quasi-experimental design

$$O_1\ O_2\ O_3\ O_4\quad X\quad O_5\ O_6\ O_7\ O_8$$

O = observations
X = intervention

This design rules out maturation threat by assessing any trend prior to the intervention. All the threats affecting the ABA design apply also to this design, however, history is the most serious one (Cook and Campbell 1979). The best way of dealing with this threat is to add a time series of a non-equivalent no-treatment control group that is comparable enough in terms of the characteristics of its population. The new design is the 'simple interrupted time series with a non-equivalent no-treatment control group time series design' (Cook and Campbell 1979).

This new design is considered to be one of the two quasi-experiments closest to true experimentation, that can provide information for causal inference (Orwin 1997) and for assessing the lasting effect of the intervention (Cook and Campbell 1979). In addition to the threats already mentioned, this design also has other problems which make inference less easy. How rapidly the intervention is implemented, and how rapid the effects become evident, for example, both influence the validity of the inferences. Another difficulty is that it is not always possible to gain access to data series long enough to rule out seasonality and for using the statistical procedures required in the analysis. Finally, the time intervals most appropriate for assessing the impact of the intervention are not always available. While yearly time intervals are common, monthly or quarterly "are more sensitive for detecting immediate causal impacts of short duration" (Cook and Campbell 1979) (p. 232). For the statistical analysis of this design the current most appropriate approach is the ARIMA modelling (Cook and Campbell 1979; Orwin 1997), though the C statistic might be used for series that do not fulfil the requirements for ARIMA (Fitz and Tryon 1989). However, visual inspection is an appropriate approach when the data fits certain requirements (Kazdin 1984).

Experiments and quasi-experiments were until the end of the 1970s the only approach used in evaluation research. Increasing interest in process and formative evaluation, and the works of Patton (1990) and Guba and Lincoln (1989), contributed to the acceptance of using qualitative methods, mainly in process evaluation. While quantitative methods are criticised because of their cook book nature, qualitative ones are criticised for their dependence on researchers' skills, and because their credit depends, supposedly, on the credibility of the individual researcher (Sechrest and Figueredo 1993; Sechrest and Sidani 1995). The conclusion of this debate has derived from an increasing call for the triangulation of methods, that is, combining quantitative and qualitative approaches (Steckler et al, 1992; Zeller 1993; Baum 1995). Sechrest and Figueredo (1993), for example, propose that instead of distinguishing between qualitative and quantitative methods they should be call *exploratory* and *confirmatory research* as they represent "the divergent properties of two complementary and sequential stages of the scientific process, rather than two alternative procedure".

Currently, it is becoming quite common in the practice of evaluation research to combine qualitative and quantitative approaches (Beattie 1995; Pope and Mays 1995; Nutbeam 1998). That is a consequence of the discrediting of quantitative methods as the "gold standard", of the widespread acknowledgement of the importance of the stakeholder's role in the evaluation and, finally, of the importance of process evaluation (Steckler et al, 1992; Zeller 1993; Black 1994; O'Donnell et al, 1994; Israel et al, 1995). Qualitative methods are now considered the appropriate paradigm to analyse changing processes at institutional and stakeholder level (Patton 1990; Lecompte 1994). In practice, their influence is well represented in the last issue of educational evaluation standards by the Joint Committee on Standards for Educational Evaluation (1994), which legitimate the eclectic approach, making a plea in favour of the use of qualitative methods to make evaluation more responsive to the conditions within which the programme develops.

Valuing

Value is the concept embodying the worth of something (Audi 1995). According to Anderson (1993)

> "to value something is to have a complex of positive attitudes towards it, governed by distinct standards for perception, emotion, deliberation, desire, and conduct" (p. 2).

This means, among other things, that values are endurable perceptions of the worth of something, unlike preferences, which may change depending on circumstances (Shiell et al, 1997), and which are not necessarily the same for everybody. The idea of extrinsic and intrinsic values are the most basic form for classifying values (Audi 1995). Intrinsic value refers to things that are good in themselves because of their intrinsic properties, while extrinsic value refers to those that are considered good because they are the means of achieving another thing that is also good.

The role of values were ignored in the 1960s, during the first stage of evaluation research. This was due mainly to the idea, prevalent amongst evaluators at that time, that science was a value-free endeavour. Issues dealing with values, goals, ends, means, source of policies were regarded as too subjective to be a motive of analysis. Obviously this idea was convenient for the interests of those bodies commissioning evaluation, as MacDonald (1976) and House (1993) have argued. The works of Scriven (1972; 1986) contributed decisively to evaluators' realising that social programmes have an inherent specific notion of what is good, one that might be convenient only to a particular set of stakeholders, and that, since evaluation is nothing else than constructing value statements, the values of the programme have to be clarified by the evaluator before producing a judgement (Shadish et al, 1991). The idea that social programmes are value-laden and that

> "evaluation is about determining value, merit, or worth, not just about describing programs" (Shadish et al 1991) (p. 49)

is shared by the majority of evaluation theorists, though most practitioners deal with values in a marginal and non explicit way. This is quite understandable once it is taken into account that bureaucratic evaluations are the predominant form, and that those sponsoring the social programmes do not expect their values to be questioned by the evaluators, who usually work out their practice under self-censorship. Meanwhile evaluators in the evaluation research (Bunda 1985; Schwandt 1989; Shadish et al, 1991; House 1993; Garaway 1997), policy analysis (Fischer 1980; Ray 1990; Aaron et al, 1994) and health promotion (Salmon 1989; Seedhouse 1997; Sidell and Jones 1997) academic fields found inadequate those evaluations that do not address values issues.

Shadish et al (1991) argue that a theory of valuing in evaluation research has three elements: a metatheory, a prescriptive theory and a descriptive theory. A metatheory

> "describes how and why value statements are constructed, for example, analysing the meaning of key terms, the structure or logic of valuing, and the nature of justifications for values" (Shadish et al, 1991) (p. 48).

A prescriptive theory deals with the promotion of particular values. It describes the reasons for doing so, and the ethical systems to support the values the evaluator wants to promote. A descriptive theory, argue Shadish et al (1991), do not claim that certain values are best

> "but that they are perceptions of program worth that are grist for the mill of decision making" (p. 49).

While adopting a prescriptive stance is defended by few authors, a descriptive approach to valuing is non explicitly used by most evaluators. Those defending a descriptive approach argue that

> "evaluators should study values descriptively because we do not have a correct prescriptive theory, and because the evaluator should not impose one ethical view on a program in a political system characterised by value pluralism" (Shadish et al, 1991) (p. 49).

They find that the most simple way for conducting descriptive valuing is to explore directly the stakeholder's values, although other alternatives are considered depending on the forms of democracy present in the community. This option is disputed by some authors such as Ray (1990), for example:

> "without the supportive backing of empirical evaluation information on program and policy norms, even the presence at the table of a full range of stakeholders representing different values and assumptions is insufficient to ensure a value-critical dimension in the argumentation process. Unless this backing is available, the values that drive the debate do not receive explicit discussion" (p. 62).

In short, consulting and eliciting stakeholder's values is not enough, it is also necessary that the evaluator make explicit for them the values underpinning the programme.

Shadish et al (1991) report that none of the theorists they reviewed offers a thorough theory of valuing integrating the three elements. Fischer, a policy analyst not included in the Shadish et al (1991) review of evaluation research theorists, proposes an evaluation model that offers an alternative way for constructing value judgements in evaluation. He asserts that social programmes are value-laden, and that both values and facts arising from a programme can be the subject of empirical examination (Fischer 1980). As a whole his proposal is a framework for policy evaluation, where assessment of programmes are another component. Fischer (1980) defines values as criteria, standards or rules "which are the basis for judging the merit of a programme". For him the basic tenet for working out valuing is that

> "together, values and norms are the sources of the ends that are pursued, (these) ends can be differentiated as ideals, goals, or objectives" (Fischer 1980) (p. 67).

He defines ideals as horizons that work as beacons but are always receding; goals as "attainable ends"; and objectives as specifications, "based on measurable intermediate goals" about how the project is to be developed (Fischer 1980) (p. 67). His model of evaluation has four stages, namely, verification, validation, vindication and rational choice. Verification is nothing else than the typical evaluation exercise assessing impact and process using quantitative and qualitative methods. At this level the evaluator analyses the 'facts' occurring in the programme and its effects on the community. At the validation level the evaluator uses qualitative methods to elucidate the values or criteria selected by the sponsors of the programme for assessing its merit. With the evidences given by impact and process evaluation, and the values identified by the evaluator, the stakeholder can debate and judge the merits of the programme as a whole. For the aims of this debate it is necessary to jump to the vindication and rational choice levels of the whole evaluation process. At the vindication level the evaluator locates and justifies the ethical system which is the source of the values identified at the validation level. At the rational choice level the evaluator "establishe(s) the basis for the choice of one way of life over another" (Fischer 1980) (p. 165).

The validation exercise starts exploring the objectives set for the programme and its respective empirical justifications. In this way the evaluator explores the objectives, goals and ideals until he or she reaches a stage where it is no longer possible to justify the ideals on an empirical basis but can defend only by argument. At this moment the values underpinning the programme become clear, and it is possible to jump to the third level, vindication. Identifying the set of values makes more clear the political stances not only of the programme but also of its managers and sponsors. What the evaluator does is to provide empirical and normative material for the stakeholders' debate, as Ray (1990) suggests.

Evaluation practice

This component is highly dependent on the others mentioned above. Indeed, it addresses questions such as

> "what the purpose of the evaluation should be, what roles the evaluator ought to play, what types of questions should be asked, what designs will be used, and what activities will be carried out to facilitate use" (Shadish et al, 1991) (p. 58).

Answers to these questions depend on the idea the evaluator holds about knowledge, valuing and knowledge use. But these ideas, as already discussed, depend also on the type of power relationship between evaluator, the sponsor of the social programme and the body commissioning the evaluation.

One of the most controversial topics in evaluation practice is the role of the evaluator, which can be internal or external to the programme, or academic, or methodological expert, playing the role of 'impartial' judge to take into account all the stakeholder's interests. Based on a survey of evaluation reports of community health projects in the United Kingdom published during the 1980s, Beattie (1995) provides a classification of current evaluation styles. Each one of the ten styles he describes reflects the role that the researcher played with respect to the evaluand and the procedures used to deal with data collection and data handling. Regarding the evaluand the evaluator can be external to the programme or intervention, that is, the evaluator is not contributing to the project work at any of its stages, or the evaluator can play a participant role in one or all of the stages of the programme. The practitioner-as-researcher and the action-research evaluation are two different styles described by Beattie (1995) in which the evaluator is actively involved in the programme. The practitioner-as-researcher is one style where the evaluator is a member of the same team that is carrying out the programme or the intervention. For the aims of this thesis it is useful to discuss in some detail the practitioner-as-researcher style, which is the style that best describes the role I played in the evaluation I am reporting in this thesis.

The practitioner-as-researcher evaluation style is based on the model of professional practice known as 'reflection-in-action'. This model is now increasingly accepted, not only in the education field (Richardson and Maltby 1995) but also in the health disciplines (Shapiro and Talbot 1991; Stockhausen 1994). It is mainly based on the epistemology of professional practice described by Schön (1991).

The point of departure for Schön's theory of professional practice is a critique of the Technical Rationality model, the prevalent model of the professional's thinking. The main assumption of this model, accordingly to Schön (1991), is that there is an 'objectively knowable world' out there, which is not affected by the practitioners' values. In order to obtain technical knowledge from this world, it is necessary for the practitioners to keep a clear boundary between the object of inquiry and themselves. For Schön, the positivistic model of Technical Rationality is so rooted in the mind of professional practitioners that they do not realise that they are frequently applying an approach that contradicts this model. The three main contradictions he finds in this model are, that

> "given the separation of means from ends, instrumental problem solving can be seen as a technical procedure to be measured by its effectiveness in achieving a pre-established objective. Given the separation of research from practice, rigorous practice can be seen as an application to instrumental problems of research-based theories and techniques whose objectivity and generality derive from the method of controlled experiment. Given the separation of knowing from doing, action is only an implementation and test of technical decision" (Schön, 1991) (p. 165)

Schön (1991) postulates another model for the understanding of professional practice. Briefly, it states that many professional practitioners think about the tasks they are doing, sometimes even while doing it, rather than applying rigidly the rules and techniques they learnt at university and, thus, they function as an agent/experient. Schön (1991) argues that his model lacks those contradictions he finds in the Technical Rationality model: practice is a kind of research and the practitioners' means and ends transform the inquiry into a transaction in which knowing and doing are inseparable. The characteristics of this theory of practice model underpin the rise of 'researching' as an act inherent to reflective-practice.

> "When someone reflects-in-action, he becomes a researcher in the practice context (...) the practitioner approaches the practice problem as a unique case. He does not act as though he had not relevant prior experience; on the contrary. But he attends to the peculiarities of the situation at hand (...) He is not

> dependent on the categories of established theory and technique, but constructs a new theory of the unique case. His enquiry is not limited to a deliberation about means and ends separate, but defines them interactively as he frames a problematic situation. He does not separate thinking from doing (...) Because his experimenting is a kind of action, implementation is built into his enquiry" (Schön, 1991) (p. 68).

Yet the relationship between practice and research is complex, and develops in situations where conflict or uncertainty are common. This is one of the reasons to explain the rise of different modalities of research within the professional's practice:

> "There is no question of an 'exchange' between research and practice or of the 'implementation' of research results, when the frame- or theory-testing experiments of the practitioner at the same time transform the practice situation. Here the exchange between research and practice is immediate, and reflection-in-action is its own implementation. Nevertheless there are kinds of research which can be undertaken outside the immediate context of practice in order to enhance the practitioner's capacity for reflection-in-action" (Schön, 1991) (pp. 308-9).

This kind of research is called 'Reflective research' by Schön. He proposes four types of 'reflective research'. One of them is frame analysis, that is

> "the study of the ways in which practitioners frame problems and roles, can help practitioners to become aware of and criticise their tacit frames" (Schön, 1991) (p. 309).

Drawing attention to the way professionals frame problems, Schön shows that this this framing sets the values shaping the practice. However, the level of professionals' awareness of their frames determines the need to reflect-in-action on these tacit or explicit frames. At this point, some professionals reflect on their frames, and become researchers in order to assess the assumptions and values attached to the current and alternative frames (Schön, 1991).

The work of Schön is certainly a very important contribution in the development of the use component of evaluation research theory. It could help the evaluation practice to develop exercises based on more comprehensive notions of validity, and evaluations that are more open to public scrutiny.

4.4 EVALUATION RESEARCH IN HEALTH EDUCATION AND HEALTH PROMOTION

Few models of the evaluation of health education have been described so far (Flay and Cook 1981; Flay 1986; Nutbeam et al, 1990; Thompson 1992). Most of them are designed by authors coming from the health sciences field, and are more or less inspired by the theories and methods developed in social programme evaluation (Shadish et al, 1991). A top-down strategy is reflected well in the language used in these models, namely, targets, interventions, treatment and change behaviour, for instance. This top-down approach contradicts the bottom-up approach proposed by health promotion in the Ottawa Charter (WHO 1986).

Fullerton et al (1995), for example, ignores valuing in their proposed gold standard for evaluation in health promotion. This gold standard has three sets of characteristics, namely, descriptive, quality assessment and methodological. Descriptive characteristics they ask evaluators to consider are: details of the programme contents, background disciplines, theoretical orientation, social characteristics of the participants, intervention site, programme provider, length of the programme and measurement tools.

Quality assessment categories deal with design and analysis: the extent to which the aims and outcomes of the study are clearly defined, the replicability of the study, the type of control used, the sample size, the unit of allocation, number of units assigned to each condition, pre- and post- intervention information, whether attrition is discussed and the type of analysis carried out.

The eight methodological qualities Fullerton et al (1995) suggest are: clear definitions of aims; a description of the intervention package, and a design sufficiently detailed to allow replication by others; inclusion of a randomly allocated control group or a control group equivalent on socio-demographic and outcome variables; provision of data on numbers of subjects recruited to each condition; provision of pre-intervention data for each condition; attrition rates for each condition; provision of post-intervention for each condition; and findings reported for each outcome measure as described in the aims of the study (Fullerton et al, 1995). These authors found few evaluations, at least in the HIV health education field, fulfilling the gold standard they propose. This standard is, to a great extent, proposed also by the two more comprehensive evaluation models for health education I will discuss next.

4.4.1 FLAY'S EVALUATION MODEL OF HEALTH EDUCATION

Flay (1986) presents an evaluation model based on medical evaluation practice and analytical epidemiology. He allegedly aims to teach those evaluators of health education and promotion from the social sciences field how their evaluation practice could be improved. His model states several levels of evaluation tests with their corresponding designs and methods of research: efficacy trials, treatment effectiveness, implementation effectiveness and programme evaluation. It is based on two basic concepts: efficacy and effectiveness.

Efficacy tests are those investigations aimed at assessing the worth of an intervention "delivered under optimum conditions"; these tests should be performed on an experimental basis if a causal relationship is to be established (Flay 1986). *Effectiveness* tests are those investigations aimed to assess the worth of an intervention "delivered under real-world conditions" (Flay 1986). Effectiveness tests should not be conducted unless efficacy tests show the value of the intervention. Insufficient use of efficacy tests explain, in Flay's opinion, the poor results commonly achieved by health promotion interventions. Availability and acceptance are key factors to be considered in efficacy and effectiveness tests. Availability is the extent to which the target audience can reach the services or products delivered by the intervention. Acceptance is the extent to which the audience target is receptive to the intervention's proposal. Manipulation of these two concepts determines four different types of assessments.

Firstly, efficacy trials are those tests within which the implementation is standardised and availability and acceptance are optimised, for example, a captive group such as a classroom receives the intervention. Secondly, treatment effectiveness, which is a test in which an efficacious intervention is applied under optimised availability but variable acceptance. A typical example is a small group of classrooms receiving the intervention tested. Thirdly, implementation effectiveness tests which are those that assess an efficacious intervention delivered under variable levels of availability and acceptance. Finally, programme evaluation which assesses a non-standardised intervention or with unproved efficacy delivered under variable conditions of availability and acceptance. These characteristics cause difficulties in interpretation of programme evaluation, particularly when the programme does not produce the expected effects. In fact, four factors are not controlled in this type of programmes: real value under standard conditions (efficacy), implementation process, acceptability and availability.

For Flay (1986), process evaluation is composed of three elements: implementation evaluation, process analysis and testing of theory. *Implementation evaluation* assesses the required conditions, providers, audience and effort in relation to the treatment provided. It includes an assessment of availability, that is, what was eventually received by the target audience. *Process analysis* applies to the discussion of links between outcome and impact measures. This is particularly needed in health education and promotion because the causal links between change behaviour and morbi-mortality measures are not always clear. *Testing of theory* refers to the assessment of the model or theory on which, supposedly, the health programme is going to work. That is, to test the mechanisms mediating the causal processes between intervention and impact presumed by the programme theory.

4.4.2 NUTBEAM ET AL.'s (1990) EVALUATION MODEL OF HEALTH EDUCATION

Nutbeam et al (1990) present evaluation in health education as a continuum in which emphasis on impact and process purpose varies according to the stage of the project and the audience for the evaluation. According to their model the first stage of any project, called *experimental study*, must be evaluated in a summative way. It aims to establish whether or not the intervention produced the intended results when it was delivered under optimum circumstances. Most of the evaluative exercises at this stage are made by academic researchers using experimental designs.

The second stage of a health education project in the Nutbeam et al (1990) model is the *demonstration study.* Once an *experimental study* has achieved successful results it is required to establish what logistic and population variables affect the successful replication of the intervention. The evaluative purposes at this stage are still summative but it is also equally important to understand why the intervention is achieving bad or good results.

In their model process evaluation purposes are fully displayed at the third stage of any intervention, that is, *dissemination studies*. The objectives of the evaluation at this stage are to identify factors constraining or promoting the replication of the intervention at community level. For Nutbeam et al (1990) process evaluation is composed of three elements, according to the current evaluation practice: network analysis, programme exposure and programme acceptability. Network analysis consists of the monitoring of the diffusion of the messages and its efficacy throughout the group target of the health education intervention. Programme exposure aims to measure the extent to which the community target has been exposed to intervention. Programme acceptability refers to the level of acceptance by the community target of the methods and contents of the health education activity.

4.4.3 CRITIQUE OF CURRENT EVALUATION MODELS OF HEALTH EDUCATION

The critique I present in this section applies not only to the evaluation models of Nutbeam et al (1990) and Fly (1986), but to other less well defined models such as that of Fullerton et al (1995). This critique on those models focuses on two issues, firstly, the equivocal use of technical terms coined by mainstream evaluation research and, secondly, the neglect of normative analysis (assessment of values) and the emphasis these authors place on assessment of process and impact, seemingly indispensable for the consolidation of health education and health promotion.

Meaning of ‘process’ and ‘impact’ in evaluation of health education

Process evaluation and impact evaluation are two terms that refer to specific phases in the evaluation practice which have been used inappropriately by several authors. Indeed, it is common that some evaluators in the health field look at *process evaluation* as an equivalent of *formative evaluation* (Israel et al, 1995; Dehar et al, 1993). To some extent, these different views of process and formative evaluation reflect the practice of evaluators from different fields. Health education and health promotion evaluators usually evaluate relatively small and short term interventions, while evaluators trained in social sciences are used to evaluating large-scale social programmes, at different stages of implementation where formative evaluation is clearly needed. A clear account of the meaning of process evaluation and formative evaluation in the health field is provided by the 'Panel on Evaluation of AIDS Interventions' (Coyle et al, 1991):

> "Formative evaluation is a special type of early evaluation that occurs during and after a program has been designed but before it is broadly implemented (...) Once an intervention has been implemented, the next stage of evaluation is process evaluation, which addresses two broad questions: 'what was done? And 'To whom and how? (...) When interventions continue over a long period of time (it) can also play a role in improving interventions by providing the information necessary to change delivery strategies or program objectives..." (p. 51).

Impact and outcome are two other terms receiving equivocal use by health education evaluators. Downie et al (1991), for example, define impact and outcome in accordance to the length of time from the beginning of the project until the results appear. Thus, impact evaluation assesses results achieved more or less immediately and outcome assesses results observed after a longer period of time. Israel et al (1995) use a more specific criterion, in line with mainstream evaluation research. For them impact evaluation deals with programme effectiveness in targeted mediators such as knowledge, beliefs and practices at individual and community level, whilst outcome refers to the effects of the programme in terms of morbidity and mortality. It is clear that effects in terms of morbidity and mortality cannot be attributed exclusively to any programme in health promotion. However, it is possible to predict the effects in terms of morbi-mortality of any variation in intermediate effects, such as biochemical variations of certain markers, and change behaviour, based on the epidemiological model of some diseases. In the case of TB, for example, based on the epidemiology of the disease, one can predict the effects on morbidity and mortality of changes in notification and cure rates.

Normative analysis in evaluation of health education and health promotion.

Evaluation models of health education and health promotion include most of the components of evaluation research theory proposed by Shadish et al (1991) except for the value component. This is quite understandable once it is taken into account that they operate within the value-free science frame. Fullerton et al (1995), for example, ignores valuing in the 'gold standard' of evaluation in health education they propose.

Indeed, evaluation of health education and health promotion is still focused exclusively on the analysis of impact and process. This is explained, to a great extent, by the contested nature of health promotion, a field developing in a world where efficiency is highly valued (Burrows et al, 1995). Thus, evaluation exercises are aimed at demonstrating the how useful health promotion activities are. Some authors state categorically that evaluation research is an essential endeavour if health promotion is to survive (Naidoo and Wills 1994). Yet what sort of 'evaluation' and what is meant by 'survival' are issues rarely discussed.

Undoubtedly, assessing the impact and process of an intervention is fundamental in judging its merit and the taking of further decisions. However, evaluation relying solely on questions dealing with the *what* (impact) and *how* (process) of the intervention wrongly assumes that only facts matter, and that the values do not have any role to play in health education and health promotion. From what has been discussed in this and the previous chapters it is clear that health education, health promotion and evaluation research have a technical *and* political nature, and they are driven by values and not by facts. Thus, in a democratic and pluralistic society *what values* and *whose values* are essential questions in any evaluation of health promotion for the stakeholders to assess the worth of a programme.

Evaluation of health education and health promotion that is based just on impact and process could probably guarantee the survival of a certain sort of health promotion that, by being assimilated into the old practices of public health, loses the essential values that made it an alternative for creating health. Yet the pressures of the market economy seem to be insurmountable. In spite of the fact that some authors ask to include assessment of values in the evaluation of health education and health promotion programmes (Salmon 1989; Witte 1994; Seedhouse 1997; Sidell and Jones 1997), these claims are still ignored by practitioners, even in the most recent theoretical review of the field (Nutbeam 1998). Indeed, values are barely mentioned in the health education and health promotion evaluation literature (Flay and Cook 1981; Flay 1986; Nutbeam et al, 1990; Israel et al, 1995; Macdonald et al, 1996; Nutbeam 1998). This omission is characteristic of the ‘systems management’ conception of evaluation (Glass and Ellett 1980). This conception is adopted, for example, in a recent and comprehensive review of literature on evaluation in health education:

> “it is important to keep in mind that evaluation is one component of a broader programme planning process (...) different types of evaluation correspond with different steps in the programme planning process” (Israel et al, 1995).

In line with the current notion of evaluation prevalent in the health promotion field it is not surprising that the experimental model is presented as the “classic design for evaluation of health education programmes” (Israel et al, 1995), though most evaluators are ready to bargain for a less powerful but still useful quasi-experimental design. Indeed, for many authors sophisticated experimental designs, aimed at increasing internal validity, are inappropriate because they assume conditions that do not fit in the real context of daily life (Downie et al, 1990; Green and Kreuter 1991; Lincoln 1992; Israel et al, 1995). Lincoln (1992) succintly summarises this position:

> “...evaluation efforts have to be well matched to the irregularity of and complexity of life, and pace to coincide with human systems, not laboratory conditions...”.

Yet the main reason for the common use of quasi-experimental designs in current evaluation practice is not that evaluators compromise with constructivist discourses but the complexities entailed in randomised clinical trials, particularly in mass media based interventions. Ethical, statistical and logistic difficulties favour the use of quasi-experimental designs in the evaluation of mass media interventions. Indeed, some of the biggest quasi-experiments developed so far in the world were designed to evaluate health education interventions, particularly those based on mass media (Maccoby et al, 1977; McAlister et al, 1982; Farquhar et al, 1985). Recent advances in statistical techniques for design and analysis of randomised community trials (Donner and Klar 1994; Murray et al, 1994) will probably reduce the obstacles to the use of experiments for evaluating health promotion, making possible the recommendation that quasi-experiments should only be used in those exceptional cases in which there is no other option available (Flay 1986; Coyle et al, 1991; Sechrest and Figueredo 1993; Cook and Shadish 1994; Kirkwood et al, 1997).

4.5 CONCLUSION

In this chapter I reviewed the current scope, theories and methods of evaluation research practice. Drawing on the work of some theorists of evaluation research such as Scriven (1986) and MacDonald (1976) I have argued that evaluation research of health education is still very much based on the assumption that science is devoid of any value connotation. Indeed current practice of evaluation research in health education is based on models which do not included assessment of objectives as part of the whole evaluation. Due to this fact, such models are not necessarily the best source of information for the stakeholders to judge the worth of a programme. Nevertheless they are still helpful in producing some knowledge about process and effects, which contribute to the debate about the merit of the intervention.

In the last three chapters I have introduced basic concepts about health education and health promotion, TB and its control strategy, and evaluation research of health education and health promotion programmes. Drawing on these concepts I present, in the rest of this thesis, the results of the evaluation of a mass media health education campaign for TB control developed in Cali, Colombia. In the next chapter I describe this intervention and its social and political context.

Chapter 5

5. THE MASS MEDIA HEALTH EDUCATION CAMPAIGN AND ITS SOCIAL AND POLITICAL CONTEXT

5.1 INTRODUCTION

Campaigns do not occur in a social vacuum, and this health education campaign was no the exception. In this chapter I present, firstly, a description of the social and political context of the campaign, at local and national level. I draw particular attention to the notion of health promotion and social capital operating in Cali at the time of the campaign in order to clarify the objectives of the campaign and how it developed. In the second section of this chapter I present the way in which the bio-medical model for TB control operates in Cali, the mass media health education campaign and the way in which social marketing techniques were deployed in this intervention.

5.2 SOCIAL AND POLITICAL CONTEXT FOR HEALTH EDUCATION AND HEALTH PROMOTION IN CALI AND COLOMBIA

I argue in this section that health education and health promotion have a powerful role to play in Colombia in the creation of an educated public able to adopt healthy behaviours and able to participate in the creation of healthy policies. However, it requires the presence of, at least, two essential ingredients: firstly, respect for human rights and a political willingness of those with political and economic power to embrace a more open democracy. Secondly, the dismantling of the medical model of health where most of the HCWs operate. To develop this argument I describe in this section, first, the context for health promotion set by the current political and economic situation in Colombia. Second, health care reform and the current central government policy in health promotion. Third, the social and epidemiological profile of Cali. Finally, the notion of health promotion, community participation and social capital theory developed in the city during the last decade.

It was mentioned in Chapter two how some research has found that health in the negative sense was common in low income groups while health in the positive sense was more common in higher income groups (d'Houtad and Field 1984). It seems likely that perceptions of health promotion in LDCs could also be biased by socio-economic factors. Discussing health promotion as seen in India, for example, Banerji (1986) argues that:

> "The approach to health and health action has to be basically different in the South. People should not be asked to eat the cake of promotion of positive health when they do not have the bread of relief from the suffering caused by the diseases of poverty and oppression."

In the same vein, a recent editorial in a peer-reviewed journal reports that HCWs in some African settings look at health promotion as something for affluent communities:

> "cases where health promotion has been dismissed as luxury which only the richer countries can afford. Needs such as drugs and food for patients are cited as being more urgent that health promotion (and) curative services tend to be more appealing because their impact can be seen soon after an intervention" (Nyamwaya 1996).

Several factors have been proposed to explain the slow progress of health promotion in LDCs: professional jealousy about the control of the health development process, neglect by planners and policy makers in the health sector that equates health promotion with public health or health education; and lack of a sizeable pool of professional practitioners in the discipline (Nyamwaya 1996). On the other hand the discourse of health promotion can be interpreted as a challenge to the status quo and, therefore, dismissed by those whose interests could be in jeopardy. Nyamwaya (1996) reports the case of some African countries where

> "programmes in health promotion have been denied clearance by government authorities because of the alleged potential threat to political stability".

Saying that health promotion is not appropriate for LDCs is to miss the nature of health and its determinants embodied in the health promotion discourse. Health promotion, as presented in the Ottawa Charter, addresses the curative and preventive needs of people and, what is more important, aims to put communities in charge of their own development in health.

5.2.1 THE POLITICAL AND ECONOMIC SITUATION IN COLOMBIA.

Colombia is a country full of contrasts.[1] Socio-economic inequalities are perhaps, as in many LDCs, one of the most well-known contrasts. Whilst three Colombians were in the Forbes 1994 list of millionaires (excluding the drug-barons), 45% of Colombians live below the poverty level. Whilst in Cali a non-for-profit hospital—where high technology procedures such as open heart surgery and organ transplants are carried out—was opened five years ago, children still die of diarrhoea in a slum three miles away. Socio-economic inequalities have severe consequences for the social cohesion and for the economic development of the country (see chapter two, p. 33).

However, other factors also contribute to the stagnation of the socio-economic development of Colombia: corruption, inefficient governmental administration, delinquency and domestic violence, criminal impunity, persistent violation of human rights by left-wing guerrilla groups, the official army and right-wing paramilitary groups (tolerated, if not promoted by the army and the government), and an increasing demand for illicit drugs from developed countries with the ensuing economic, political and military power of the local drug-barons. The worsening during the 1980s of the social conflict created by all these factors, and the policies that the government arranged with the IMF/World Bank have led the country to an important period of political, economic and social change during the early 1990s, that has a direct impact on its agenda for health promotion.

Colombia is a parliamentary democracy and, unlike most other Latin American countries, had suffered only once from military governments—from 1954 to 1957. Nevertheless the military still has a key role in decision-making and implementing the policy of repression undertaken to deal with popular protest, leftist political movements and guerrilla groups, particularly since the mid-1920s. Indeed they have been accused, for example, of obstructing on more than one occasion the government's intention to sign a peace treaty with guerrilla groups. However, the army remains loyal to the two political parties, liberals and conservatives, who have controlled congress and the political bodies of the municipalities during the whole history of the country.

---

[1] Appendix 1 provides a summary of the history, geography, demography and socio-economic indicators of the country.

This hegemonic control of the two parties was challenged in 1986 when a political reform started the free elections of the mayors of municipalities. As a result of this reform of the political system, coalitions and political parties other than the liberal and conservatives won the elections in 8% (1986), 10% (1990), 32% (1992) and 16% (1994) of the municipalities (Velasquez 1996). This political opening was consolidated with the changes produced by the Constitution of 1991, which allowed political participation of some groups—representing ethnic and religious minorities, and demobilised guerrilla groups. This change in the political structure had very important implications for community participation, and the decentralisation of central government functions.

Contrary to what happens in other societies the Colombian social conflict has more to do with politics and less to do with economic crisis. Indeed, a very prudent macroeconomics and loans policy contribute to explaining, to a great extent, two important features of the country. Firstly, the country has never been affected by debt crisis, as other LDCs were during the 1980s. Secondly, the country has had a low, though sustained economic growth during the last 40 years. Although Colombia belongs to those countries with high human development (rank 51) according to the Human Development Index[1] (UNDP 1997), better achievements might have been produced had social investments been prioritised, particularly during the last decade.

As it was discussed in Chapter two, improvement in life expectancy and quality of life is less the result of increased Gross Domestic Product (GDP) and more the result of subsidised nutrition, personal medical services and public education, for example (Sen 1993). However, the wealth created by Colombian economic growth is not always channelled towards these type of projects (see Table 5.1).

---

[1] The Human Developed Index is produced by the United Nations Development Programme and considers three indicators: longevity (measured as life expectancy at birth), educational attainment (a combination of adult literacy, and primary, secondary and tertiary education enrolment ratios), and standard of living measured by real GDP per capita (PPP$).

Table 5.1 Trends in GNP and welfare spending in Colombia (1989-1993).

Year	Increase in GNP (%)	Welfare spending as % of GNP	% change in welfare spending
1989	3.4	7.6	-
1990	4.3	7.78	+2.36
1991	2.0	7.86	+1.02
1992	3.83	8.38	+6.6
1993	5.2	8.25	-1.55

Source: (El Espectador 1994).

Indeed, Colombian spending on welfare has been poor. Meanwhile, the budget spent on defence and security has been increased (see Table 5.2), particularly during the last 15 years, at the expense of the budget for social services (education, health, welfare, housing and community amenities) (World Bank 1996).

Table 5.2. Trends in the budget spent on defence and welfare as a percentage of the Colombian government budget (1980-1994).

Year	Defence	% change	Welfare	% change
1980	6.7%	—	44.1%	—
1994	8.1%	+ 20.9%	31.5%	- 28.6%

Source: (World Bank 1996)

The figures in Table 5.2 reflect policies implemented by the central government to deal with political problems: the low intensity war with communist guerrillas, and the terrorism inflicted by drug-traffickers. Thus far, the policy of repression—that is, the use of physical force to deal with political problems—has not achieved any positive goal, but it did help to make trauma and violence the main public health issue in Colombia (Yepes 1990). In fact, the main indicators of health conditions in the country are affected by a long history of political violence. One of the most recent examples is the murdering of more than 3.000 members of the 'Union Patriotica', a political party created in 1986 as a result of peace agreements between the government and one of the left-wing guerrilla movements. Although political differences between social groups has not disappeared as an important cause of violence, during the last three decades violence between civilians has predominated, being responsible for about 80% of the 1995 annual toll of murders (Colombian Support Network 1996). In America, violence—that is, the use of tools to cause physical pain, and even death, while the State is not in war—is not an exclusive problem of Colombia. Yet the homicide rate shows an alarming increase in the country during the last 30 years: it was 22 in 1970, 36 in 1980, 73 in 1990 and 127 per 100.000 people in 1994 (De Roux and Chelala 1994; Franco 1997).

Many factors contribute to explain this surge in violence: poverty, an extremely weak judicial system, drug-trafficking, extremely high levels of impunity, corruption at all levels in the government, military tactics of left-wing guerrillas and right-wing paramilitary groups, and the United States policy for dealing with drug-addiction. Society expects the Colombia state to deal with the roots of violence and contain the scalation of violence. Unfortunately, on too many occasions the Colombian state is the agent of violence, in a direct way by violating human rights, and indirectly by failing to deliver justice (Giraldo 1996). In January 1996, President Samper on behalf of the government, and under international pressure, admitted for the first time in the history of the country its responsibility in a human rights violation. It was the murdering of more than 100 people in a rural area of the department of Valle del Cauca, between 1988 and 1990, carried out by members of the Colombian army, police and drug-traffickers, and covered up by members of the government and the justice system (Giraldo 1996). While armed social conflict is frequently the result of loss of legitimacy of one or more political forces, in Colombia the conflict has been aggravated since the early 1980s by the loss of legitimacy of the left-wing guerrilla groups, the right-wing paramilitary groups, and the government. The two main factors contributing to the loss of legitimacy of these three actors of the social conflict are: firstly, their systematic violation of human rights and, secondly, their links with drug-trafficking or traffickers.

In this context important changes in the political and economic arena began during the early 1990s. The three most important factors contributing to these changes were, firstly, the new political Constitution of 1991. This was written by an *ad hoc* assembly, composed of representatives democratically elected, which introduced important changes in the political and judicial life of the country. Some of these changes are the direct election of local authorities, autonomy for indigenous communities, and new procedures facilitating referendums and grassroots legislative initiatives. It also locates justice closer to the citizens, and promotes empowerment of the citizens with some novel and and highly efficacious tools such as the writ of protection (Office of the Advisor for the Development of the Constitution 1993).[1] In addition, the new Constitution modified substantially the distribution of power in the state. It diminished the power of the president, gave access to Parliament to ethnic minorities, strengthened the power of the judiciary system, and backed up the process of decentralisation.

Secondly, the liberalisation of the economy aimed at shifting the Colombian protectionist economy towards a free market model. This policy is, mainly, a result of the economy models implemented world-wide by the World Bank (Bulmer-Thomas 1996; World Bank 1996; Veltmeyer 1997). While during the early 1990s this policy contributed to an increase in economic growth, it seems that it has also contributed to widening the income gap between rich and poor, to consolidating economic power in foreign hands, and to increasing the size of the informal economy.

Thirdly, the decentralisation policy—an important element of the strategy promoted by the World Bank to deal with poverty—aimed at changing the role of the central government agencies (Rondinelli et al, 1984). This model implies a more direct relationship between citizens and authorities, facilitating empowerment of civil society. The decentralisation process creates a new context for political participation and thus affects all the decisions related to community health. Although decentralisation has some advantages it can not be seen as the main solution for inefficiency in the provision of services by the State, and does not necessarily provide a better arena for community participation. Indeed, a study undertaken by the World Bank in Colombia found important obstacles—some of them quite difficult to overcome in the mid-term—limiting decentralisation, namely, patronage-base hiring, investment without regard to cost, and inadequacies in the civil service (IBRD/The World Bank 1994). Although in the early 1980s the decentralisation was used, to some extent, in order to

---

[1] Writ of protection is defined as "a sui generis legal procedure that provides fast-track, emergency measure for the protection of fundamental rights and freedoms, can be invoked without the need for lawyers nor formal legal petitions and is specifically designed to deal with particular cases of injustice and arbitrariness when constitutionally guaranteed rights have been violated." (Office of the Advisor

defuse social protest (Collins 1988) promising results have been reported recently. These results point out how decentralisation can really facilitate the empowerment processes (Fiszbein 1997).

5.2.2 HEALTH CARE REFORM AND HEALTH PROMOTION POLICY IN COLOMBIA

Currently, health care reforms are being implemented in most LDCs, in line with the World Bank policy directed at establishing a globalised free market economy. Health care reform is also being developed in Colombia following the same perspective. Its most important aim is to correct the weaknesses of the system in terms of equity in access to and efficiency of the health care services.[1] The current health care reform in Colombia is, according to Berman (1996), one of the most extensive for a middle income country in recent years. The main components of this reform are:

> "new government financing targeted to the poor, universal coverage with socially regulated health insurance, increased financial contributions of employers and employees to social health care financing, managed competition among public and private insurers and public and private health care providers, decentralisation of financial and management authority for government health activities to sub-national governments, (and) formal definition of a package of service benefits, selected based on their estimated cost-effectiveness in health improvement" (Berman 1996).

The new health care model in Colombia attempts to increase health service availability through the privatisation of services. Nevertheless, this optimistic position is in conflict with the laws of the market that will determine the provision of preventive and curative services. Experiences of countries such as Chile, well advanced in developing that model, shows that marketisation contributes to the widening of the gap between rich and poor (Hsiao 1994; Laurell and Lopez 1996).

The full implementation of the new health care model began in January 1995. In the context of this model it is not clear what the fate of health promotion is going to be, particularly when in the hands of private groups that are motivated by profit. What is more clear, so far, is the nature of the concept of health promotion that the government

---

for the Development of the Constitution 1993) intends to apply in the public health sector. To explore this, I will refer to two documents, first, a law defining health promotion and, second, a preliminary draft of the health promotion policy of the Ministry of Health. In August 1994 a law was passed providing the basic rules for the management of resources devoted to health promotion in the Plan Basico de Atencion [2] (Ministerio de Salud 1994). It defines health promotion as the combined actions of people, health services, health authorities and economic sectors aimed at improving the physical and mental health of people, and going beyond the absence of disease. The same law divides health promotion activities into those focusing on preventing disease and those related to promoting health. Disease prevention consists of activities aimed at controlling risk factors at the biological, behavioural and environmental levels. Promotion of health relates to those activities which seek the full development of individual and collective potential. Finally, the law describes the objectives of the Plan Basico de Atencion in terms of health promotion: to provide basic services to individuals, and to communities. The following health services are to be provided for individuals: immunisation, family planning, food supplements for pregnant women, and diagnosis/treatment of lepra, TB, leishmaniasis and HIV-AIDS. Services for the community are: providing information on disease prevention, control of environmental risks (air and water quality, vectors, sewage, occupational risks) and behavioural risks (lifestyles).

In February 1995 a draft document, Politica Nacional de Promocion y Prevencion (National Policy of Promotion and Prevention), was distributed internally in the Ministry of Health. It deals with health promotion policy in the mid-term (Montero 1995). The document begins by describing public health as a holistic concept that goes beyond curative approaches. Since curative approaches have been privileged in the Colombian health care system, the document spends some time in analysing health promotion as a concept. After reviewing different concepts of health promotion, the document affirms that the Ottawa Charter is theoretically sound, but its implementation is problematic at best, and unfeasible at worst, and at times engages in a demagogic discourse.

---

[1] See Appendix 1.

[2] Plan Basico de Atencion (Basic Plan of Services) refers to the minimum and essential health care

The document concludes that health promotion, in the operational context of the policy, is to be defined as 'intersectoral action' (initiatives of the health sector supported by other sectors involved in health) and actions to modify lifestyles and environmental risks. The document continues with a discussion about the conflict between the short term benefits of changes in lifestyle and the economic investments required for this. This tension contribute to explaining why health promotion has not achieved enough prominence in this health system. The document does not resolve this conflict, and indeed opts for prioritising those health promotion activities that produce results in the short term. The final part of the document lists the objectives of the health promotion policy. In keeping with the short term focus prioritised by the policy documents all of the objectives are centred on lifestyles and bio-medical preventive activities. The objectives are to be achieved through fiscal measures, information, education and health services programmes. In the same context, health education is seen as a tool in disease prevention, aiming to modify behaviours which are likely to result in disease. Finally, the document lists the activities aimed at individuals, and communities, making a very brief and poorly focused mention to the role of community participation in the solution of health problems.

This notion of health education and health promotion currently presented by the government is quite different from that presented during the government of President Cesar Gaviria (1990-1994) (Ministerio de Salud 1992). During that period, a representative of the demobilised guerrilla group M-19 was in charge of the Ministry of Health. A discourse of community participation was extensively preached in the country, based on a structuralist vision of health promotion. In line with this discourse an international conference on health promotion, centred on the role of equity in health, was held in Bogota (1992) under the leadership of the Ministry of Health, and in collaboration with the Pan American Health Office/World Health Organisation (PAHO 1996). The influence of the leaders of this line of health promotion disappeared once this political party lost control of the Ministry of Health.

At present, the health care reform seems to have increased the coverage of health care services (according to unpublished data by the Ministry of Health). However, there is

---

services package that must be provided for free to every Colombian by the government.

still a long time before the real outcome of the reform can be assessed. Meanwhile, it is clear, according to the two documents discussed in this section, that a medical model of health promotion will be championed by the government. Health education, within this perspective, is a tool for modifying lifestyles and for encouraging the use of certain health care services. Thus, creation of an educated public, and community participation in the creation of healthy policies, is not part of the current Colombian policy for health promotion.

5.2.3 HEALTH INEQUALITIES IN CALI

Cali is located in the southwest of Colombia, in the Valley of the Cauca river.[1] This valley has some of the most fertile soil in the country, and a highly technological agriculture. However, rather than being the country's grain supplier it is mainly dedicated to the production of animal food concentrates and sugar for export. This situation is best described in the words of Lang (1988):

> "The valley's landlords (...) did not bother with food crops; they exported sugar abroad and surplus labor to Cali" (p. 74).

Unlike the rest of the country, Cali has a smaller proportion of its population whose basic needs are not being met (16% in 1991) (Velasquez 1996). Cali's better socio-economic position in respect of the rest of the country is a result, mainly, of its economic development and the quality of its health care services. Indeed, Cali has achieved very important goals in terms of health care services (Climent et al, 1983; Rojas et al, 1988; Shepard et al, 1993), under the leadership of public health practitioners, and an important contribution by the private sector.

In spite of this better-off position, the problems of the city are not very different from most of the other urban areas of Colombia. In terms of mortality the profile is also quite similar to the rest of the country. Homicides, cardiovascular diseases, motor-vehicle accidents, diseases of the respiratory system, cancer and HIV infection are, in that order, the main causes of death (Duque 1994). Rates of trauma, some types of cancer, HIV

---

[1] See Appendix 2 for a summary of the history and geography of Cali and demographic information about the city.

infection and cardiovascular diseases, as in developed countries and LDCs, are higher for low socio-economic groups. Overall, the changes in the quality of primary health care services, nutrition and sanitary conditions during the last decades contributed to sound improvements in several indicators of human development such as height, and life expectancy (Dufour et al, 1994). However, these two indicators also show that, despite general improvements in well-being, social inequalities are maintained, and probably widened.

An anthropometric survey of adult women living in Cali (Dufour et al, 1994), and born between 1930 and 1966, for example, shows a regular annual increase in stature for all socio-economic strata, as would be expected in a community experiencing economic growth and better nutrition (Fogel 1997). In Cali, as elsewhere, people belonging to higher socio-economic strata are taller than those belonging to lower strata. However, during the period covered by this study (1945-1981) the gap between the shortest and the tallest has increased. A thorough account of how this social inequity is experienced by women of lower socio-economic strata is provided elsewhere (Meleis and Bernal 1995; Dufour et al, 1997).

Similarly, the current life expectancy in the city, 69.51 years, is different for each socio-economic stratum. Life expectancy ranges from 67.47 years for the lowest socio-economic strata to 76.21 years for the highest (Duque 1994). It is important to note that death by violence, which affects mainly the lower socio-economic strata, reduces life expectancy in Cali by 4.51 years (Duque 1994).

Cervical cancer is another condition in Cali where socio-economic inequalities have been well documented. Indeed the incidence rate for cervical cancer is significantly higher for women with lower income, educational level and housing quality (Cuello et al, 1982; de Sanjose et al, 1996). The extent to which socio-economic inequalities are affecting the mortality and the quality of life in Cali, as could be predicted from the work of Wilkinson (1996b) (see chapter 2, p. 32-33), is unknown. In this respect it is useful to have a look at the way in which social capital is created in Cali, the type of community participation operating in the working class neighbourhoods, and how a certain type of social cohesion is being promoted.

5.2.4 HEALTH PROMOTION, COMMUNITY PARTICIPATION AND SOCIAL CAPITAL IN CALI

In spite of the fact that the epidemiological profile of the city—where violence and motor-vehicle accidents are the main causes of mortality—makes it necessary to invest huge resources in curative services, medical preventive activity is the most important programme of the Secretariat of Public Health of Cali. This emphasis on medical prevention, and the medical leadership of the health sector, explain why the type of health promotion applied stresses the role of biological factors. An example of how this notion of health promotion has been implemented is described in detail elsewhere (Rojas et al, 1988). That paper shows a medical conception of health promotion that is still widely accepted. This model operates in Cali based on the idea that the main function of those working in health promotion, for example, is to provide preventive health services at the level of the household, and to encourage people to make use of formal medicine. Community participation, on the other hand, is considered successful when people help in developing the objectives set by the managers of a project (Rojas et al, 1988). Participation was classified by these authors, then, as poor or strong according to the willingness of community organisations to contribute to any specific project in terms of helping to build the infrastructure, offering free labour, contributing materials, helping with maintenance or helping to recruit health promoters.

This notion of health promotion and community participation has changed very slowly during the last decade towards a notion of community participation in which people are, at least, consulted. One example of this advance is reflected in the strategies applied by Guerrero, one co-author of the paper cited above, for developing his political programme as mayor of the city (see chapter seven, p. 227) (De Roux and Chelala 1994; Velasquez 1996). However, while some public health leaders appear to be more willing to accept a more direct intervention by the community in decision making, many HCWs at operational levels are less willing to do so. In a survey carried out in 1992 among all the nurses working in the TB control programme, for example, it was found that 60% (30/49) rejected the idea of the community setting priorities, or developing administrative structures for the management and control of health care services (Jaramillo et al, 1995).

Empowerment, and community participation—as discussed in chapter two—are at the heart of health promotion. They are the motor, not only for development of health but also for human development in general. In Cali, in spite of the presence of many successful grassroots projects, the development of the city has been mainly the result of top-down rather than bottom-up approaches, promoted either by the government or by NGOs supported by business and industry. Unfortunately, the community can hardly make use of the new areas created by decentralisation, such as local councils based on democratic election, for example, due to the patron-based politics, the corruption at all levels of the local and national government, and the risk to life entailed by a challenge to the political establishment (Giraldo 1996; Velasquez 1996; Ruhl 1997).

These factors contribute, to a great extent, to frustrating the aspirations, at least in Cali, of those hoping to participate in their local politics. Indeed, the issue of community participation does not look very encouraging in this city (Velasquez 1996). After analysing seven community opinion surveys carried out between 1989 and 1993, Velasquez (1996) found that people are quite aware of the problems of the city but prefer to participate in activities which deal with problems that can be addressed and resolved simply, that is, easily rewarded and not requiring a long term commitment, e.g., cleaning up a football field. Velasquez (1996) also found that people are willing to participate too in decision-making affecting their own community but they do not do so, mainly because they distrust the structures through which this participation is formally organised—that is 'Juntas de Accion Comunal' (neighbourhood association), and Junta Administradora Local (local councils).

The main complaint against these organisations is their patron-based nature, making them a tool for political leaders to manipulate on behalf of their own interests (Rojas et al, 1988; Velasquez 1996; Ruhl 1997). Another factor contributing to the low participation, that was not considered by Velasquez (1996), is the risk involved in leading or working in political projects outside the methods and principles of the two traditional parties (liberalism and conservatism). Indeed, life and well-being are at risk for those academics, professionals or common people linked with popular organisations and movements genuinely concerned with equity, human rights, and more direct forms of democracy, principles espoused by the Ottawa Charter (WHO 1986). In Colombia, thousands of members of human rights organisations, leaders of grassroots organisations, or members of political parties linked to the demobilised guerrilla groups, have being murdered or have disappeared during the last 20 years (Giraldo 1996). Although some of these murders are the result of common delinquency, most of them are carried out by paramilitary groups—partially supported or tolerated either by members of the official army or drug-barons—lef-wing guerrilla groups, state secret services or the official army. In fact, advocators of human rights have been branded by right-wing spokespersons as the diplomats of the left-guerrilla movements. The Colombian State has been found guilty on many occasions of severe violations to human rights, mainly the right to life, by international organisations and by its own judicial system. This lack of guarantees for human rights activists to carry out their work has escalated during the government of President Ernesto Samper (1994-1998), leading 'Amnesty International', for example, to close down its local office in Bogota. From this perspective, people cannot easily be blamed because their community participation rarely goes beyond the occasional support given to 'safe' projects.

However, the fact that this political violence has left Cali relatively untouched is very intriguing. Most of the violence in Cali is related to drug-trafficking and common delinquency. Indeed, there is no tradition in Cali of political movements or think-tanks advocating for social change in frames different to those set up by the local socio-economic elite. It is not a coincidence that in this city there is no organisation specialising in advocacy for human rights, or that no member of the school of public health at the Universidad del Valle, for example, was mentioned in the list of Latin American medical sociologists whose life is endangered by his or her work (Waitzkin 1998). Velasquez (1996) argued cogently that the community has been alienated by the discourse of 'civism' widely preached by local government, and the powerful economic elite.

Civism belongs to 'values and norms', one of the three basic components of social capital, which facilitates social life (see chapter two, p. 34). This component is expressed through solidarity with your neighbour, concerned about public hygiene, care for the city, and civil responsibility in general. In Cali, most people are very proud of their nationally admired 'civic values' reflected in behaviours such as queuing for public transport buses, respect for traffic rules, respect for elders and children in the streets, contributing to charities, keeping the streets tidy, or being ready to answer to government appeals for help in specific projects.[1] These behaviours help them to adapt more easily to the problems of the city. Indeed, this discourse is exploited by the local government, as can be seen in the slogans employed by the mayors for motivating people to accept and contribute to their programmes: "Cali: commitment of everyone", "Let's make Cali the first city", or "All of us are Cali". It is understandable now that a 'safe' mode of community participation is to be 'civic': to behave properly and look after the city. Meanwhile, inequalities are left untouched.

The argument of the alienation by the 'civic discourse' presented by Velasquez (1996) for explaining how community participation develops is, to a great extent, true. However, it does not explain the 'uncivic' if not antisocial behaviour of many other people who do not engage in the 'safe' civic forms of participation and contribute to the high levels of violence in the city. Their bizarre behaviour is particular intriguing once it is considered that many of the elements present in those countries with good social ties, and necessary for socio-economic development, namely, an important amount of human and social capital (see chapter two, p. 32-34), are present in Cali.

In this city, certainly, literacy levels, gender equality, investments in human capital, civic behaviour and the quality of social networks, are high above the national average. World Bank presents Cali as an example of a metropolis in LDCs of how the work of market forces have fostered development through economic growth (Mohan 1994). Following Rubio (1997) one could argue that both civic and uncivic behaviours in Cali are due to the coexistence of 'perverse social capital' along with the 'human and social capital'. 'Perverse social capital', according to Rubio (1997), is an alternative outcome to the prosperity predicted by Social Capital Theory, that occurs when the relationship between education and income disappears. He argues that the model of development based on the combination of human and social capital

---

[1] A recent case of this type of civic behaviour happened in 1997, when the community set a world record by planting tens of thousands of tree seeds for reforesting some hills in the city, following the appeal made by the government.

> "excludes the possibility that in some societies formal and traditional education can yield a low return on investment for some segments of the population, and therefore formal education may be a bad deal. Where crime is profitable and low-risk, it is easy to predict that many individuals will be inclined to indulge in criminal activity" (Rubio 1997).

The prices that drug-addicts from developed countries are happy to pay for drugs, and the inability of the Colombian government to punish those involved in criminal activities, means that many people, particularly the young, find it highly rewarding in the short term to set up criminal industries (production and export of drugs, kidnapping, bank-robberies, hired assassinations, etc.).[1] In fact, what is illegal becomes legitimised, in a complex process, by the same forces that create prosperity in other societies: trust, solidarity based on selfish interest, supportive social networks, and valuing of economic success (without regarding to the strategy employed).

On the other hand some strategies of the market economy, such as using human beings as means rather than ends, discounting, and marketing strategies such as hooking new consumers, are incorporated in these criminal industries too. In Colombia, petty to more serious criminals all acknowledge they apply discounting: they prefer trading-off 'life safety with poverty in the future' for 'wealth and prestige in the present'. In the same way that tobacco multinationals based in the United States and the United Kingdom dosify nicotine and reduce prices to hook new consumers, the drug-traffickers are, allegedly, reducing the price of drugs in order to increase their market by hooking new consumers too (The Guardian 1998).

Thousands of people attended the burial of Pablo Escobar, the infamous leader of the cartel of Medellin, because they regarded him as a hero, though he was a ruthless criminal. Many poor people still regard the leaders of the cartel of Cali and Medellin, now in jail or dead, as honourable entrepreneurs and charitable men. Once more, as Newton (1997) argues, social capital can be worked out in different ways depending on the agenda of its promoter. Thus, small wonder, as Rubio (1997) points out, that the drug-trafficking flourished first in Medellin and Cali (two of the three most

---

[1] Certainly it is hardly a coincidence that the increasing trend in homicide rates in Colombia from the early 1970s until the present mirrors the increase in illegal activities related to drug-trafficking.

industrialised centres of the country): both have a great stock of human and social capital.

This review of the Colombian socio-economic and political context supports my argument that a minimum level of democracy and respect for human rights, and reducing the influence of the values of the medical model of health in order to adapt to the new political and economic agenda, are the basic ingredients for health promotion to develop in Colombia. The idea of empowerment, dear to health promotion, requires the availability of political arenas at local and higher levels of the decision-making process. Yet, this is not enough for empowerment processes to develop. The main obstacle to these processes nowadays in Colombia is the poor situation of human rights, making community participation a risk to life, and creating a contradictory relationship with the aims of health promotion.

Indeed, being involved in certain activities, such as community participation, can be a serious threat to achieved well-being—the main goal of health promotion—and it is now hard to find people in Colombia with enough moral courage to put at risk their own achieved well-being. Though the Colombian government has taken some steps for opening up for more direct forms of political participation, there are vested interests that, either by manipulation or by intimidation through physical violence, have prevented people from making use of them. Even if the decentralisation process were to be a facilitator in that direction, those bearing corrupt political interests are keen to avoid losing control of the agenda. Unfortunately, this situation is unlikely to change in the near future since the corruption within the same government and the poor treatment of human rights abuses legitimise any attempt to tackle the problems.

On the other hand, the Colombian public health establishment operates within a medical idea of health. Changing this view is not on the agenda of health care reform. Indeed, within this reform medical preventive activities with a high cost-benefit ratio are preferred over other more comprehensive health promotion activities. This strengthens the perception that health is the ability to function, and is only the result of medical action. Who then, is going to carry the flag of health promotion in this context? The leaders of health promotion could hardly come from the medical or the management field, the current main actor of the decision-making in health care, unless they can see health beyond the boundaries of biology and efficiency.

5.3 THE MASS MEDIA HEALTH EDUCATION CAMPAIGN

The second section of this chapter describes the mass media health education campaign. Firstly I describe the characteristics of the bio-medical programme for TB control in Colombia, and how it operated in Cali during the campaign. In the rest of the section I describe the aims and objectives of the campaign; its programme theory; how social marketing principles were applied in the design and delivery of educational materials; and how the campaign was implemented.

5.3.1 THE BIO-MEDICAL PROGRAMME FOR TB CONTROL IN CALI

In Latin America, only Bolivia, Haiti, and Peru have notification rates similar to those reported in sub-Saharan Africa and Southeast Asia (Raviglione and Luelmo 1996). In Cali, as in the rest of Colombia, TB is not a main cause of death (Yepes 1990; Duque 1994). In fact, notification rates are not among the highest in the region. However, TB still places a heavy burden on this city: the 1993 annual rate of new pulmonary cases with a positive direct smear, known to the Public Health Secretariat, was 35 per 100,000 inhabitants (Secretariat of Public Health of Cali 1993). This figure, which is slightly higher than the notification rate for Colombia (Martinez 1995), places the city among the group of communities with a high risk of infection (see chapter two, p. 66).

The National Tuberculosis Control Programme of Colombia is a free health care service. The diagnosis is based on direct smear tests and the treatment most frequently used is short-course chemotherapy. According to the guidelines issued by the Programme, the disease must be suspected in every individual who has respiratory symptoms such as a cough, haemoptysis (the coughing-up of blood), or shortness of breath (Ministerio de Salud 1995). Three direct smear tests must be ordered for each suspected case, and a chest X-ray if the smears are negative (Ministerio de Salud 1995). The cost of X-rays is usually paid by the PWT. Indeed, since chest X-rays are not part of the case finding strategy, the National TB Control Programme provides a very small quantity of X-ray films to those district hospitals where X-ray facilities are available.

In Cali, the TB Programme is implemented by the Secretariat of Public Health, which makes use of the publicly funded primary health care network of the city. The city is divided into 20 districts for administrative purposes, and each district has a publicly funded district health care centre. Between three to five smaller local health care units are accountable to the district health care centre, making a total of eighty publicly funded health care units in the whole city. The district health care centres fulfil primary health care functions (immunisations, prenatal care and the monitoring of child development), 24 hour general medical care and medical services in three main specialities (gynaecology, paediatrics, and internal medicine). The district health care centre has a laboratory where direct smears for TB diagnosis are processed and analysed. Meanwhile, local health centres offer only primary health care functions, including general medicine consultancy, but they do not have a laboratory. As a result, those individuals who are required to provide a direct smear request at local centres, then have to travel to the district health centre to deliver samples to the lab. Once individuals are diagnosed with TB the treatment is provided as DOTS—they take the pills of the short-course chemotherapy scheme in the presence of HCWs who administer the treatment. Individuals select the where they are to be treated, which is usually the one nearest to where they live.

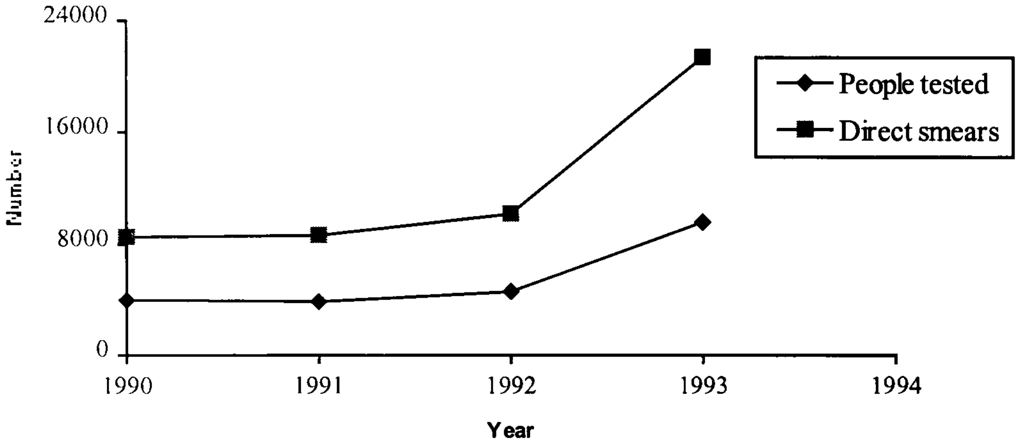
By 1992 the TB Control Programme was still not fully implemented in all the health care units of the Secretariat of Public Health. Only 17 out of the 20 district health centres and two or three out of the eighty local health care units offered diagnosis and treatment for TB. An assessment of the requirements of the TB control programme in Cali—carried out under the leadership of the LAC-Valle—identified three aspects to be addressed if the objectives of the programme were to be achieved. These aspects were: firstly, coverage of diagnostic and treatment services; secondly, managerial efficiency in the services provided by the programme; and thirdly, the education level on TB of HCWs, PWT and the community (Grupo Interinstitucional de la Salud 1992). It is noteworthy that, although the cure rate was not the highest that could be achieved, non-adherence to treatment was not found to be a serious problem in this assessment—a fact confirmed by the low level of primary drug resistance found in the city by a national evaluation of TB drug resistance carried out by the National Institute of Health in 1992-93 (unpublished data).

In 1992 the Secretariat of Public Health and the LAC-Valle launched a project addressing those aspects mentioned above (Grupo Interinstitucional de la Salud 1992). After 18 months the project achieved the proposed goals at an acceptable level (Secretariat of Public Health 1993). That is, case finding and treatment services were available in most of the publicly funded health care units, efficiency was improved in most of the district and local health centres, and a higher awareness of TB was common among HCWs (Jaramillo 1995a). These goals are reflected in higher rates of case finding activities (see Graph 5.1). They are also reflected in a reduction from 10.4% in 1992 to 6.4% in the proportion of PWT non-adherent to treatment in 1993 and, arguably, in an increase of cure rates (Secretariat of Public Health 1993).

Although it was not possible to establish the appropriate framework for assessing the impact of the TB programme in terms of cure rates—the best indicator of the impact of a programme—there are reasons to believe that the cure rate was well above 80% by the end of 1993. Firstly, the rate of non-adherence to treatment under DOTS was 6% (Secretariat of Public Health 1993). Secondly, drug supplies were reliable during the whole period assessed, which helps to prevent an increase in either relapses or non-adherence due to interruption in the treatment. Thirdly, the proportion of patients receiving therapy for treatment failure was below 5%, a reliable datum since almost all patients were screened with a direct smear at the end of treatment before being considered cured. Finally, periodic supervision showed that almost all PWT were receiving treatment under DOTS. Thus, it is possible to state that by the end of 1993 high cure rates in Cali were coupled with an increasing rate of diagnostic coverage—these being the two main goals of a TB control programme.

This effort made by the Public Health Secretariat in case finding activities was correlated with an increase in the number of notification figures for new cases of positive pulmonary TB (which jumped from 452 in 1992 to 652 in 1993), and with an increase in the proportion of PWT receiving early diagnosis. In short, the proportion of PWT having one month or less of respiratory symptoms jumped from 8% in the first quarter of 1993 to 20% in the last quarter of the same year (Secretariat of Public Health 1993).

Graph 5.1 Trends in the number of direct smears and in the number of people tested for pulmonary TB in Cali (1990-1993)



Source: (Programa de Control de Tuberculosis 1993)

There are several reasons to believe that this increase in cases was due to the project aimed at improving the programme's performance rather than to the HIV epidemic. First, the distribution of new cases by age group did not change. A higher contribution of the 15-44 age group would be expected if the increase of cases were a result mainly of the effects of the HIV epidemic. Secondly, the proportion of people co-infected with TB and HIV was 6.5% of the total of cases of TB notified to the social security health system (according to provisional unpublished results of research conducted in this system, looking at the relation between mycobacterias and HIV infection). Finally, a sentinel study in sex workers found a prevalence of HIV infection of only 1% by 1992 (Calero, 1993). Such evidence strongly suggests that the dimension of the HIV epidemic by 1993 was not big enough to alter by itself the TB notification rates in Cali.

The third aspect covered by the project, the level of knowledge and awareness of TB, was addressed by providing continued education to both HCWs and PWT under treatment. Health education for the community was considered only when the programme had achieved its goals in terms of cure rate, coverage and managerial efficiency.

Formative research carried out as part of the assessment of the requirements of the TB programme showed that the beliefs of HCWs and lay people with regard to the basic facts of TB epidemiology and the TB control programme played an important role in several ways. Firstly, TB was regarded as a stigmatising condition by PWT, the community (Jaramillo 1995b), and HCWs (Jaramillo et al, 1995). This stigma had a negative impact on the well-being of PWT and contributed, to some extent, to non-adherence to treatment. Secondly, coughing for more than 15 days was not worrying unless some other symptoms, such as weight loss or fever, were present (Jaramillo 1998). This fact contributed significantly to a delay in diagnosis, and to higher costs of health care seeking practices. Thirdly, the indications and procedures for demanding a direct smear test, as well as the costs, were unknown to lay people (Jaramillo 1998) and many HCWs (Jaramillo et al, 1995), contributing also to delayed diagnosis and to low efficiency in case finding activities.

Although TB is a disease that mainly affects people from lower socio-economic strata it seemed that the stigma attached to TB and PWT was common throughout all the social strata in Cali, according to the experiences reported to me by medical doctors treating PWT of upper socio-economic strata. In addition, the loss of employment by PWT resulting from their disease, and the difficulties faced by the social support unit of the LAC-Valle in finding a job for unemployed PWT, suggested that health education should not be addressed exclusively to groups at a higher risk of catching the disease (those with low socio-economic status) but should also be addressed to the more well-to-do.

Two facts, then, contributed to the decision to use the mass media as the appropriate means of establishing a health education programme. First, the fact that everybody infected is at risk of developing the disease during his or her lifetime—this means that at least one third of the population, mainly from lower socio-economic strata, must be made aware of the disease and its earliest symptoms.[1] And, secondly, that prejudice against PWT was widespread in the population. The mass media was considered, then, as a reasonably cost-effective tool for targeting such a vast audience. The mass media health education campaign was presented to the community as a health promotion

---

[1] TB is not a common disease even in communities with high notification rates. This fact explains why it is so difficult to get a figure of the real incidence of the disease (Murray 1994). There are no reliable figures of the prevalence of TB infection in Cali. However, extrapolating from the reported incidence (Styblo 1989) it could be assumed that just under one third of the population is harbouring the bacillus.

project. named *"Vamos a controlar la tuberculosis en Cali"* (Let's beat TB in Cali) (Rossi de Gandini and Jaramillo 1994). Its aims were to improve the quality of life of PWT and to get a better control of the disease by encouraging a demand for direct smear tests.

5.3.2 AIMS AND OBJECTIVES OF THE CAMPAIGN

The staff responsible for the TB control programme at the Secretariat of Public Health and the LAC-Valle set two aims for the health education programme (Rossi de Gandini and Jaramillo 1994):

- To reduce the prejudice against PWT.
- To promote an increase in the finding of TB cases.

The specific objectives of the media programme were:

- To increase the prevalence of people with knowledge of the epidemiological facts about TB, particularly those related to the transmission of the bacillus.
- To decrease the prevalence of people prejudiced against PWT.
- To increase the demand for direct smears in the labs of the Secretariat of Public Health, as part of the strategy of TB control deployed by the Ministry of Health.

According to the programme theory of the campaign, which I describe later, it was expected that these general purposes and objectives could be achieved by:

- Provision of information about the basic epidemiological facts on transmission.
- Provision of information about the importance of recognising coughing as the earliest symptom.
- Promotion of the demand for direct smear tests as the most appropriate behaviour for dealing with a cough lasting more than 15 days.
- Provision of information about the costs of a free direct smear and the facilities available for that test[1].

---

[1] Though the direct smear test is free, PWT have to pay other costs such as transport to the lab, time, etc.

- Promotion of the idea that people can engage in social and physical contact with PWT with very low risk of getting infected.

5.3.3 PROGRAMME THEORY OF THE CAMPAIGN

The programme theory for dealing with the prejudice against PWT (see Table 5.3) is based on the concept of prejudice, developed by social psychology, and the cognitive dissonance theory for explaining attitude change (see chapter three, p. 73). It posits that prejudice against PWT contributes to the discrimination against PWT in Cali, and that this attitude has an important instrumental function, which is susceptible to change. According to the Cognitive Dissonance Theory (Aronson 1969), prejudice can be changed by provision of information inconsistent with those beliefs that nurture this attitude. The 'expectations' and 'observational learning' components of the Social Learning Theory (see chapter two, p. 52) were used to convey specific messages promoting such a change in attitude.

The programme theory of the campaign for dealing with low case detection rate posits that this is explained (provided that passive case finding by HCWs is at an optimum) by lay ignorance about early TB symptoms and the costs of diagnosis. Provision of the relevant information using social marketing techniques would, thus, increase the demand for diagnostic tests.

The need to convey information dealing with the perceived risk of infection, the perceived barriers to diagnostic services, the perceived severity of the disease, and the model for behaving socially with PWT made of the Health Belief Model (see chapter two, p. 51) the most appropriate model for designing the contents of messages according to the programme theory. Although this model had not been tested specifically in Cali, they had proven to be successful in many projects undertaken in communities similar to Cali (Graeff et al, 1993).

Table 5.3 Programme theory of the mass media health education campaign for TB control in Cali (1994).

Problem	Explanatory theory of the problem	Objectives of the campaign	Strategy
Discrimination towards PWT	Prejudice against PWT. The instrumental function of this attitude has two components: -Cognitive (knowledge about mechanisms of transmission) -Affective (dislike of PWT)	To reduce prevalence of prejudice.	Provision of information inconsistent with beliefs nurturing the prejudice (Cognitive Dissonance Theory, and Social Learning Theory) using social marketing techniques.
Low rate of case detection of pulmonary TB	People unawareness of cough as the earliest symptom of pulmonary TB, and of a free diagnostic test for chronic coughers.	To increase the demand for direct smears	Provision of information about symptoms, and costs of diagnosis (Health Belief Model) using social marketing techniques.

5.3.4 DESIGN OF THE CAMPAIGN.

Principles of social marketing (see chapter two, p. 50) were employed for implementing the programme theory of the campaign. Information about the consumers' needs, values, access to sources of information, knowledge and attitudes is at the centre of the social marketing strategy. From the exchange theory it follows that the components of the 'marketing mix' (product, price, place, and promotion) help to identify and to control those variables determining the consumer response to the education programme. Formative research informs not only the message design but also the 'marketing mix', which is the basis of the audience segmentation. This information is essential, firstly, for designing the messages, and secondly for segmenting the whole audience into smaller groups that can be successfully targeted by these messages. Such formative research for the health education programme identified the basic knowledge, attitudes and behaviours in relation to TB among lay people of low socio-economic status. For the aims of this campaign they became the consumers, according to the jargon of marketing, since they are at a higher risk of developing TB.

Budgetary constraints for conducting the appropriate formative research made it impossible to produce a precise segmentation of the audience for this project. Two facts were, therefore, taken into account for segmenting. First, the empirical evidence showing that the stigma attached to TB was widespread throughout in all the socio-economic strata, including the HCWs and, second, the figures showing that TB is much more prevalent among the poorest. The former meant that the whole population of Cali was the target for the messages aimed at reducing the stigma. The latter meant that the population at higher risk of TB was the target for messages aimed at increasing case detection rates.

However, the costs of producing messages for these two different segments of the audience were beyond the economic resources of the sponsors of this programme. The design of the messages was, therefore, based on formative research performed only in lower socio-economic groups (Jaramillo 1995b; Jaramillo 1998), and the only criterion chosen for segmenting the whole audience was access to television, radio sets and newspapers. The audience target, then, was the population of Cali that regularly watches television, listens to the radio, and reads local newspapers. The managers of the programme assumed that the main target group of the programme, people of low socio-economic status, were widely reachable through a combination of these three mass media sources. In fact, a recent report of research carried out in Cali found that the basis for this supposition was true: the vast majority of people of low socio-economic strata own radio and television sets (de Sanjose et al, 1996), though access to newspapers is usually restricted to those from the upper strata.

Information about variables of the 'marketing mix' was obtained from qualitative and quantitative research carried out with PWT, HCWs and lay people (Jaramillo 1995b; Jaramillo 1998). A number of findings relevant for the campaign were considered. According to the objectives of the health education programme, two products were to be 'sold' (following the jargon of social marketing): the idea of the 'social acceptability of

PWT' and the 'attendance at a public health care unit whenever a cough occurs for more than 15 days'. The rationale for devising these as the 'products' to be sold has already been discussed above in the section dealing with the programme theory of the campaign.

Each one of these 'products' has a very different 'price'. Attending a health centre for a direct smear could entail only the cost of transport and time spent delivering the sample and collecting the result. However, 'social acceptance of an individual with TB' as an employee at, for example, a grocery, could entail the cost of losing an important proportion of the customers, or the social pressure from peers and relatives of the owner to fire that employee. Promotion of the product implied diffusion of the respective messages through appropriate media sources. Since television and radio sets are available in almost all households in Cali, and the time needed for watching the spots and magazines could be short, the costs of promotion were low for the audience.

5.3.5 COMPONENTS AND IMPLEMENTATION

The media campaign consisted of three components according to media source employed (see Table 5.4), and was implemented during six weeks from April 8th until May 20th of 1994. Through radio and television public service announcements the campaign presented coughing as the earliest and most significant symptom of TB. The contents of television and radio chat shows, and feature articles in newspapers gave information about the epidemiology of TB disease in more detail, as well as information about procedures to follow once an individual has a chronic cough and wants to be tested.

The television component consisted of public service announcements and chat shows devoted exclusively to the campaign. The public service announcements were two television spots of 29 seconds each.[1] One provided basic information about TB and promoted attendance at a public health unit when a cough persisted for 15 days. The other depicted aspects of life that should be normal for PWT. Each spot was aired on alternate days by the local television station, mainly during the evenings. These messages were designed primarily to affect attitudes, knowledge and the motivation of

---

[1] See Appendix 3 and video-tape enclosed to this thesis.

individuals within the community towards the disease and PWT. In the television chat shows doctors specialising in respiratory diseases, PWT, and managers of the campaign discussed in full the content of the television and radio spots. The chat shows were supported by segments of a video where PWT modelled the behaviours promoted in the campaign, based on the 'expectations' and 'observational learning' components of the Social Learning Theory.[1]

Table 5.4 Media sources and communication strategies of the campaign.

Media Source	Communication strategy
Television	
	Public Service Announcements
	Presentations in television chat shows
Radio	
	Public Service Announcements
	Presentation in radio chat shows
Newspapers	
	Flyers in local newspapers Sunday issue
	Feature articles in local newspapers

The radio component of the programme consisted of public service announcements and chat shows. One audio spot of 25 seconds was aired during the last four weeks of the campaign by three of the main radio stations inviting people to attend a public health unit when a cough persisted over 15 days. Medical doctors and the managers of the campaign were also interviewed in radio magazines. In these magazines they discussed in detail the messages of radio and television spots.

The printed component of the health education programme consisted of flyers inserted in one of the Sunday issue of two local newspapers, and two feature articles in one broadsheet and two tabloid newspapers which highlighted the main messages of the campaign.[2] Information about the procedures for taking a sputum sample and delivering it to the public health labs was offered twice in flyers inserted into newspapers,

---

[1] See Appendix 3 and video-tape enclosed to this thesis

[2] See Appendix 3

emphasising what had already been presented in radio and television chat shows.[1] The feature articles stressed the local and world-wide dimensions of the TB epidemic, and repeated the information given by television and radio spots and chat shows.

The contents and the story-board of the television spots and the video supporting the TB magazines were discussed in focus groups with members of the LAC-Valle, senior staff at the Secretariat of Public Health, and HCWs. Since the budget was small the changes suggested by these group interviews could only feedback effectively into those draft versions made prior to video-recording and printing. However, a final version of the messages in videos and prints, that took account of former criticisms, was discussed in two focus groups with community members and PWT. The criticisms made in these focus groups did not ask for substantive changes to the final version of spots and prints.

Overall, the messages transmitted through the three components of the programme conveyed information about:

- TB as a potentially fatal disease if left without treatment
- Mechanisms of TB transmission.
- Coughing as the earliest and most important symptom of TB.
- The availability of a free diagnostic test.
- Attendance at a diagnostic facility if a cough lasts more than 15 days.
- The availability of a free, safe and effective treatment to cure the disease.
- The normal pattern of life that should be adopted by PWT and their contacts.
- Developing a favourable attitude towards PWT instead of avoidance or discrimination.

5.4 CONCLUSION

In this chapter I presented, firstly, the social and political context for health education and health promotion activity in Colombia. Secondly, a described the mass media health education campaign for TB control, the evaluation of which I report in this thesis. I demonstrated that, in a country like Colombia, it is badly needed the creation of an

---

[1] See Appendix 3.

educated public by health education activity. This educated public would be in a better position to decide about which healthy behaviours they want to follow, and enabled to participate in the creation of healthy public policies. In the second section of this chapter I introduced the characteristics of the programme for TB control which operates in Cali, and the mass media health education campaign delivered in this city in 1994. In the next chapter I present the research design, methods and techniques I employed for evaluating this campaign.

Chapter 6

6. RESEARCH DESIGN: METHODS AND TECHNIQUES FOR EVALUATING THE CAMPAIGN

6.1 INTRODUCTION

Current models of evaluation research in health education and health promotion draw on quantitative and qualitative methods in order to gather evidence about the impact and process of social programmes. However, these models do not examine the objectives and goals of the programme and, therefore, provide insufficient information for the stakeholders to judge its worth. In the evaluation of a media campaign reported here, I develop an evaluation model that includes an assessment of impact, process *and* objectives. Results of this evaluation substantiate the main argument of this thesis.

In this chapter I introduce the main research questions for this evaluation, and the research strategies and techniques deployed to answer these questions. It includes a description of the text analysis I made to assess the objectives of the campaign, following the evaluation model proposed by Fischer (1980). Such an analysis of objectives is the innovation which I argue should be included in evaluation models of health education and health promotion. The research design I use in this thesis is based on the evaluation models proposed by Flay (1986) and Nutbeam et al (1990). It takes into account the elements that Fullerton et al (1995) call the "gold standard" of an evaluative exercise in health education (see chapter four, p. 118), as well as the *validation* level of the evaluation model proposed by Fischer (1980). The methods I used are quantitative and qualitative, according to the specific questions addressed by this evaluation.

6.2 RESEARCH QUESTIONS

This evaluation research has two aims:

1) To assess whether a mass media health education campaign in Cali both increases the demand for diagnostic tests for TB, and reduces the prejudice against PWT; and to assess the process of such an intervention.

2) To work out a more comprehensive model of evaluation in health education and health promotion, that includes not only an assessment of impact and process but also an assessment of the objectives set by the managers of the programme.

The first aim is an evaluation exercise typical of the current approach in evaluation of health education and health promotion programmes. It draws on the current theories of evaluation of health education I discussed in chapter four (Flay 1986; Nutbeam et al, 1990). These theories propose to assess three different stages in an education programme, corresponding to the logical path followed by the top-down approach of most health education interventions. These stages are experimentation, demonstration, and dissemination evaluation according to the model of Nutbeam et al (1990); or efficacy trials, treatment effectiveness, implementation effectiveness, and programme evaluation according to the model of Flay (1986). Although these stages could be seen as the ideal path to be followed in the development of a media campaign and its respective evaluative exercise, the low budget available for this health education programme made it impossible to carry out in full detail each one of these stages.

As a result of these constraints on the budget this evaluation is a ‘dissemination’ study, in the terms of the evaluation model of Nutbeam et al (1990), and a ‘programme evaluation’, in the terms of the evaluation model of Flay (1986). In short, this is the evaluation of a non-standardised intervention: a programme with unproved efficacy, and delivered under variable conditions of availability and acceptance. Indeed, the format, contents and effects of the messages were not rigorously tested prior to the full implementation of the project. Nor was there a powerful enough formative research able to facilitate the most appropriate audience segmentation.

Clearly, the first aim of this research is an evaluation of the efficiency of the campaign for achieving its objectives. Following the evaluation model of Nutbeam et al (1990) and Fly (1986), I formulate three research questions for reaching this aim. The first and second question address the impact of the campaign, and the third addresses the process:

1) Is a mass media health education campaign that is based on social marketing principles and cognitive dissonance theory, an efficient approach to reduce prejudice against PWT?

The sub-questions are:

- To what extent is a health education mass media approach useful in improving the cognitive component of the prejudice against PWT?
- What variables (age, sex, education, socio-economic status, etc.) correlated significantly with the prejudice against PWT before and after the campaign?

2) To what extent is a mass media health education campaign, using a social marketing approach, and based on the Health Belief Model, efficient for improving the performance of the TB control programme in terms of case finding?

The sub-questions are:

- Can the demand for screening tests be increased by a mass media campaign?
- What is the mid-term effect of the behavioural changes promoted by the mass media, in terms of the demand for diagnostic tests?

3) What was the process of the educational programme?

The sub-questions are:

- What activities were provided?
- Who provided the activities?
- How were the activities provided?

The second aim of this research is to assess the objectives behind the campaign. Here, I develop the innovation that I argue must be included in the current evaluation models of health education and health promotion. I argued in chapter four that the current models of evaluation neglect the role that values play in the design, implementation and evaluation of social programmes. Models for the evaluation of health education and health promotion have not escaped this trend. In fact, both the means and ends of health education and health promotion have been seriously questioned. Therefore, an evaluation in health education and health promotion that includes a clarification of values is extremely important to clarify and legitimise what health educators and health promoters do.

This campaign is typical of top-down social intervention (see chapter five). It was a programme designed and implemented by a small group of people at the LAC-Valle and the Secretariat of Public Health of Cali, who barely consulted the expectations of those targeted. Moreover, it was based on what was supposed to be 'good' for the population. Therefore an evaluation of this campaign must examine not only the efficiency with which it achieved the objectives, but also the values behind those objectives of the programme.

The *validation* level of the Fischer's (1980) model of evaluation (see chapter four, p. 111) examines the objectives and goals of the campaign in order to expose the values embedded in this health education programme. Thus, the fourth research question of this evaluation is:

4.) What were the values underpinning the objectives of the health education programme?

The sub-questions are:

- What are the values underpinning the current policy of TB control?
- In which model of health promotion do they fit?
- What type of empowerment was promoted by the campaign?

6.3 ASSESSING THE IMPACT: WHAT WERE THE EFFECTS?

Assessing the impact of this campaign should, ideally, be accomplished, ideally, by a randomised community trial in order to obtain results with the maximum of internal validity. However, the randomisation of exposure to a mass media campaign, essential if true experimentation is to take place, is extremely difficult (Cook and Campbell 1979;

Cohen and Manion 1994), and is not necessarily the best option in all circumstances (Tones 1997). This fact leaves quasi-experiments and single-case research as a suitable alternative in some cases.

6.3.1 ASSESSMENT OF THE IMPACT ON THE PREJUDICE AGAINST PWT.

It was expected, according to the programme theory of the campaign, that an improvement in the social acceptance of PWT would follow a reduction in the prejudice against them. Although what people say about their attitudes does not necessarily equate with what they really do, it still can predict part of the actual behaviour (Eagly 1993). However, what is unknown in this case is the extent to which prejudice contributes to the discrimination suffered by PWT in Cali. Thus, the most appropriate way to explore the effects of the campaign on the prejudice against PWT is by using a social distance scale, which gives an indication of the social acceptance of PWT (Crandall and Moriarty 1995). For this, I employed the quasi-experimental 'one group pre-test—post–test design' (see Fig. 6.1) (Cook and Campbell 1979). Although the inclusion of a control group would have strengthened this design the cost of two additional surveys was well beyond the research budget for this evaluation.

Fig. 6.1 Research design for assessing the impact of the campaign on the level of prejudice against PWT.

$$O_1 \mid X \;\; O_2$$

O = observations (surveys)

X = mass media campaign

| = to indicate that observation groups 1 and 2 are independent

The 'observations' consisted of a baseline cross-sectional survey performed one week before the beginning of campaign (pre-test survey), and a second cross-sectional survey undertaken four weeks after the end of the intervention (post-test survey). Individuals for both surveys were randomly selected to comprise two independent groups, instead of assessing the same individuals before and after intervention. The reason for doing so was that the costs entailing the follow-up of a reasonable size of individuals were considered excessive by the sponsors of the evaluation (high attrition rates were experienced by other researchers in similar surveys in Cali). The questionnaire applied in pre- and post-test surveys was the same. Based on this information one scale was built to measure lay beliefs about the mechanisms of TB transmission, and a second scale to measure the prejudice against PWT. These scales were the instruments for measuring the changes, if any, which occurred after the intervention.

The fieldwork for the surveys was undertaken by 'Analizar Mercadeo Ltd', a polling and marketing company hired by the Secretariat of Public Health to undertake this component of the evaluation. The company was chosen from a set of three, because of the price and the quality of previous surveys it had performed for public and private institutions. Once the company produced a final report with the results of these surveys (Analizar Mercadeo Ltd. 1994)[1], the Secretariat of Public Health allowed me access to the raw data to be analysed as part of this research.

Content, *criterion* and *construct* are the usual dimensions of validity to explore in a scale (Streiner and Norman 1995). The *content* of these scales is based on the qualitative research mentioned before, which was part of the formative research of the campaign, which strengthens its validity. A balance between the content validity and the internal consistency of the scale was made in order to make broad inferences about the population rather than of the individuals. Indeed, the research design (two surveys of different individuals) does not allow inferences to be made at the individual level. Since there are no antecedents of any other scales measuring beliefs about TB and prejudice against PWT, either in this city or in the scientific literature, the criterion validity is not applicable in this case. The construct validity of these scales, as with any other scale, is a dimension to be tested by the research itself (Streiner and Norman 1995). However, it is necessary to clarify that the items of the scales draw upon the contents of the health education materials delivered by the campaign (see Appendix 3).

The internal validity of this research design is problematic. Indeed, it has several weaknesses preventing us from attributing causal effects to the hypothesis it tests.

However, these were overcome in this evaluation in non-design ways (see chapter four, p. 109). The fact that both pre- and post-test samples are independent gives low statistical weight to the design since it is not possible to establish how the pre-test relates to the post-test. This weakness is reduced when both samples, with a big enough size to counteract the limits of sampling error, are randomly drawn from the same population. In addition, they must remain, after the process of selection, comparable on the basis of variables which are not going to be affected by the intervention and which are expected to affect the post-test performance (Cook and Campbell 1979). In this evaluation I paid attention to fulfil these requirements for attenuating the weakness in the research design.

However, on the other hand it is highly improbable that history, statistical regression, maturation, testing and instrumentation are real threats to the internal validity of this evaluation. The fact that no other health education events occurred in Cali during the interval between the pre-test and the post-test surveys rules out *history* as an explanation for any difference between both surveys. The very short interval between pre-test and post-test surveys (10 weeks), makes it very improbable that random fluctuations in the variables measured are significant, thereby reducing the impact of *statistical regression* as a serious threat to the internal validity. For the same reason, the short interval between surveys, it is improbable that a significantly high number of individuals had had enough new experiences of, and learnt new things about TB (other than those presented by the campaign) to make *maturation* a threat to the internal validity of surveys. The fact that the samples for the two surveys are independent, precludes the negative effects of *testing* on the internal validity. Finally, since the definition of the variables used to measure the effects of the intervention are the same for both pre- and post-test surveys, *instrumentation* is not a threat to internal validity either.

Statistical hypothesis

The statistical hypothesis for the model assessing the impact of the campaign on the prejudice against PWT states that:

---

[1] This report provided only a very superficial description of general findings without including any statistical analysis beyond counting the frequencies of socio-demographic categories (age, socio-

Ho = There are no significant differences in the scores measuring the prejudice against PWT in Cali just before the campaign started and ten weeks later.

A gain score analysis is the statistical procedure for assessing the null hypothesis in this design. This approach for the analysis is problematic for assessing changes at individual and group level when the threats to the internal validity of this design have not been ruled out properly (Cook and Campbell 1979). Since this is not the case for this evaluation, a gain score analysis is employed here to assess changes.

Techniques for evaluating the impact of the campaign on the prejudice against PWT

Sample

The strategy for assessing the impact on attitudes consists of two cross-sectional surveys of independent individuals randomly selected. The sample for these surveys was randomly selected from a frame that a company hired to undertake the fieldwork, had already built for previous surveys. This frame was drawn from updated maps of the city depicting the number of blocks and houses per block. It stratified the sample by socio-economic status in order to make it more representative of the population. Once the blocks for the respective strata were identified, a random numbers table was used to select the houses from where the individuals were selected by the interviewers. Since the focus for this research was to assess the attitude of those at risk of developing a transmissible form of pulmonary TB, for the second stage the interviewers made a list only of those people aged 15+ presently at that moment in the house. Only one person was selected per household according to the method described by Kish (1965). Whenever the resident selected declined to be interviewed, the next household was chosen by the interviewer.

The interviewers had previous experience of surveys dealing with health issues, and attended a training session where the aims of this survey were explained in detail. The field work for the surveys was conducted during the evenings, which is, by empirical

---

economic status, education level, gender).

evidence obtained by the polling company, the best strategy for achieving an insignificantly low non-response rate, as it was the case for these surveys.

The sampling error estimated for a sample of 399 (pre-test survey) and 412 (post-test survey) is 5% at a 95% confidence level, assuming a 50/50 split in the variables to be measured (de Vaus 1991). However, the sampling error in this sample is probably higher than that, since the number of people living in each household was unknown at the moment of selecting which household to visit. In spite of that, the sampling error of this sample is perhaps lower than could have been achieved using a less systematic approach.

The questionnaire.

The survey consists of 24 questions asking about basic health care seeking practices for dealing with a cough, awareness about TB, sources of information about the disease, beliefs about the mechanisms of TB transmission, feelings towards PWT, lay notions of causes of the disease, prejudice against PWT, beliefs about who is more prone to TB, what kind of people are associated with the disease, how serious TB is perceived to be, and beliefs about the ability to cure TB.[1] The same questionnaire was applied one month after the end of the intervention, with some additional items (exploring the individual's perceptions about coughing, as well as the interpretation of the messages offered by the mass media campaign). Those questions dealing with beliefs and prejudice against PWT are based on the results of the formative qualitative and quantitative research on which the campaign's messages were designed (Jaramillo 1995b; Jaramillo et al, 1995; Jaramillo 1998). The reliability of the questionnaire based on a test-retest assessment was 0.71.

Measures

The questionnaire used in the surveys (see Appendix 4) was reviewed, and those questions most relevant to this inquiry were selected for further analysis. Behavioural, sources of information, and socio-demographic variables were selected for analysis in this component of the evaluation of the impact.

Behavioural variables.

The prejudice against PWT, which is the dependent variable for this research, has two components, cognitive and affective. These two components are the independent behavioural variables. The degree of prejudice—that is, the attitude against PWT—was measured with a five 3-points Likert-type social distance scale (intention to engage in physical and social contact with PWT). The higher the score the more socially acceptable were the PWT considered to be by the individuals surveyed. That is, the individuals were more willing to engage in both social contact by sharing meals or working/studying, and in physical contact such as hugging, kissing or having sexual relationships with PWT. The scale has an internal consistency of 0.70 in the pre-test and 0.71 (Cronbach's alpha) in the post-test survey.

The cognitive component was assessed with four items of a 5-points Likert-type scale (see Appendix 5). The higher the score achieved, the more appropriate, according to the programme's theory of the campaign, were the beliefs about mechanisms of TB transmission. Appropriate beliefs, then, include the belief that TB is not transmitted by sharing meals or cutlery, by kisses, hugs, sexual relationships, or by working/studying with PWT. The scale has an internal consistency of 0.62 in the pre-test and 0.63 (Cronbach's alpha) in the post-test survey. A fifth item, asking about beliefs on coughing as a way of TB transmission was not included in the final score because of its very low item-to-item correlation. However, because of its importance it is analysed as an independent variables.

Five items of a 3-points Likert-type scale where used to assess the affective component of the prejudice against PWT. The higher the score of the item, the more positive the feeling. A positive feeling was to have solidarity with PWT but not fear, pity, anger, or loathing. The scale has an internal consistency of 0.49 in the pre-test and 0.46 (Cronbach's alpha) in the post-test survey. Because of this low internal consistency, the individual items were used as independent variables.

The impact of the campaign on the prejudice against PWT, and on its cognitive component, was assessed by measuring change in the respective scores between the pre-

---

[1] See Appendix 4

test and post-test survey. Use of gain scores for measuring change has been controversial since the early 1970s when Cronbach and Fury (1970) concluded that this type of measure was unreliable. Although this conclusions has been questioned since the late 1970s, it is only recently that some authors have demonstrated mathematically that valid measures of change using gain scores can be obtained from instruments with a very low reliability (Collins 1996), this challenges the way in which the concept of reliability is modelled by the classic test theory (Williams and Zimmerman 1996). Williams and Zimmerman (1996) demonstrate that the reliability of gain scores depends on the reliability of pre-test and post-test scores, its correlation, and the ratio of pre-test and post-test standard deviations. In fact, reliability as the *sine qua non* for validity, has also been questioned by some authors within the social sciences who propose a more social constructivist basis for measurements in psychology and sociology (Moss 1994; Andersson and Granberg 1997). Although this is not the place for an in-depth discussion about these theoretical aspects of reliability, this research accords with the idea that gain scores are appropriate for measuring change.

Socio-demographic variables.
Gender, age, education, income, and occupation are important factors related to knowledge of and attitudes concerning health issues. For this evaluation I consider gender, age, education, and place of residence (a proxy for income and socio-economic status) to be socio-demographic variables relevant for understanding the impact of the campaign on the prejudice against PWT.

Education, income, and occupation are traditionally used to differentiate the socio-economic status related to morbidity, mortality and the use of health care services. However, the high proportion of people sub-employed and involved in the informal economy, even those holding higher education degrees, makes unreliable the use of occupation and education as a measure of income. Instead, the place of residence has for a long time been used in Cali by the local government and utility companies as a reliable proxy of socio-economic status. Findings in cancer epidemiology and urban planning research support this practice. In Cali, Mohan (1984) has established that the location of residence is a statistically significant factor for predicting the income of people. He found that location of residence "was a proxy for family background, educational quality and other similar determinants of earnings" (Mohan 1984). This was confirmed by a case control study (de Sanjose et al, 1996) which looked at socio-economic differences in rates of cervical cancer in Cali, a condition strongly associated with low socio-economic status both in this city (Cuello et al, 1982) and the rest of the world. This study found that the income reported by the interviewees and the reported availability of amenities such as radio, television and video-recorder sets were not able to predict the risks for cervical cancer (de Sanjose et al, 1996). Because of these findings, both educational level and the place of residence were chosen in this research as the indicators of socio-economic status.

The socio-economic stratification employed by the utility companies and the local government in Cali consists of seven strata. The highest income is attributed to those people living in neighbourhoods belonging to stratum six, and the lowest for those living in the slums or stratum 0. Because of the difficulties the interviewers experienced in interviewing very rich households (with high rates of people declining to be interviewed) and in very poor areas (due to insecurity), people belonging to these socio-economic strata were not adequately represented in the samples drawn up the polling company. The socio-economic stratification established for the sample consists, then, of four strata—high, upper-middle, lower-middle, and low. They are closely related to the fifth, the fourth and the third, the second, and the first strata, respectively, employed by the local Government.

Source of information variables.

One of the items in the questionnaire asked people to list the sources of their information about TB. Formal and informal networks of communication were the two main categories selected for exploring what sources people used for acquiring information about TB. Formal networks of communication were considered to be the mass media organisations (local and national newspapers, and the television and radio broadcasting networks); health care institutions and the education centres of formal and non-formal education. Friends, relatives, and direct contact with PWT were considered to be informal nets of communication providing information about TB.

Data handling and statistical analysis

Initially, the answers were re-coded, when necessary, for univariate and bivariate analysis. Items of the attitude scale and its cognitive and affective component were re-coded to make consistent scores, and re-scored to make equally weighted scales according to standard procedures (de Vaus 1991). Goodness of fit chi-square tests were performed to assess the representativeness of the survey samples for the whole population, and to assess how comparable the samples were with each other. A univariate analysis of the responses to those questions relevant for the aims of this thesis was undertaken. The criteria for sorting out correct and incorrect answers to those questions dealing with beliefs about TB were taken from the texts of messages delivered by the campaign. Those texts were based on the state-of-the-art of TB epidemiology at that time (Bloom and Murray 1992).

Goodness of fit chi-square test was performed on each item of the scales measuring the prejudice against PWT, and its cognitive and affective components, in order to find out how significant were the changes in the answers before and after the campaign. The differences in scores between the categories of variables were tested by a one-way analysis of variance (ANOVA). Categorical variables were dummy-coded before performing a multiple linear regression in order to identify those variables predicting the prejudiced attitude towards PWT. Goodness of fit chi-square test was performed using Epi Info 6.02 software (Centers for Disease Control and Prevention and World Health Organisation 1994). All the other statistical procedures were performed using SPSS 6.0 for Windows (SPSS 1993).

6.3.2 ASSESSMENT OF IMPACT ON THE DEMAND FOR DIRECT SMEAR TESTS.

For this evaluation a quasi-experiment, instead of a randomised community trial, was the most appropriate way to assess the effects of the campaign on the demand for direct smears. In order to understand why a randomised community trial was not possible, it is necessary to take into account three factors.

Firstly, those communities suitable for participating in such a randomised trial should have, as minimum requirements, public health institutions fully committed in running an efficient TB control programme, as well as an appropriate mass media network. It is enough to say that by 1994 only two or three cities, including Cali, were running an adequate TB control programme in Colombia (Jaramillo 1994). Secondly, the Ministry of Health, which in the past had implemented health education media campaigns on many occasions, and which has the power and resources to improve the performance of the TB control programme, lacked the political will and, perhaps, the resources to engage in such evaluation. Thirdly, this health education programme was the initiative of local institutions which lacked the power to fulfil the functions of the Ministry of Health mentioned above, and also lacked the capacity and the resources to engage in a demanding activity like a randomised community trial.

Assessing the effects of the intervention on the demand for direct smears requires an analysis of the changes in this demand. This was accomplished by assessing the total number of direct smears stained in the laboratory network of the TB control programme, which was based on the fact that the demand for smears was adequately met by labs. Surveillance for this indicator covers one year before and after the intervention, in quarterly intervals, according with the 'simple interrupted time series with a non-equivalent no-treatment control group time series design', as represented in Fig. 6.2 (Cook and Campbell 1979). This design aims to assess the immediate and the mid-term effect of the media campaign.

Fig. 6.2 Research design for assessing the impact of the campaign on the demand for direct smears.

Cali O_1 O_2 O_3 O_4 O_5 X O_6 O_7 O_8 O_9 O_{10}

Risaralda O_1 O_2 O_3 O_4 O_5 O_6 O_7 O_8 O_9 O_{10}

O = observation
X = mass media campaign
---- = to indicate that groups are not randomly formed

The control group I choose is the population of Risaralda, a department bordering the north of the department of Valle del Cauca. This department is similar to Cali in terms of health care services, epidemiological profile, and quality of the TB control programme.[1] Although the whole population of the department of Valle was exposed to the media campaign there are several reasons for comparing Cali, the capital of this department, with the department of Risaralda.

First, the numerous local radio stations and some local newspapers made the exposure of the population of Valle to the campaign less certain than the exposure of those living in Cali. Secondly, the reliability of surveillance data on TB for the department of Valle was not as good as it was for Cali, lessening the quality of the evaluation exercise. Thirdly, the public health services of the department of Valle were not in a position to meet a potential increase in the demand for direct smears, making it difficult to measure the real effect of the campaign on the demand for tests for TB. Finally, the number of tests carried out in Pereira, the capital of the department of Risaralda was too small for an adequate comparison with Cali.

One threat to the validity of selecting this community as a control group was the risk of having a substantial amount of people exposed to the campaign. Although Risaralda was not reached by Cali's television and radio broadcasting services at the time of the health education programme, people travelling between these two departments could contaminate the control group. However, I consider this interchange between control and intervention group —which is mainly concentrated on the border between both departments, 200 Kms. to the north of Cali—not big enough to alter the results of the evaluation.

Although the 'single time series design' has the usual threats to internal validity of the quasi-experimental designs (maturation, statistical regression, history, instrumentation, and testing), it is a design that puts the best possible control on them (Cook and Campbell 1979), thus making it more easier to interpret the findings.

---

[1] See Appendix 2

History , the real major threat to the internal validity of this design, is controlled by adding a time series of a non-equivalent no-treatment control group that is comparable enough in terms of the characteristics of its population—that is, the department of Risaralda. The new design is the 'simple interrupted time series with a non-equivalent no-treatment control group time series design' (Cook and Campbell 1979). A set of observations prior to the intervention allow the evaluator to assess the presence of any *maturation* process. The effects of *seasonality*, that is, a cyclical trend, is another threat that can be identified provided long enough series are available. The effect of *regression* in this design can be assessed by observing the pre-test trend in the independent variable. *Instrumentation* is not a threat in this evaluation since the data were collected and processed—in both the intervention and control group during the times observed before and after the intervention—following standard procedures established by the National TB Control Programme of the Ministry of Health. Nor is *simple selection* a threat to validity since there was not a demographic change within the intervention and control groups that could alter significantly its composition during the times observed. For all the reasons presented above, this is a design that could make interpretable the findings in order to assess the impact of the campaign on the demand for direct smears.

Statistical Hypothesis

The statistical hypothesis for the model assessing the immediate impact of the campaign on behaviour states that:

Ho = There is not a significant difference in the number of direct smear tests processed in the laboratories of the Secretariat of Public Health of Cali between the quarter of the campaign and the previous four quarters.

Because of the research design *pre-test and post-test sensitisation* are not plausible threats to the external validity of this evaluation: two different sets of individuals were interviewed in the pre- and post-test surveys. The *Hawthorn effect* is a well-known threat to internal validity that happens when individuals are predisposed to respond positively to an intervention because they are aware of being the targets of treatment and evaluation. Although it is impossible to rule out some leakage of information about the campaign to the public, this was restricted only to those closely involved in the intervention, making it extremely improbable that the information was diffused in the rest of the population. An *explicit description of the experimental treatment* appears in the second section of chapter five and in the results of the process evaluation, making it possible for any reader to reproduce the intervention delivered to the community.

Finally, *experimenter effects,* and *interaction of history and treatment effects* are also important threats to the ecological validity of this evaluation. The capacity of the bodies delivering the campaign for recruiting the support of the private sector, mainly the mass media managers and owners, means that the effects of the intervention can not be generalised to those communities whose respective bodies lack this capacity. Indeed, the campaign was presented to the community with the endorsement of the Secretariat of Public Health and the LAC-Valle. It should be noted that in Cali there is a relatively long tradition of media-based interventions sponsored by the local government and NGOs, particularly during the years before this media campaign for TB control (World Bank 1997). Most of these aim to promote certain civic values, and are embedded within the discourse of social capital that the local government, several NGOs, and the socio-economic elite of the region strongly promote. This therefore creates an environment where the target of the intervention is more susceptible to respond positively to a media campaign.

Techniques for evaluation of the impact on demand for direct smears.

I assess the impact of the campaign on the demand for direct smears, using a quasi-experimental model. Trends in the number of direct smears carried out in the laboratories of the Secretariat of Public Health, the intervention group, are compared with the trends of the same tests carried out by the laboratories of the Departamental Secretary of Risaralda, the control group.

The epidemiological surveillance system for TB in Cali and Risaralda report their results in the same format provided by the National Programme for Tuberculosis Control. Both systems use the same definitions in the gathering of data. The supervision of those HCWs appointed to collect and process the data is based on the same criteria of quality assessment. In fact, the model of TB control of Cali is almost completely based on the model successfully developed in Risaralda during the 1980s. These facts make feasible and appropriate any comparison between both populations.

Data for this component of the evaluation can be analysed either by visual inspection or statistical techniques (Kazdin 1984). For statistical analysis of time series ARIMA modelling is the current procedure of choice, though it requires a large number of observations (Cook and Campbell 1979; Orwin 1997). What approach to use in the analysis of a data set depends, then, on the type of data available, the number of observations, and the effects achieved by the intervention under evaluation. Kazdin (1984) argues that visual inspection is the most obvious approach to use in situations where the effects are very strong. One of these situations is, for example, when the variable observed reaches a level that was not present before in the range of the baseline phase, as a result of a high rate increase during the intervention phase (Kazdin, 1984). The number of observations available for this component of the evaluation, less than ten observations before and after the campaign, precludes the use of ARIMA. Instead, I use visual inspection, following the criteria proposed by Kazdin (1984).

Visual inspection consists of using specifiable criteria for data displayed in graphics and meeting specific requirements in order to make judgements about the relationship between the intervention and the behaviour observed (Kazdin 1984). The requirements to be met by graphs deal with scale units, arrangement of the axis, and format (Parsonson and Baer 1978). The criteria for assessing the graph relate to the magnitude (mean and level) and rate (trend and latency) of changes (Parsonson and Baer 1978; Kazdin 1984). Changes in mean refers to the average of the independent variable in the time or period observed. Changes in level refer to the variation in performance from one phase to the next one—performance during the pre-test period compared with performance during the intervention period, for example. Changes in trend deal with consistent variations in one direction over time. Latency of the change deals with the relation between changes in performance and the time lapsed between one period and another.

Population validity and ecological validity are two different but complementary notions of external validity considered in the evaluation of the impact of the campaign (Mertens

1997). Population validity deals with the extent to which the research findings can be generalised based on the results of the sampling techniques employed. Ecological validity deals with the extent to which results can be generalised from the environmental conditions within which the research was carried out, and applied to other settings. The population validity for the evaluation of the impact of the campaign is discussed in chapter seven (p. 188).

Several threats to the ecological validity of research findings, described by Mertens (1997), deserve discussion in this evaluation. *Multiple-treatment interference* is an important threat to external validity in this evaluation. In fact, the evaluation of the campaign is assessing two treatments: one treatment aims to increase the demand for direct smears, and a second treatment aims to reduce the levels of prejudice against PWT. Although both treatments are apparently unrelated, the prejudice against PWT itself, and the beliefs about mechanisms of transmission might be related to the knowledge about TB, particularly its early symptoms and the diagnostic procedures. This makes it difficult to assess the precise effects of each treatment.

6.4 ASSESSING THE PROCESS: WHAT WAS DELIVERED AND HOW?

For Nutbeam et al (1990), it is in dissemination studies, such as the evaluation of this campaign, where process evaluation must be fully deployed. Indeed, the analysis of the constraints and facilitators of the project are fundamental to explaining the results and replicating the project in another setting. The best way to achieve these goals is to look at availability and acceptance, according to Flay (1986). Availability is the extent to which the target audience can reach the services or products delivered by the intervention. Acceptance is the extent to which the audience target is receptive to the intervention's proposal. Thus, the design of process evaluation for this health education programme is based on the model of health education evaluation proposed by both authors, who consider four basic aspects in process evaluation: implementation, programme exposure, network analysis, and programme acceptability.

6.4.1 PROGRAMME IMPLEMENTATION

This assesses the conditions, providers, audience and effort required in relation with the treatment provided. It includes an assessment of availability—that is, what was eventually received by the target audience. An account of conditions, and the effort required for the providers to implement the programme, is based on a direct observation of the whole process for designing and implementing the campaign. Textual analysis of the educational materials assesses the contents and format of the final messages available for the audience. A qualitative approach for working out this component of the process evaluation is all the more appropriate for understanding the nature of the implementation process. It is the proper understanding of how the aims of the health education programme were accomplished that makes the evaluation useful for people in other settings trying to pursue similar aims.

Two types of data are used for assessing the implementation of the campaign. Firstly, the conditions, providers, and effort required for carrying out the objectives of the campaign, and secondly, what was received by the audience. The source for the first type of data is information recorded by myself in notebooks. This data is qualitative, according to the categories relevant to this component of process evaluation. The second source of data is the health education materials employed in the campaign (images and texts employed in the television and newspapers), which are analysed following the criteria proposed by Ong et al. (1996).

6.4.2 PROGRAMME EXPOSURE

This aims to measure the extent to which the target community was exposed to intervention. An assessment of exposure to the media, a strategic piece of information for media programmers, was obtained for most of the television programmes presenting the main health education messages. It consists of cross-sectional audience ratings, carried out by a company specialising in this activity, and covering two one-month periods that include the six weeks of the campaign. Although there are not available the figures for the audience ratings for all the television programmes presenting the campaign's messages, and although they did not exactly cover the six weeks of the campaign, they do give an approximate measure of the exposure to the television component. However, this is not the most valid measure for generalising about the real exposure to the campaign within the community. A more appropriate measure is obtained from the exposure to the campaign (including television, radio and newspapers) reported by those individuals interviewed in the post-test survey. The validity of this measure is determined by the error sampling of the post-test cross-sectional survey.

Although process evaluation is mainly a descriptive exercise based on qualitative data, programme exposure is better described in quantitative terms by audience surveys. Audience surveys are extremely expensive procedures providing strategic information for commercial and marketing purposes. Therefore the gatekeepers of this information are not readily willing to share it, as was the case for this research. In fact, it was only possible to obtain data for television audience ratings, eventhough, the two main radio network stations and one of the newspapers participating in the campaign also perform regular audience surveys. The television audience ratings for those magazine shows dedicated to the campaign were produced on the basis of household surveys by Nielsen—a multinational company that specialises in media audience surveys and has more than ten years of experience in the country.

Unfortunately Procivica, the television company hiring Nielsen for audience surveys, handed me only aggregated data. That is, the average of audience ratings for each day of week during periods of four weeks rather than ratings for each day. This fact reduces the validity of the survey in determining the audience on those days that the television magazines were presented. Audience surveys, then, can only give us some evidence on what proportion of households had television sets on at the time of the programmes featuring TB information, and what proportion of the householders watched this programme.

However, these data can be complemented by data obtained by the post-test evaluation survey used to assess the impact of the campaign on the prejudice against PWT. One of the questions in this survey asked, without prompting, whether the campaign was heard on radio, seen on the television, or read about in newspapers. The validity and reliability of the audience survey, and the post-test survey are very different. In the audience surveys, the interviewer listed to the householder the television programmes of the day; in the post-test survey (conducted one month after the end of the campaign) the interviewees received an open question, thereby introducing a memory bias. In fact, the data of the post-test survey only indicates what proportion of the whole population remembers being exposed to the campaign.

6.4.3 NETWORK ANALYSIS

It assess if the messages were diffused throughout the target group of the health education programme. Qualitative methods were used for this objective. The public health care centres were chosen as the most accessible place for monitoring if the messages were reaching the audience. Group interviews were carried out at least four times a week, with different HCWs each time, during the six weeks of campaign. Budgetary reasons meant that a convenient sample was chosen as the best approach available for the aims of network analysis. This design and the sampling technique employed are obviously very weak for making causal inferences and generalising on the process of the diffusion of messages, but for the aims of the evaluation it still helps to answer the question of whether the messages were diffusing or not.

It was, therefore, possible only to carry out a rough monitoring of how the messages diffused through those communities belonging to the medium and low socio-economic strata covered by the public health care system. As part of the periodic supervision of their activities a meeting with the HCWs appointed to the TB control programme at each district health care centre was held every month—that means that around five nurses were interviewed daily.

During these meetings the HCWs were asked, in an unstructured way, if people were acknowledging the campaign and how they were reacting to the messages. I took notes from these interviews for further analysis. This non-systematic approach to network analysis make this part of the process evaluation reliant more on anecdotes than on evidence systematically collected. The validity of this approach is thus quite low because it gives only a general view about the diffusion among those more likely to be receptive to TB information, namely, PWT and the HCWs of the TB programme. Despite this threat to the validity of the findings, these notes can still make a contribution to the process evaluation and, therefore, to an understanding of the impact of the programme.

6.4.4 PROGRAMME ACCEPTABILITY

This refers to the level of acceptance by the target community of the methods and contents of the health education activity. Perceptions of the campaign are obtained from group interviews held with lay people and HCWs, using a convenience sample. These interviews were undertaken just after the end of the campaign. Obviously, a qualitative method does not help to produce generalisable conclusions about the programme acceptability, but they do give an insight into the way that people experienced the messages, and also helps to understand in part the impact of the health education programme.

Group interview methods is currently one of the qualitative techniques used most frequently in the social sciences. Coreil (1995) provides a useful taxonomy distinguishing 4 different types of group interviews: consensus panel, focus group, natural group, and community interview. Since it is not common in the field to keep a clear boundary between each of these techniques, she proposes that the researcher provides a detailed description of the strategy applied in the interview rather than using the generic and sometimes misleading name of 'focus groups'. This description must include details of: sample design; the number of participants and the methods by which those participants were selected; how the topics were introduced, how the interview was conducted; and how the data were collected and analysed.

Seven group interviews were undertaken in this research in order to assess the opinion of people about the campaign, and how they experienced the messages delivered. The interviews were carried out during the first five weeks after the end of the intervention. Participants were lay people (four groups), nurses (two groups), and the HCWs of occupational health units of private companies (one group). None of the participants attended any of the group interviews previously undertaken during the formative research for the campaign. The ideal sample design for the type of assessment planned should include people belonging to the six different socio-economic strata of the city. However, this was not feasible because people of higher socio-economic strata were less accessible. Due to the fact that HCWs were included in the interviews carried out during the formative research, it was considered appropriate to undertake group interviews with them after the intervention.

The size of the groups ranged from eight to fifteen members. All of them participated spontaneously in the meeting. Unlike the group of nurses, and the group of HCWs in occupational health units, none of the members of the lay groups had met before the discussion. Three groups of lay people were clients of three different district health care centres. They decided to attend the interview after an invitation from a nurse to all those present in the waiting room of the public health centre. The fourth group of lay people were residents of a *barrio* (working-class neighbourhood) who were invited by leaders of a local youth organisation. The two groups of nurses were invited by their respective chief nurses, and the group of occupational HCWs came from the occupational health programme of the Institute of Social Security. None of the HCWs was involved in TB control activities at the time of the interview.

The group interviews were held in conference rooms at district health centres, communal buildings, and the Institute of Social Security. All the participants in the groups were aware of the topic of the meeting, but none of them knew the agenda of the meeting in advance. The group interview was not attended by any of those who invited people to the meetings, except for the interview held in the *barrio.* The group interview was conducted at all times by myself. The agenda was the same for all of the meetings. After an initial self-introduction by the interviewer, the topic of the meeting was presented. People were invited to share their knowledge about TB, initially with open questions, and later with vignettes prompted by the interviewer. They were then questioned about the source of their information.

All those able to recall the spots and messages broadcast by television and radio some weeks before were asked for their opinions of the media campaign. Later, a video-tape record of the television spots used during the media campaign was shown as a prompt to those who could not recall spontaneously any of the informational activities of the campaign. They were questioned again about their impression of those messages, and about the reaction within their household and group of friends. Before the end of the meeting the participants received clear information about TB in order to remove any doubt or confusion that arising from the discussion. The discussion was recorded in note form after the interview was ended, and its contents were reviewed with an assistant who attended the discussion.

6.5 ASSESSING OBJECTIVES: WHICH VALUES UNDERPINNED THE OBJECTIVES OF THE CAMPAIGN?

In order to answer this question I will draw on the model of evaluation proposed by Fischer (1980), as briefly presented in chapter four (p. 111). For the aims of this research I am considering only the first two levels of his evaluation model, namely, *verification* and *validation*. I am not using either of the other two levels, *vindication* and *rational choice,* as they require the evaluator to defend a particular value and its respective system of values which, is an exclusive task for the stakeholders of the programme and not for the evaluator. Thus, a *descriptive* rather than a *prescriptive* approach is taken for the assessment of the values underpinning this campaign.

In the context of a democratic society, the best service that the evaluators can offer is clarify the issues at stake rather than to identify with or promote any available political option. This is what should be meant by referring to the impartiality of the evaluators. It does not imply that they deny the existence of their own political position with respect to the evaluand, or that because of this position a bias might not be operating along the whole evaluation process. Evaluators can present a judgement at the verification level, that is to say: 'yes, there is strong evidence that the programme fulfilled its objectives'. They can also present a judgement at the validation level: 'these are the values supporting the objectives of this programme'. Yet it is up to the stakeholders and to the managers of the programme to make the final judgement on the merits of the programme, and to take a decision based on the elements presented by evaluators. Whether the individuals who carried out the evaluation participate or not in the final judgement and in the decision making process is a result of their rights as any other stakeholder, and not as a result of their position as evaluators.

Validation, the second level of the evaluation model proposed by Fischer, aims to clarify the final criteria or objectives selected by the evaluator of the programme to judge the merit of the intervention or the social programme. The procedure for working out this level consists of a series of questions addressing the reason for choosing a specific criterion of merit. The answers to each of these question must have an empirical basis. The procedure drives the evaluator from the realm of objectives, that is programmes, to the realm of goals and policies. At some point, when the *validation* reaches the analysis of the policy behind the programme, the criteria selected can no longer be justified on an empirical basis. It is at this stage that the values underpinning the programme emerge.

The reasons for supporting specific criteria or objectives and, therefore, a policy, are identified by answering specific questions dealing with the three components of the *validation* procedure. The first component is the political context of the programme under evaluation. The objectives of the programme are not developed in a vacuum by policy-makers, they are heavily influenced by the obstacles and facilitating factors determined by the socio-political context where the policy was set up. By defining the socio-political context, it is possible for the evaluator to start the exercise being aware of the specific political orientation within which the programme under evaluation is embedded. In this evaluation the description of the socio-political context of TB control clarify the specific political orientation wherein the media campaign is located, and gives direction to the investigation at the *validation* level.

In the second component the evaluator examines in detail the objectives of the programme and, by exploring its empirical justifications, can locate the goals and primary ends of the programme. In the third component the evaluator examines the empirical basis supporting these goals, the definition of the objectives and goals of the programme, the definition of the problem the programme aims to tackle, and the empirical justifications for tackling the problem with this programme and not with another.

6.5.1 TEXT ANALYSIS FOR ASSESSING THE OBJECTIVES OF THE CAMPAIGN

The political data for establishing the political context of this programme are, first, a description of the political actors (individuals, pressure groups, governmental and non-governmental agencies, political parties) involved in the identification and selection of the criteria for judging the worth of the mass media health education campaign. Second, their motivations, interests, goals and objectives, and their real power and influence. Third, the beliefs and values of these actors, which can be very widely, even at the ideological level. Finally, the resources (money, knowledge, social connections, information) available to the political actors, deriving from their real power and influence.

The data for the second component are the justifications made by public health practioners and epidemiologists for defending the objectives of the bio-medical model for TB control. Fischer (1980) gives an elementary example of how to work out this second component of the validation by referring to the evaluation of the Head Start programme (a project in education carried out in the United States and encompassing health care, nutrition, and community initiatives):

> "Judgement: the educational curriculum is a good one.
> Question: Why?
> Answer: Because it provides these disadvantaged children with socially relevant experiences.
> Question: But why does providing socially relevant experiences for such children make it a good educational curriculum? (...)
> [Answer]: ...because the goal of education is to train children for entrance into society.
> [Question]: ...but why is preparation for a role in society the purpose of education?
>
> (...) a fully justified answer to the question of validation requires proof showing that not only this particular evaluator but every evaluator is justified in adopting social relevance as a criterion for judging an educational curriculum such as Head Start" (p. 123).

This example shows how an evaluation is not complete just by stating a judgement linked to the extent to which the goals were achieved. It is by questioning objectives and policies that the stakeholders and managers of the programme can gather more elements from which to make a judgement. The values behind the programme are one of these elements. As mentioned before, within the *validation* procedure, the value is identified once the evaluator can no longer find an answer that can empirically justify one criterion as better than another. Fischer (1980) asks that we examine the nature of this very last criterion and, thus, move to the third component of the *validation* procedure.

For this third component Fischer (1980) proposes four different probes, namely, relevance, situational context, multiple goals, and precedence. Each of these has a list of basic questions that indicates the type of data required for supporting or rejecting a criterion. Relevance refers to the extent that the policy goals of TB control can be "grounded by an appeal to a higher principle(s) or established causal knowledge" (Fischer 1980) (p. 208). Questions pertinent in this probe are:

> "is it possible to secure agreement on the relevance of the goal(s) by an appeal to a higher criterion-goal, rule or principle?; are there any empirically established consequences of causal relationships associated with the use of this criterion that can be offered in its support?" (Fischer 1980) (p. 208).

Situational context refers to the extent that "circumstances in the situation which require that an exception be made to the policy goal or criterion" (Fischer 1980) (p. 208). In this case we are dealing with the evaluation of an intervention aimed not only at improving TB control, but also educating people. Pertinent question are, then,

> "is there anything about the political situation or policy context that raises questions about the relevance of this criterion?; are there economic and social facts and norms which suggest that the situation has not been defined properly?" (Fischer 1980) (p. 208).

The criteria for judging an intervention aimed at controlling TB are not necessarily the most appropriate for judging an educational programme. Thus, Fischer (1980) presents the 'Multiple goals' probe, which deals with the presence of "two or more goals relevant to the situation" (Fischer 1980) (p. 208). This is explored by asking

> "is there an urgency or exigency in this particular policy situation which suggests that one of the criteria is of more immediate importance?; Can it be shown that one of these criteria has already been provided for through some other variable in the policy situation?; Or, can the conflicting criteria be fulfilled sequentially through inter-related policy contexts or continuity over time? (...) are there any policy principles that assist in determining the appropriate criterion in this particular situation?" (Fischer 1980) (p. 208).

Precedence asks if the "decision-maker's value system places higher precedence on one of the conflicting criteria? Or does it lead to contradictory prescriptions in this situation?" (Fischer 1980) (p. 208). Other questions are:

> "Which ideal(s) does each decision rule emphasise and which does minimise: maximum satisfaction, liberty, community, etc.?; is there fundamental disagreement here, which brings further inquiry to a halt?" (Fischer 1980) (p. 208).

Once the three components of the validation level are accomplished the evaluator can identify those values underpinning the objectives and goals of the programme. When the evaluator presents these findings, together with those of impact and process, the stakeholders are in a better position to judge the worth of the programme as a whole.

6.6 CONCLUSION

The main argument of this thesis is that an evaluation of health education has to provide to stakeholders evidence about the impact, the process, and the values underpinning the programme. In this chapter I introduced the main research questions I use for evaluating this mass media health education campaign. This evaluation supports the main argument of this thesis. Table 6.1 presents a summary of these questions and of the research methods and techniques I use.

For assessing the impact of the campaign I use quantitative methods and techniques. For assessing the campaign's impact on the prejudice against PWT I use a pre-test—post-test research design. A random sample of citizens was surveyed using a social distance scale measuring prejudice before and after the campaign. For assessing the impact on the demand for direct smears I use a quasi-experimental design with a suitable control group. For assessing the process I rely on the information gathered while I was member of the team responsible for developing and implementing the campaign, and on other information available from the media sources.

Table 6.1. Evaluation theories, research questions, methods, research design, and sources of data for evaluating the mass media health education campaign for TB control in Cali (1994).

Theories	Research Questions	Methods	Design	Types/sources of data
Health education evaluation model of Nutbeam et al (1990) and Fly (1987).	***What was the impact?***			
	To what extent was this campaign useful for increasing the demand for diagnostic TB smears?	Quantitative	Quasi-experimental ('interrupted time series with a non-equivalent no-treatment control group time series design')	Epidemiological surveillance data on TB case finding.
	To what extent was this campaign useful in reducing prejudice against people with TB?	Quantitative	Cross sectional surveys ('one group pre-test—post-test design')	Scales measuring prejudice towards TB.
	What was the process?			
	In what way was the campaign implemented?	Qualitative	Participant observation	Fieldwork notes
	How extensive was the exposure to the campaign?	Quantitative	Cross sectional surveys	Television audience ratings
	What information does network analysis provide?	Qualitative	Opportunistic qualitative samples	Group interviews
	Programme acceptability?	Qualitative	Opportunistic qualitative samples	Group interviews
Fischer (1980) model of evaluation.	***Which values underpinned the objectives of the campaign?***			
	Do these values fit into the current policy of TB control? To which model of health promotion do these values relate?	Qualitative	*Validation* level of Fischer's (1980) evaluation model.	Fieldwork notes; text analysis

Chapter 7

7. FACTS AND VALUES: DID THE CAMPAIGN WORK?

7.1 INTRODUCTION

In this chapter I present the results achieved by setting up the research design employed for answering the four main research questions of this evaluation. In the first section I present the results that answer the research questions dealing with the impact of the campaign on the prejudice against PWT. In the second section I present the results answering the research questions dealing with the process of the campaign. In the third section I develop the validation level of the evaluation model of Fischer, in order to discover the values backing the objectives of the campaign.

7.2 IMPACT EVALUATION RESULTS

I assess the impact of the campaign by asking two research questions. First, to what extent was the campaign useful for reducing the prejudice against PWT. Second, to what extent was this campaign useful for improving the demand for direct smears for TB diagnosis. The results are presented in this section.

7.2.1 IMPACT OF THE CAMPAIGN ON THE PREJUDICE AGAINST PWT.

Table 7.1 shows the socio-demographic characteristics of Cali, and the two samples employed to measure the effect of the campaign on the prejudice against PWT.
Note that 399 and 412 people were interviewed in the pre-test and post-test survey respectively. The cross-sectional character and the different non-response rate for each of the surveys explain the differences between these numbers. Although the sampling error is 5%, within a 95% interval of confidence, the real sampling error is higher because the number of people per block and household was unknown and, therefore, not taken into account. In spite of this shortcoming, these samples are still highly representative of Cali's population in terms of sex and for some age groups (see Table 7.1). In fact, both in the pre-test and the post-test surveys, the age groups 45-54 and 55-64 were significantly over-represented, while the 25-34 age group was significantly under-represented in the post-test survey. There are no significant differences between the pre-test and post-test samples. Table 1b shows the characteristics of both samples in terms of educational level and socio-economic status.

Table 7.1 Socio-demographic characteristics of the population of Cali (1994) and the individuals surveyed before (pre-test) and after the campaign (post-test).

Characteristics	Population of Cali† N = 1,230,045		Pre-test survey N = 399		Post-test survey N = 412	
	n	%	n	%	n	%
Gender						
Female	673,898	54.8	210	50.4	210	51.0
Male	556,147	45.2	198	49.6	202	49.0
Age						
15 - 24	407,191	33.10	115	28.8	134	32.5
25 - 34	324,560	26.38	88	22.1	78	18.9 [b]
35 - 44	210,540	17.12	74	18.5	71	17.2
45 - 54	134,155	10.90	59	14.8 [a]	62	15.0 [c]
55 - 64	85,133	6.92	38	9.5 [e]	50	12.1 [d]
65 - +	68,466	5.57	25	6.3	17	4.1
Education						
Primary	—	—	89	22.3	103	25.0
Secondary	—	—	232	58.1	231	56.1
Higher	—	—	67	16.8	66	16.0
Other	—	—	11	2.8	12	2.9
SES*						
High	197,616	11.3	40	10.0	46	11.2
Upper middle	475,667	27.2	99	24.8	104	25.2
Lower middle	657,553	37.6	136	34.1	128	31.1 [g]
Low	351,511	20.1	124	31.1 [f]	134	32.5 [h]

† Source: Duque (1994); * SES (Socio-economic status)

[a] Goodness of fit Chi-square, 6.21; degrees of freedom, 1; $p<0.05$

[b] Goodness of fit Chi-square, 11.77; degrees of freedom, 1; $p<0.000$

[c] Goodness of fit Chi-square, 7.66; degrees of freedom, 1; p<0.00

[d] Goodness of fit Chi-square, 17.40; degrees of freedom, 1; p<0.000

[e] Goodness of fit Chi-square, 4.20; degrees of freedom, 1; p<0.05

[f] Goodness of fit Chi-square, 29.94; degrees of freedom, 1; p<0.0000

[g] Goodness of fit Chi-square, 7.49; degrees of freedom, 1; p<0.00

[h] Goodness of fit Chi-square, 39.60; degrees of freedom, 1; p<0.0000

In both the pre-test and the post-test surveys, the low socio-economic groups were significantly over-represented, while the lower middle group was under-represented in the post-test survey. The over and under-representation of some categories are taken into account before drawing conclusions about of the impact of the intervention on these groups. The sample size for both surveys and the lack of significant differences between them, according to variables which are not affected by the intervention (gender, age, educational level and socio-economic status) but which do influence its effects, make both samples comparable in spite of being independent. Both facts rule out the threat to the internal validity of using such type of samples in the evaluation design for assessing the impact of the campaign on the prejudice against PWT (Cook and Campbell 1979).

Univariate analysis.

Table 7.2 shows the answers given before and after the campaign to each one of the items used for measuring the prejudice against PWT.

Table 7.2 Distribution of frequencies of affirmative answers to the items composing the score measuring prejudice against PWT in Cali, 1994, before (pre-test survey) and after (post-test survey) the campaign.

Items	**Pre-test survey** **N = 399**		**Post-test survey** **N = 412**	
Could you be able of...	n	%	n	%
Working/studying with PWT	289	72.4	303	73.5
Hugging PWT	247	61.9	280	68.0 [d]
Sharing meals/cutlery with PWT	81	20.3	99	24.0 [b]
Having sex with PWT	49	12.3	81	19.7 [c]
Kissing PWT	34	8.5	49	11.9 [a]

[a] Goodness of fit Chi-square, 6.10; degrees of freedom, 1; $p<0.01$

[b] Goodness of fit Chi-square, 8.51; degrees of freedom, 1; $p<0.00$

[c] Goodness of fit Chi-square, 20.69; degrees of freedom, 1; $p<0.0000$

[d] Goodness of fit Chi-square, 6.42; degrees of freedom, 1; $p<0.01$

Results of both pre-test and post-test survey show that activities implying a less intimate physical and social contact, such as hugging or working/studying with PWT, were more easily accepted than sharing meals, kissing or having sexual relationships. A significant and favourable change (less prejudice) occurred after the campaign for all the items, except for working/studying with a patient. This exception may be the result of a ceiling effect (the level of acceptance for this item was already high in the pre-test survey).

Table 7.3 show the answers given to questions looking at beliefs about TB transmission. The answers to these questions were given in Likert type scales (see Appendix 4). Only those individuals who strongly agree with the statement about TB transmission presented by the interviewer were considered for the univariate analysis presented in this table. Before the campaign the beliefs about mechanisms of TB transmission held by the community were a mix composed of the characteristics of transmission of food-borne (sharing TB patient's cutlery), air-borne (exposure to cough and working/studying) and sexually transmitted diseases (sexual relationships). Table 7.3 shows that these beliefs significantly changed in the direction expected by the managers of the campaign, except for the items looking at sexual relationships and

Table 7.3 Distribution of frequencies of people who strongly agreeing with different beliefs about TB transmission in Cali (1994) before (pre-test survey) and after (post-test survey) the campaign.

Items	**Pre-test survey** **N = 399**		**Post-test survey** **N = 412**	
TB is transmitted by...	n	%	n	%
Exposure to a patient coughing	264	66.2	311	75.5 [c]
Kisses	236	59.1	207	50.2 [b]
Sharing cutlery/meals	195	48.9	170	41.3 [a]
Sexual relationships	120	30.1	122	29.6
Studying/working with patients	59	14.8	71	17.2

[a] Goodness of fit Chi-square, 9.62; degrees of freedom, 1; $p<0.002$

[b] Goodness of fit Chi-square, 13.27; degrees of freedom, 1; $p<0.000$

[c] Goodness of fit Chi-square, 15.88; degrees of freedom, 1; $p<0.0000$

working/studying with PWT. The ceiling effect may explain that 'working/studying with PWT' did not significantly changed.

The belief about transmission by sexual relationships did not change, though the equivalent item in the scale measuring prejudice did change. This contradictory results can be explained, to a great extent, by two reasons. First of all, sexuality is a very complex aspect of human life. The question used in this scale are insufficient and, perhaps, inappropriate to assess beliefs dealing with sexual behaviour. Secondly, the educational materials used in the campaign did not emphasise on those aspects dealing with sexual behaviour and its relationship with TB. However, beliefs strongly emphasised by the campaign, such as cough as mechanism for TB transmission, did change. Indeed, the strongest significant change after the campaign occurred in the belief that TB transmission occurs during exposure to PWT that is coughing (see Table 7.3). This item was not included in the scale measuring the cognitive component of the attitude because its very low correlation with the other items, which resulted in a scale with very low internal consistency (Cronbach's alpha = 0.45).

Table 7.4 shows the answers given to the questions exploring the feelings evoked by PWT. Before the campaign, the feelings towards TB patient were mainly of pity and fear. A very small proportion of people reported anger and loathing. These feelings, except for the significant increase in fear and loathing, did not change significantly after

Table 7.4 Distribution of frequencies of feelings towards PWT in Cali (1994) before (pre-test survey) and after (post-test survey) the campaign.

Item	**Pre-test survey** **N = 399**		**Post-test survey** **N = 412**	
Feelings	n	%	n	%
Pity	169	42.4	189	45.9
Fear	101	25.3	123	29.9 [a]
Loathing	14	3.5	27	6.6 [b]
Anger	8	2.0	10	2.4

[a] Goodness of fit Chi-square, 4.52; degrees of freedom, 1; p<0.03
[b] Goodness of fit Chi-square, 11.37; degrees of freedom, 1; p<0.000

the campaign. The feelings evoked by people with a stigmatising condition such as TB used to be ambivalent (Jones et al, 1984) and, as a result, not very consistent. A further exploration of the influence of the campaign on the feelings evoked by PWT would require more complex measures that take account of the factors influencing the affective component of the attitude, this was not the aim of this research.

Table 7.5 shows the distribution of frequencies of the main sources of information about TB reported by the people surveyed. Television, friends and relatives, and radio are the commonest source of information before and after the campaign, while newspapers and direct contact with PWT are not important sources of information. This is not surprising due to the fact that, first, television and radio are the two most popular media sources and, second, people use to rely on their social support networks for receiving information and advice for dealing with their ailments. On the other hand, reading of newspapers is relatively low, and TB is not a common disease. A significant increase in the proportion of people reporting television and a significant decrease in the proportion of those reporting health care and educational institutions occurred after the campaign. This significant increase of television is due, mainly, to the fact that this was the most wide and consistent source used to convey messages of the campaign (see process evaluation results, further in this chapter).

Table 7.5 Distribution of frequencies of sources of information about TB reported in Cali (1994) before (pre-test survey) and after (post-test survey) the campaign.

Source of information	**Pre-test survey** **N = 399**		**Post-test survey** **N = 412**	
	n	%	n	%
Television	165	41.4	217 [a]	52.7
Radio	99	24.8	90	21.8
Newspapers	37	9.3	28	6.8
Health care and educational institutions	98	24.6	69 [b]	16.7
Contact with PWT	58	14.5	45	10.9
Friends and relatives	113	28.3	97	23.5

[a] Goodness of fit Chi-square, 7.08; degrees of freedom, 1; $p<0.008$

[b] Goodness of fit Chi-square, 5.04; degrees of freedom, 1; $p<0.02$

Table 7.6 shows the scores achieved in the prejudice against PWT scale and its cognitive component by those individuals surveyed before and after the campaign.

Table 7.6 Mean scores of the 'prejudice against PWT' scale and its cognitive component in Cali (1994) before (pre-test) and after (post-test) the campaign.

Variables	Scores				
	Mean	(CI 95%)	Mean change	(CI 95%)	SE
Prejudice					
Pre-test	8.69	(8.43, 8.95)	—	—	—
Post-test	9.15	(8.88, 9.41)	- 0.46 [a]	(-0.83, -0.90)	0.19
Cognitive component					
Pre-test	9.93	(9.56, 10.29)	—	—	—
Post-test	10.42	(10.03, 10.80)	- 0.49 [b]	(-1.02, 0.04)	0.27

CI = interval of confidence; SE = Standard error

[a] t = -2.44; 809 degrees of freedom; p = 0.015

[b] t = -1.81; 809 degrees of freedom; p = 0.07

A significant change in the direction expected by the managers of the campaign occurred for prejudice but not for the cognitive component of this attitude. That is, a significant decrease in the level of prejudice against PWT was achieved after the campaign. Although significant positive changes occurred for some items dealing with beliefs about TB transmission, the score overall did not change significantly after the media campaign. It must be taken into account that when the item asking about 'beliefs on transmission due to exposure to coughing' was included in the score measuring the cognitive component of the prejudice, a significant increase was achieved (mean change = - 0.6; CI (-1.08, -0.07); t = -2.22; 809 degrees of freedom; p = 0.03).

Table 7.7 shows the mean scores of the scale measuring the prejudice against PWT according to different socio-demographic variables for the pre-test and the post-test surveys. The one-way ANOVA procedure was used to the test differences between groups. It shows significant differences for age (F = 5.61; $p < .000$) and socio-economic status (F = 3.45; $p < .01$) in the pre-test, and for age in the post-test

Table 7.7 Distribution of mean scores of prejudice against PWT according to socio-demographic variables in Cali (1994) before (pre-test score) and after (post-test score) the campaign.

Variable	Pre-test score N = 399		Post-test score N = 412		Mean change	SE
	Mean	SD	Mean	SD		
Sex	t =1.70	p <.09	t = .65	p <.51		
Female	8.46	2.55	9.24	2.63	-0.77 [a]	0.26
Male	8.91	2.68	9.07	2.81	-0.15	0.27
Age	F =5.61	p < .000	F = 5.77	p <.0000		
15 - 24	9.57	2.67	10.06	2.67	-0.49	0.34
25 - 34	8.50	2.41	9.10	2.73	-0.60	0.34
35 - 44	8.54	2.57	8.70	2.82	-0.16	0.45
45 - 54	8.59	2.74	8.58	2.44	0.01	0.47
55 - 64	7.97	2.51	8.66	2.52	-0.68	0.54
65 - +	7.04	2.01	7.53	2.35	-0.49	0.68
Education	F = .5	p < .67	F = 2.61	p < .051		
Primary or less	8.42	2.17	8.53	2.75	-0.12	0.36
Secondary	8.81	2.71	9.43	2.74	- 0.62 [e]	.01
Higher	8.61	2.91	9.15	2.67	- 0.54	.26
Other	8.82	2.56	9.0	1.21	-0.18	0.82
SES	F =3.45	p < .01	F = 1.26	p < .29		
High	7.85	2.34	9.37	3.24	-1.51 [b]	0.62
Upper middle	8.38	2.89	9.02	2.37	-0.63	0.37
Lower middle	8.69	2.46	9.47	2.85	-0.77 [c]	0.33
Low	9.20	2.58	8.87	2.67	0.34	0.33
Total	8.69	2.62	9.15	2.72	-0.46 [d]	0.19

SD = standard deviation; SE = standard error; SES = socio-economic status

[a] t = -2.98; 398 degrees of freedom; p = 0.003

[b] t = -2.44; 84 degrees of freedom; p = 0.01

[c] t = -2.37; 251 degrees of freedom; p = 0.029

[d] t = -2.44; 809 degrees of freedom; p = 0.01

[e] t = -2.44; 461 degrees of freedom; p = 0.01

($F = 5.77$; $p < .000$). The polynomial linear test showed a significant rising pattern for socio-economic status ($F = 3.45$, $p < .017$) in the pre-test, and a descending one for age in both the pre-test ($F = 5.61$, $p < .0001$), and the post-test ($F = 14.34$, $p < .0002$). That is, in both pre- and post-tests, the older the individuals surveyed, the higher their prejudice against PWT, while the higher the socio-economic status of individuals in the pre-test, the higher their prejudice against PWT.

Since there is a positive direct relationship between older people and longer exposure to lay beliefs about TB transmission and to the prejudice against PWT it is, then, understandable that higher levels of prejudice are reported by older people. Higher levels of prejudice in the well-to-do may reflect, firstly, higher levels of ignorance about TB transmission; secondly, the association of TB with poverty commonly found in all the socio-economic strata and; thirdly, a low level of experience of PWT. Changes in the score assessing the prejudice against PWT after the health education programme were significantly higher for females, for those with secondary education, and people belonging to neighbourhoods of high and lower-middle socio-economic status.

Table 7.8 shows the distribution of the mean scores in pre-test and post-test surveys for the cognitive component, according to the socio-demographic characteristics of the samples. The one-way ANOVA procedure was used to test the differences between groups. It shows significant differences for age ($F = 6.76$; $p < .0000$) and socio-economic status ($F = 5.12$; $p < .000$) in the pre-test, and for age in the post-test ($F = 5.12$; $p < .000$). The polynomial linear test showed a significant rising pattern for socio-economic status ($F = 3.45$, $p < .01$) in the pre-test, and a descending one for age in both the pre-test ($F = 5.61$, $p< .0001$), and the post-test ($F = 10.86$, $p< .0001$). That is, in both pre- and post-tests, the older the individuals surveyed, the less appropriate their beliefs about TB transmission. Higher socio-economic status of individuals in the pre-test was also significantly associated with less scientifically founded beliefs about TB transmission. Since the older individuals had longer exposure to lay beliefs about TB transmission it is, understandable that this is reflected in higher levels of inappropriate beliefs amongst the older people surveyed. Although people of higher socio-economic status may have had experienced of TB less often than those of lower status, their higher levels of ignorance about TB transmission might be a result of the stereotypical lack of

Table 7.8 Distribution of mean scores of beliefs about mechanisms of TB transmission according to socio-demographic variables in Cali, 1994, before (pre-test score) and after (post-test score) the campaign.

Variable	Pre-test score N = 399		Post-test score N = 412		Mean change	SE
	Mean	SD	Mean	SD		
Sex	$t = -1.56$	$p < .12$	$F = 1.41$	$p < .16$		
Female	10.21	3.72	10.15	4.07	0.64	0.39
Male	9.64	3.70	10.70	3.87	-1.06[a]	0.38
Age	$F = 6.76$	$p < .0000$	$F = 5.12$	$p < .000$		
15 - 24	11.32	4.01	11.65	3.84	-0.32	0.50
25 - 34	9.84	3.47	10.54	3.9	-0.70	0.22
35 - 44	9.96	3.82	9.98	3.55	-0.02	0.97
45 - 54	8.78	3.14	9.55	4.12	-0.77	0.25
55 - 64	8.18	2.87	9.10	3.92	-0.92	0.21
65 - +	9.08	2.54	9.00	4.32	0.08	1.16
Education	$F = 2.32$	$p < 0.07$	$F = 0.5$	$p < .62$		
Primary or less	9.58	3.77	9.85	4.14	- 0.27	0.58
Secondary	10.32	3.74	10.77	4.0	- 0.45	0.36
Higher	9.23	3.65	10.38	3.7	-1.15	0.63
Other	8.72	2.10	8.75	2.99	-0.03	1.09
SES	$F = 4.61$	$p < .00$	$F = 2.19$	$p < .09$		
High	8.15	3.66	10.91	4.35	-2.76[b]	0.87
Upper middle	10.18	3.49	9.87	3.83	0.30	0.52
Lower middle	9.70	3.31	10.07	3.79	-0.36	0.44
Low	10.54	4.15	11.00	4.07	-0.46	0.51
Total	9.93	3.72	10.42	3.98	-0.49	0.27

SD = standard deviation; SE = standard error; SES = Socio-economic status

[a] $t = -2.80$, 398 degrees of freedom; $p = 0.005$

[b] $t = -3.16$; 84 degrees of freedom; $p = 0.002$

understanding about the way in which infectious diseases are transmitted. Changes in the score assessing the beliefs about TB transmission after the health education programme were significantly higher for males, and people belonging to high socio-economic status.

The pre-test survey also shows a high prevalence of scientifically unfounded beliefs about how TB is transmitted. The mean of the scale assessing these beliefs, the cognitive component of the prejudice against PWT, shows a significantly rising pattern for age and socio-economic status (the higher the status, the more common these beliefs) (see Table 7.8). The campaign produced, globally, a reduction of 4.9% ($p < .07$) in this mean. However, the significant rising pattern of the mean for age, found in the pre-test survey, persisted after the campaign, which was not the case for the socio-economic groups. The big difference in the mean change between the high, the low and the low middle socio-economic groups (see Table 7.8) strongly suggests that the campaign worked better in improving the knowledge of those with high socio-economic status, who reduced gap between themselves and those of lower status. Unfortunately, the non-longitudinal design of the survey makes it impossible to give a definitive answer to this suggestion. The campaign produced a significant reduction on all the items of the scale, except for two, namely, 'transmission by sexual relationships', and 'working/studying with PWT'.

Although, the belief about 'transmission by sexual relationships' did not change, the intention to 'have sex relationships with PWT' did increase significantly after the campaign. I discussed earlier in this section how it is difficult to draw conclusions on issues dealing with sexuality in these surveys. The same applies to these results.

The item assessing the belief that TB is transmitted by coughing showed the highest positive change. Though this item was not part of the scale measuring the cognitive component of prejudice, this change could help explain the positive effects of the campaign on the demand for smear tests.

Bivariate analysis

Bivariate analysis was performed in order to explore how the independent variables (socio-demographic, sources of information about TB, feelings towards PWT, and beliefs about TB transmission) correlate with the prejudice against PWT. Table 7.9

Table 7.9. Correlation between independent variables and the prejudice against PWT, and its cognitive component in Cali (1994).

Independent variable	Pre-test	Post-test
Cognitive variables		
Beliefs about TB transmission	.44***	.45***
Exposure to cough of PWT	- .12**	- .07
Curability of TB	- .05	- .08
Socio-demographic		
Gender	- .08*	.05
Age	- .23***	- .23***
Educational level	- .001	.07
Socio-economic status	.16**	- .04
Sources of information on TB		
Contact with PWT	- .04	- .05
Friends/relatives	-.05	- .06
Health care and educational institutions	.11*	.10*
Television	.02	.04
Radio	.07	.04
Newspapers	.04	.05
Feelings evoked by PWT		
Fear	.27***	.16***
Pity	.11*	.20***
Loathing	.06	.24***
Anger	.05	.08*

* $p< .05$; ** $p< .00$; *** $p< .000$

shows the distribution of the correlation between the independent variables and the prejudice against PWT before and after the campaign.

The prejudice against PWT was significantly correlated with its cognitive component both in the pre-test ($r = .44, p < .000$), and in the post-test survey test ($r = .45, p < .000$).

That is, there was a positive correlation between having appropriate beliefs about how TB is transmitted and having less prejudice against PWT. This is a very important finding, supporting the construct validity of the scales assessing the prejudice against PWT. Indeed, the programme theory of the campaign predicts that prejudice against PWT is correlates to certain types of beliefs about how TB is transmitted. However, the fact that the scale assessing the cognitive component is not highly correlated with the scale assessing prejudice shows that they are measuring two different constructs. The discriminant validity of both scales is supported by the very poor correlation between prejudice and its cognitive component with dissimilar and unrelated variables.

For the pre-test survey age, gender, socio-economic status, and the level of fear and pity felt towards PWT were all significantly correlated to the prejudice against PWT. The younger the individuals and the lower their socio-economic status, the less fear and pity was felt for PWT by the individuals surveyed. Having health care and educational institutions as a source of information on TB, were both correlated to a higher level of prejudice against PWT. Females were also significantly correlated to this attitude. For the post-test survey age, having health care and educational institutions as a source of information on TB, as well as the level of fear, pity, loathing, and anger evoked by PWT, were all significantly and positively correlated to the prejudice against PWT.

Multivariate analysis

In order to exclude any spurious associations between those variables significantly correlated to the prejudice against PWT, and to identify those independent predictors of prejudice a multiple linear regression was performed. The scores representing the prejudice against PWT and the independent variables fulfil the normality assumptions for regression analysis. Categorical variables were dummy-coded. Stepwise was the procedure chosen for performing the regression. Only those variables with $p < 0.05$ were allowed to enter the equation. A Bonferroni correction compensate for the well-known tendency of stepwise regression to increase the chance of Type I error (Kleinbaum et al, 1997).

The results of the regression show that the prejudice against PWT can be predicted from the age, the level of fear of PWT, and the beliefs about the disease's transmission of the respondents (Table 7.10). The older the respondents and the more fearful they are of PWT, the less scientifically founded their beliefs about TB transmission. This model explains 26% of the variance of the prejudice against PWT (Table 7.10). However, the instrumental functions of prejudice alone explains 23% of the variance ($F = 57.82; p < .000$), that is, the cognitive component of the attitude ($\beta = .40$, $t = 8.87, p < .000$) and the fear of PWT ($\beta = .17$, $t = 3.71, p = .0002$). Thus, the importance of the instrumental component in this prejudice might be consistent with research showing that the infectivity and severity of physical illnesses are the main predictors of prejudice, even in those cases where the symbolic aspects of the attitude are also important (Crandall & Moriarty, 1995).

Table 7.10 Results of the multiple regression of variables predicting prejudice against PWT in Cali (1994) before and after the campaign.

Predictor variables for the pre-test $R^2 = .26$; SE = 2.26; $F = 28.00; p = .0000$	**B**	**SE B**	β	p	p^a
Beliefs about TB transmission	.25	.03	.36	.000	.000
Fear of PWT	.55	.14	.16	.000	.001
Age	- .22	.07	- .13	.005	.04
Socio-economic status	.32	.12	.12	.008	.06
Educational and health care institutions as source of information on TB	.62	.26	.10	.02	1.6
Predictor variables for the post-test $R^2 = .23$; SE = 2.39; $F = 41.53; p = .0000$					
Beliefs about TB transmission	.26	.03	.37	.000	.000
Pity of PWT	.73	.20	.16	.000	.003
Age	- .24	.08	- .14	.002	.01

[a] With Bonferroni correction

The results of the regression (see Table 7.10) show that after the campaign the prejudice against PWT can be predicted only from the beliefs about TB transmission, their age, and their level of fear of PWT. The older, the more fearful of PWT, and the less appropriate their beliefs about TB transmission the more prejudiced individuals are against PWT. This model explains 23% of the variance of the prejudice against PWT (Table 7.10). In this case, the instrumental functions of prejudice alone explains 20% of the variance ($F = 53.11$; $p < .0000$), that is, the cognitive component of the attitude (SE= .03, $\beta = .41$, $t = 9.31$, $p < .0000$) and the pity felt towads PWT (SE= .15, $\beta = .12$, $t = 2.71$, $p < .007$). The cross-sectional nature of both surveys does not allow for an analysis that could establish beyond doubt the effects of the campaign on some variables. However, the fact that both samples are comparable allows me to argue that, as a result of the campaign, variables such as socio-economic status, the source of information about TB, and fear of PWT are no longer predictors of the prejudice against PWT. By the same token, it might be argued that the campaign introduced pity towards PWT as a significant and relatively important predictor of prejudice.

7.2.2 IMPACT OF THE PROGRAMME ON DEMAND FOR DIRECT SMEARS.

Data showing the trends in demand for direct smears (the behavioural change to be evaluated) in the intervention and the control group were taken from their respective TB surveillance systems. Table 7.11 shows the results of case finding activities (the number of direct smear tests, of people tested, and of new cases of positive pulmonary TB) reported by the Secretariat of Public Health of Cali and the Departmental Secretary of Health of Risaralda in the period 1993-1995.

Each individual who is requests a direct smear test for diagnosis of TB must provide the lab with three sputum samples to be stained and read by a microbiologist. However, as Table 7.11 shows, most of these individuals do not deliver all three samples. In fact, an average of only 2-2.5 direct smears are read per individual in both Cali and Risaralda. Fortunately, most PWT (from 70 to 95%) who really are positive are diagnosed with the first two smears they provide (Harries et al, 1996). Unpublished data of the labs in TB Control Programmes of Cali and Risaralda reported the same findings during 1993 and 1990.

Table 7.11 shows also that, in most of the quarters, the number of positive cases found in Cali is double, at least, that of Risaralda. This is in spite of the fact that both groups performed a relatively similar number of direct smears on a similar number of people. It results from the fact that Cali and Risaralda are places with different notification rates of positive pulmonary TB and with different antecedents in TB control. While the programme in Risaralda has had an excellent record of efficiency and effectiveness from the late 1970s, measures to improve the programme in Cali were taken only as recently as 1992 (see chapter five, p. 148). This means that the efforts made for finding a positive case in Risaralda, using direct smears as the diagnostic strategy, produce fewer positive results than in Cali. In short, for the same number of smears analysed, more positive cases are reported in Cali than in Risaralda.

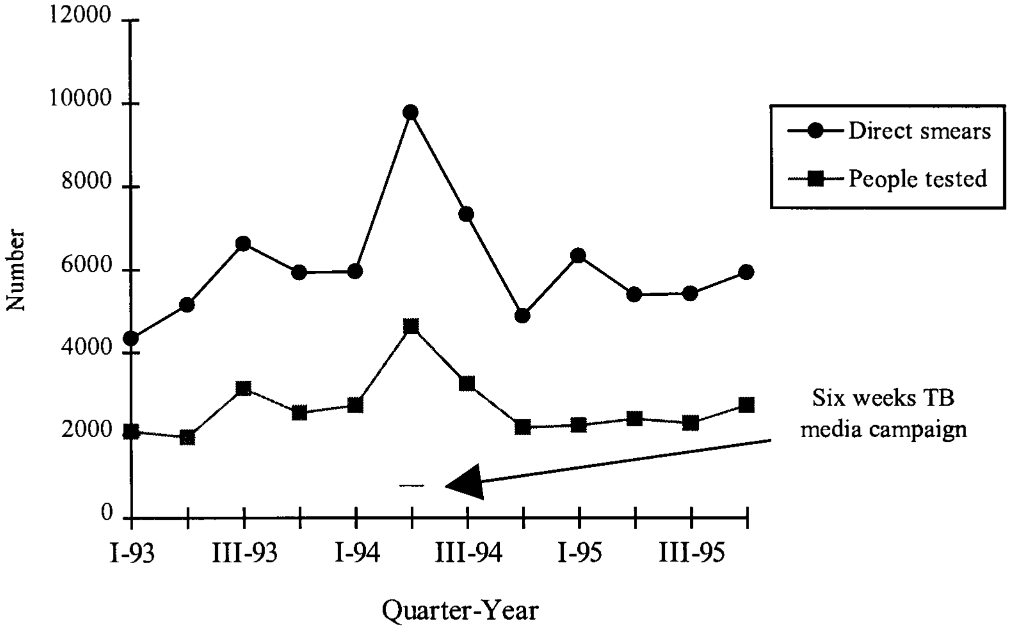
Table 7.11 Results of case finding activities in TB control in Cali and Risaralda (1993-1995)

Yearly quarters	Number of Direct Smears		Number of People Tested		Number of Positive Pulmonary TB Cases Notified	
	Cali	Risaralda	Cali	Risaralda	Cali	Risaralda
I-93	4,348	6,256	2,077	2,470	127	60
II-93	5,158	6,058	1,938	2,445	133	60
III-93	6,634	6,490	3,123	2,609	151	52
IV-93	5,936	5,452	2,533	2,212	115	51
I-94	5,966	6,170	2,710	2,518	95	57
II-94	9,772	6,126	4,627	2,504	145	66
III-94	7,334	6,545	3,235	2,648	123	76
IV-94	4,881	4,935	2,165	2,052	115	40
I-95	6,329	5,569	2,224	2,221	111	67
II-95	5,394	4,995	2,371	1,890	103	46
III-95	5,416	5,167	2,275	2,106	126	66

Source: Form 52-IV of the Tuberculosis Control Programme of the Public Health Secretariat of Cali, and the Departmental Secretary of Health of Risaralda.

Data for the numbers of direct smears performed, and the number of people tested for TB in Cali during 1993-1995 are depicted in Graph 7.1. The approach to be used in the analysis of each one of these 'single time series' is clear. On the one hand, data meeting the requirements for ARIMA modelling is not available for this evaluation because there is not enough information in the epidemiological surveillance system covering such a long period of time. In addition, TB epidemiological data was collected for the intervention group on a yearly basis until 1992, making it unrealistic to include them in the analysis, given that the health education campaign lasted only six weeks. On the other hand, it is evident that visual inspection is the appropriate method of choice given the dramatic increase in the demand for direct smears in the intervention group coinciding with the phase of the intervention. Magnitude (mean and level) and rate (trend and latency) of change are the criteria for visual inspection of this graph.

Graph 7.1 Number of people tested for diagnosis of TB and number of direct smears stained by the Public Health Secretariat of Cali (1993-1995)



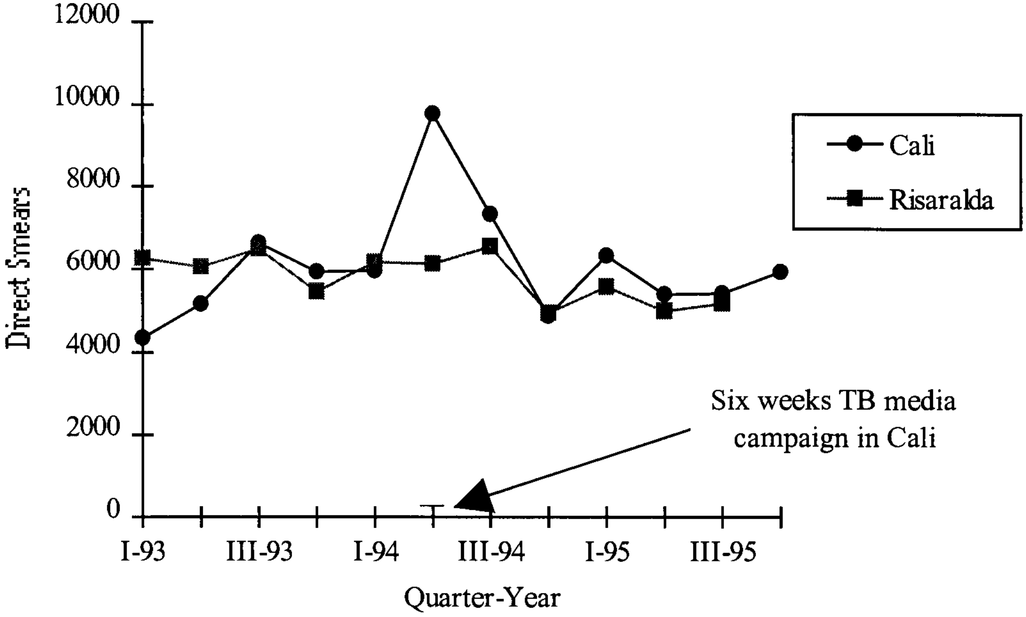
By visual inspection one can see that Graph 7.1 shows for direct smears a baseline level altered at I-93 and II-94 periods, where the lowest and the highest means of the time series were achieved. The number of direct smears mirrors, approximately, the number of people tested in all the quarters. Although the intervention occurred during six of the twelve weeks covering the unit of observation (quarter), it is possible to ascertain an increase in the level of the demand for direct smears and in the number of people tested during the quarter of the campaign. Indeed, the mean was well beyond the baseline level. It is not possible to observe any trend that can be attributed to the intervention, but there is clearly a very short latency period between the intervention and the effects observed (a fact confirmed during the monitoring of the effects of the campaign, when a sudden huge increase in the samples delivered at the labs was reported by the bacterilogists). This short latency makes all the more solid the case for attributing causal relationships between the intervention and its effects (Kazdin 1982).

The threats to the internal validity of the 'single time series design' were already discussed in chapter four (p. 110). Graph 7.1 helps to assess the operation of these threats on this serie. Although there was a *maturation* process operating before the intervention due to the project that improved the performance of the TB programme (see chapter five, p. 148), the level of performance stabilised during the three quarters immediately before the campaign. However, it is important to keep in mind that the effects of *seasonality* are difficult to rule out in a short time serie like this. However, it is very improbable that the peak achieved during the quarter of the media campaign could be a result of seasonality effects given that never before the TB surveillance system reported such a level of demand for direct smears. In fact, the amount of tests performed during the quarter of the campaign were similar to the number performed during the whole year in 1990, 1991 or 1992 (see Graph 5.1, p. 149). The effect of *regression* can easily be ruled out by observing the trend of pre-test time serie in the Graph 7.1. *Instrumentation* and *simple selection* were already ruled out as a threat to the internal validity of this evaluation (see section 6.3, p. 148).

To rule out *history,* the major threat in a 'single time series design', a control group must be added in order to make causal inferences on both the immediate (Orwin 1997), and the lasting effects of the intervention (Cook and Campbell 1979). Graph 7.2a shows the effects of transforming the 'single time series' in an 'interrupted time series with a non-equivalent no-treatment control group time series design' by adding Risaralda as a control group. By visual inspection of Graphs 7.2a and 7.2b, it is clear that the baseline for the control group is comparable to the intervention group baseline for both the number of smears stained and the number of individuals tested.

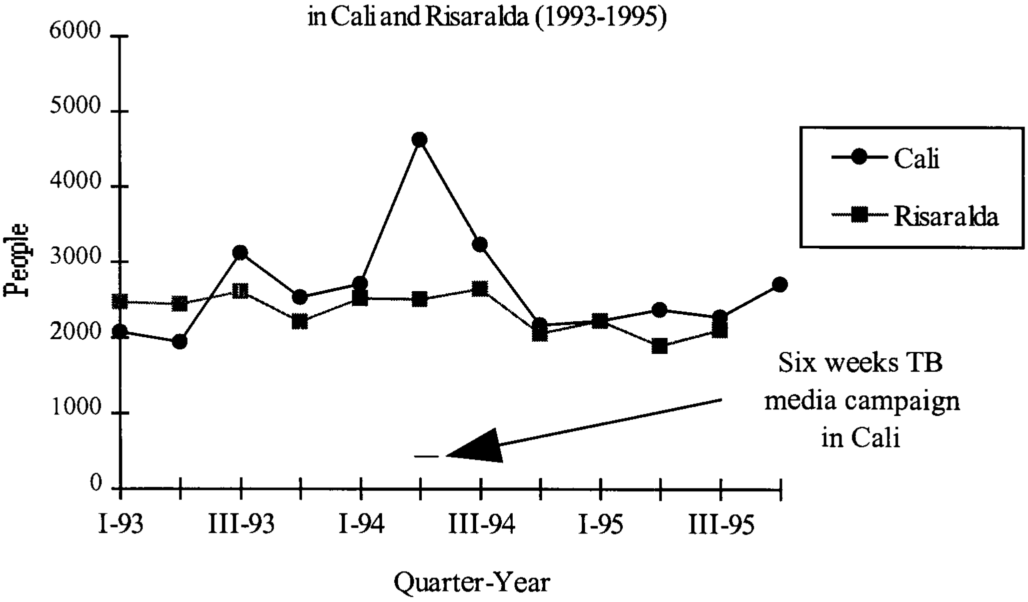
For the first two quarters of 1993 the mean was much higher in the control than in the intervention group. An increase in the number of smears and people tested in the intervention group occurred as a result of the adjustments made to the TB programme since 1992 and, particularly, during 1993 (see chapter five, p. 145). During the following periods both groups performed similarly until the second quarter of 1994. In this quarter the control group kept its trend and level, but in the intervention group there occurred an increase in mean and level, as already described. This period included the six weeks mass media health education campaign. The mean in the intervention group maintained itself above the baseline level until the second quarter after the campaign.

Graph 7.2a Number of direct smears for diagnosis of TB stained by the Public Health Secretariats of Cali and Risaralda (1993-1995)



Six weeks TB media campaign in Cali

Graph 7.2b Number of people tested with direct smears in Cali and Risaralda (1993-1995)

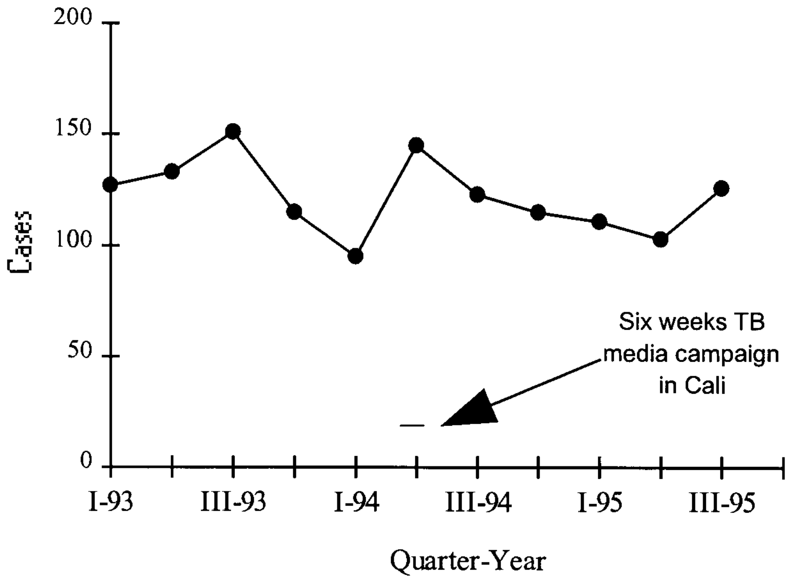


Six weeks TB media campaign in Cali

During the following quarters the means in the intervention group were higher but mirrored, at least in the number of smears, the changes in the mean occurring in the control group. Based on these data, and on the fact that there was no other process happening at that time in either group other than the media campaign in Cali, it is possible to rule out history as an appropriate explanation for the changes observed. Thus, it is possible to claim that there is a causal relationship between the mass media health education campaign and the huge increase in the demand for direct smears in the intervention group. The fact that the intervention was rapidly implemented, and that the effects became evident very quickly strengthen the validity of this causal inference. On the other hand, quarterly intervals "are more sensitive for detecting immediate causal impacts of short duration", as Cook and Campbell demonstrated (1979) (p. 232). In spite of the strong immediate effects of the campaign, they were not lasting. This is understandable once Roger's (1981) model for adoption of innovations is taken into account.

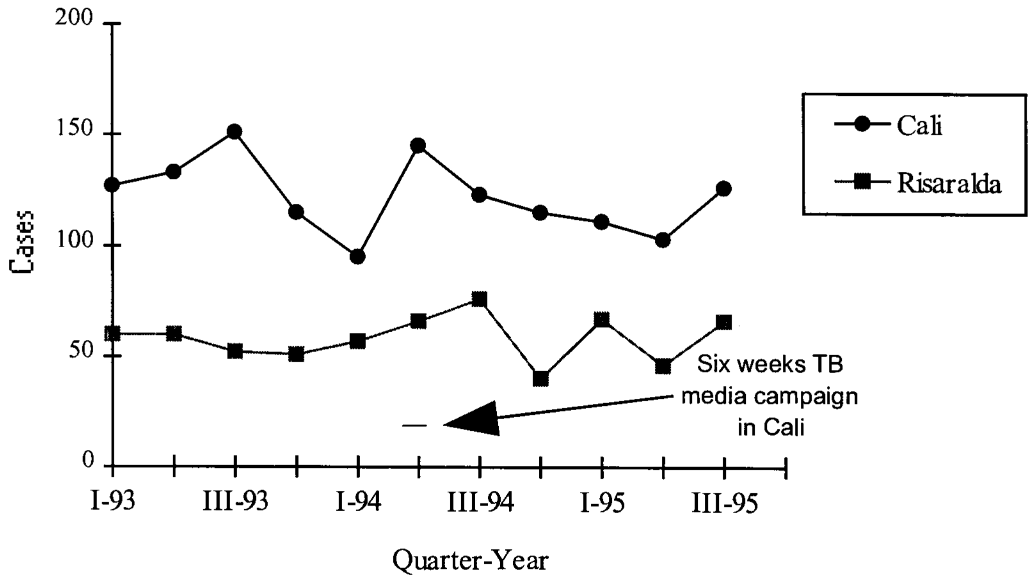
The increase in the demand of direct smears correlates to a peak in the number of cases of pulmonary positive TB notified to the Secretariat of Public Health of Cali during the quarter of the media campaign (see Graph 7.3a). This peak reached the same level achieved by the TB Control Programme three quarters previously, when a record number of direct smears was performed at the time that the project for improving the performance of the TB control programme gained momentum. The increase of 58% in the number of positive cases notified during the quarter of the campaign as compared with the previous quarter emphasises the low diagnostic coverage achieved by a passive case finding strategy that relies exclusively on the public health system. In other words, the results of the campaign in terms of case finding demonstrate that for every two patients found with a direct smear following a passive case finding strategy there is, at least, one left without diagnosis. This finding underscores the impact of a media campaign on the increase in demand for direct smears and the possible consequences for the diagnostic coverage. It is noteworthy that while the demand for direct smears returned to the baseline level after two quarters, it took four quarters for the number of cases found to get back to its baseline level. In the final quarter of the serie there is another surge in the number of notified cases. This is explained, to a great extent, by the huge number of PWT diagnosed by the Social Security System who were sent to receive treatment at the Secretariat of Public Health. This did not occur in the previous quarters.

Graph 7.3a Number of new cases of positive pulmonary TB notified to the Secretariat of Public Health of Cali (1993-1995)



The increase in the number of cases of pulmonary positive TB notified to the Secretariat of Public Health of Cali in the quarter of the media campaign is not mirrored by a similar increase in the control group (see Graph 7.3b). In fact, the pattern of notified cases in the control group becomes erratic in the quarters following the campaign due, perhaps, to the decrease in the case finding activities (see Table 7.11) and to the administrative changes happening at that time in the public health services.

Graph 7.3b Number of new cases of positive pulmonary TB notified to the Secretariats of Public Health in Cali and Risaralda (1993-1995)



To summarise, the evaluation of the impact of the campaign shows that it reduced significantly the level of prejudice against PWT; increased, though not significantly, the level of knowledge about mechanisms of TB transmission; and was the main reason for explaining a huge and sudden increase in the number of direct smears performed at the labs of the Secretariat of Public Health of Cali, and in the number of notified cases of pulmonary positive TB.

7.3 PROCESS EVALUATION RESULTS

'What was the process of the educational programme?' is the main research question to answer for understanding how the campaign developed. I worked out three sub-questions: What activities were provided?; Who provided the activities?; and How were the activities provided?. I rely on four components of process proposed in the evaluation model of Nutbeam et al (1990) and Fly (1986): implementation process, network analysis, community exposure to the programme, and its social acceptability.

7.3.1 IMPLEMENTATION EVALUATION

This component of the process evaluation assesses providers, conditions, and the effort required for developing the objectives of the campaign. It also assesses the final message delivered to the target audience by analysing the images and texts used as educational material.

The two organisations responsible for implementing the campaign were the Secretariat of Public Health and the LAC-Valle. Both organisations presented themselves to the community as the sponsors of the campaign. Each of the institutions sponsoring the programme took on different roles in the implementation of the campaign. The Public Health Secretariat took responsibility for meeting all the logistic needs entailed in the expected increase in the demand for diagnosis and treatment of TB, and for financing two surveys evaluating the campaign. The LAC-Valle took responsibility for financing the design and production of the health education materials, and for the delivery of the educational contents of the campaign. Although the LAC-Valle was the initial promoter of this public health initiative and was aware of the costs that would be entailed, it accpeted the responsibilities described above only when it was clear that the campaign was feasible, and that the media owners and regulators were ready to back up the project.

The artistic concepts for designing and producing the flyers were contracted with local print companies, based on texts provided by the managers of the campaign. The design and production of spots for television and radio was less easy than that for newspapers since these are extremely expensive. In fact, the prices quoted by the advertising agencies for two television spots were well beyond the budget available for the LAC-Valle to implement the entire campaign. The managers of the programme at the LAC-Valle decided, then, to rely on their own experience and skills for designing the artistic concepts themselves and producing the messages they wanted to convey. In fact, I myself did the creative concepts and the television production for the two television spots, having the advice of an expert television producer.

Since the remaining costs for producing and airing the spots were still very high (filming, recording, rental of video and radio studios, speakers, set design, and airing of the public service announcements), the sponsors of the campaign lobbied strongly to gain the support needed. Indeed, the Executive Director and members of the board of trustees of the LAC-Valle lobbied the director of the local television station, and the managers of television and radio production companies. They put forward two arguments to gain the support of these media gatekeepers. Firstly, the worrying dimensions in the city of this transmissible disease, which put everybody at risk of infection. Secondly, the need for all the members of the society, including local government and the private sector to combine efforts for tackling a health problem that could affect anybody at any time. I participated actively in this lobbying giving technical support (bio-medical information) to these arguments. This strategy was very successful: the local television station (a company partly owned by the state) authorised a special concession for airing the public service announcements (television spots); “Comunicaciones Bautistas” (a private company) provided the technical support for producing and editing the video spots at cost price; “Orientamos Publicidad” (a private company) designed and produced the radio spots for free; and several private television companies allowed the airing the messages of the campaign in their programmes.

The airing of radio and television spots and the delivery of flyers enclosed in the newspapers was the following stage in the implementation of the campaign. Two factors have to be considered when describing how this task was carried out: the costs entailing the use of mass media sources for marketing purposes and, the previous experiences of social marketing projects.

Firstly, audience rates dictate the cost of announcements in the media. Although the costs for announcements is lower in radio stations and newspapers with national coverage, and much lower for those with local coverage, the audience for this campaign was more easily targeted by television than by radio or newspapers—in fact, the circulation audit for newspapers places them in the third place in terms of audience size, while there are only three television channels and more than 20 radio stations. Once those two facts were considered, it became clear to the managers of the campaign that the cost of using radio and television for delivering the campaign announcements was prohibitive but that there was some space for negotiating a concession for using television.

Secondly, media campaigns aimed at raising awareness of issues of social interest are common in Colombia. Most of them are sponsored by the Government and are, mainly, television-based. In the department of Valle, this practice continued after the launching in the early 1990s of a local publicly funded television station, which provided the space for those initiatives that were more focused on the common interests of those living in the region. The two national channels still had the highest audience rates at the time of this campaign, though the local television station had increased its audience rating and the daily air time.

After lobbying, the chief executive of the local television station offered the campaign a special concession, available only for public service announcements. The conditions of this concession implied that the spots would receive a special label called a*codigo civico* ("civic label") that would legalise their broadcast free of charge. The private companies were obliged to include announcements with the *codigo civico* during the commercial breaks of their programmes. However, there were no clear guidelines for them to follow. It was necessary, then, to lobby private television companies in order to get their commitment with the campaign. Those companies owning the television night news programme and the television chat shows agreed to air the spots during their programmes (see Table 7.13). The process on radio and in the newspapers was more difficult due to the lack of a regulation, equivalent to that for television, facilitating concessions for the free airing of radio spots and print advertisements in the newspapers. In spite of that, it was possible to obtain free airing of the spots in two radio stations with a high audience rate, and to get an affordable price for the enclosing of the flyers in the two of the three local newspapers.

Table 7.12 shows the total number of activities, according to media sources, that were eventually delivered to the community during the six weeks of campaign. Although the most convenient position for the campaign was that the messages were evenly spread along the six weeks, it was the managers of the media companies who eventually decided when to air or print the messages. This is understandable once it is taken into account that the tacit agreement between the owners of the media companies and the LAC-Valle was that the former were doing a 'charitable act' by airing the campaign's messages free of charge.

Since the sponsors of the intervention lacked the resources to finance an intensive campaign, even for a short period, they decided to present the epidemic of TB in Cali to the media managers as a hot issue, threatening everybody in the community. It was expected that this strategy would persuade all the media to converge on the campaign, featuring TB in their programmes without having to the sponsors of the campaign having to pay for this coverage. In line with this the campaign was launched with a press conference at the Major City Hall that was attended by journalists representing around 12 media sources.[1] The strategy was successful in that radio and television news programmes featured the TB epidemic and the campaign on the day of its launch. However, it was less successful in keeping the attention of the media over the six weeks. Table 7.12 shows how most of the media coverage of the campaign, unlike the public service announcements, occurred during the first half of campaign. This is understandable by taking into account the fierce competition between the media programmers for drawing the attention of their audiences with novel and exciting

Table 7.12 Chronograph of the media programmes (other than public service announcements) delivering messages of the campaign for TB control in Cali from April 8th until May 20th (1994)

Programmes for each component of the campaign	1st week	2nd week	3rd week	4th week	5th week	6th week
Television						
Noti 5 (daily night TV news)	2’	—	—	—	—	—
Punto de Encuentro	30’	—	—	—	—	—
En Familia	—	30’	—	—	—	—
A Sol y Agua	—	—	10’	—	—	—
Doctores en Medicina	—	—	—	60’	—	—
Salud Hoy	—	—	—	60’	—	—
Oasis	—	—	—	—	10’	—
Radio						
Como anochecio Cali	2’	—	—	—	—	—
Como amanecio Cali	—	10’	—	—	—	—
De tarde en tarde	—	—	10’	—	—	—
Cartas sobre la mesa	—	—	10’	—	—	—
Noticiero Todelar	—	5’	—	—	—	—
Salud! llego el doctor	—	—	—	90’	—	—
Medicina Familiar	—	—	—	—	—	60’
Newspaper						
Feature article (El Caleño)	—	1 page	—	—	—	—
Feature article (El Pais)	¼page*	—	—	1 page	—	—
Feature article (Occidente)	—	—	—	—	1 page	—
Small article (El Tiempo)	¼page	—	—	—	—	—
Flyers inserted in ‘El Pais’	—	—	50.000	—	—	—
Flyers inserted in ‘El Caleño’	—	—	—	—	50.000	—

Source: Rossi de Gandini, P (1994)
(’) Total of time dedicated to the campaign by the programme, measured in minutes.
(*) Report covering the press conference launching the campaign.

news—something that is not very difficult in a country like Colombia.

---

[1] See Appendix 3.

Implementation evaluation also examines the contents and format of the messages delivered (see Appendix 3), in order to assess what was effectively delivered by the campaign. The messages in the leaflets, the chat shows, and one of the television spots made use of the Health Belief Model to convey messages in line with the objective of increasing the demand for direct smear tests. The Model was used to stress that TB is a serious but curable disease, which is only transmitted by coughing and which can be diagnosed and treated free of charge at the public health care centres. The social learning theory was used in one of the television spots and on several television chat shows by modelling the type of social relationships between PWT and the rest of the community promoted by the campaign.

Two television spots were presented during the six weeks of campaign as public service announcements (see the VHS tape enclosed with this thesis). As mentioned before, the first spot gave information aiming to increase the demand for direct smears, and the second modelled the behaviour of those having a non-prejudiced attitude towards PWT expected from the community. Although in the first spot some worrying words were used such as *tuberculosis*, *mortal*, and *contagious* they were combined with others that made a less threatening message: *mortal without treatment*, *contagious only by coughing* . Adding the words *curable* and *treatment is free* might help to promote a more reassuring message, though not necessarily for everyone, particularly for those with a strong prejudice against PWT. The seriousness of cough, and particularly of TB, is confirmed by a voice in off in the screen which order the actor who was coughing to attend the nearest health centre.

Overall, the spot covers the four basic elements of the Health Belief Model for persuading people who are coughing to attend a public health centre: perceived severity (mortal without treatment), perceived benefits (curable), perceived barriers (treatment is free...visit your nearest public health centre). The fourth element of the Model, perceived susceptibility, was not explicit in the spot: there was no text clarifying who was at higher risk, and the illumination of the stage concealed the age and gender of the actor. Although the implicit message for some people might might have been that every body was susceptible, others might have interpreted that susceptibility was something that did not apply to them. This treatment of the perceived susceptibility may have reduced the impact of the message. Although it was correct to reveal neither the gender or age of the actor in order to avoid linking TB with any specific gender or age group, it might have been better to use a text stating who was more susceptible to catching the disease.

In the second television spot a woman with TB modelled the joy that could be experienced by PWT when they are not discriminated by her disease (see VHS tape). The young woman modelled four situations common to daily life. Two of these situations were among those that the formative research of the campaign showed where important for explaining the prejudiced attitude towards PWT: sharing meals with and kissing PWT. The two other situations modelled (talking by phone and playing with a child), though possibly less worrying for those prejudiced against PWT, help also to convey the message that normal social relationships are perfectly possible for someone with TB. All these scenes in the television spot are supported by a pleasant background music that ends up in a jubilant tone when the woman raises and kisses a small girl. Just a few seconds before this ending a voice off the screen makes it clear that this woman has TB, and then invites the audience to make her life more easy.

TB in Cali is more common among young people and, though there is no reliable data to support this, it seems also to be more common among women. However, the image of the woman with TB presented in the spot is a highly romanticised one compared to the reality, according to my own medical experience. This, however, is made understandable once by taking into account the two constructs of the Social Learning Theory working in this television spot, namely, *expectations* and *observational learning*. In fact, this is a clear example of the manipulative nature of health education based on social psychology theories of health behaviour.

The credibility of the model chosen is controversial. Certainly, the model chosen was not the most representative of women with TB. It is not that the typical woman with TB does not have the opportunity to have an ice cream or to smile, it is just that her daily life is far from the constant joy apparently experienced by this lady of the spot—see, for example, an account of how women at higher risk of TB experience their life in Cali in Dufour et al (1997) and Meleis and Bernal (1995). However, choosing a more representative model might have made it more difficult for the intervention to succeed, and by triggering aversion of poverty (a presumably significant symbolic component of the prejudice against PWT) among the audience of the campaign, which could have been followed by increase in the discrimination of PWT. This is what happened in developed countries, and still happens in LDCs, in relation to HIV health education. Whenever health educators associate HIV with high risk groups the final result is higher levels of discrimination towards these groups (Mann and Tarantola, 1996). Instead of introducing the most representative image of PWT the campaign presented an artificial and unreal one, which was appropriate for the aims of the intervention. This difficulty, from the point of view of the 'social engineer', in choosing the image to represent a woman with TB, as well as the difficulty for choosing the best way to communicate the *perceived susceptibility* in the first television spot, are just two examples of the problems arising in effectiveness trials—where the educational materials have not been properly tested in efficacy trials. Yet at the same time, the way these difficulties were resolved by the campaign shows very clearly the manipulative nature of health education.

Two leaflets were distributed during the campaign (see Appendix 3). Criteria commonly accepted for the assessment of leaflets providing health information are considered for this evaluation. These criteria are: the use of medical terms, the use of short sentences, the use of personalised forms of communication, the verbal voice, size and style of print, the use of colour and illustrations, and the layout (Meade and Smith 1991; Ong et al, 1996). Readability tests, a very important element in the evaluation of leaflets, are available to evaluate texts written in English, particularly those dealing with health care information. Unfortunately, specific readability tests to be used in Spanish have not been properly designed and validated for places like Colombia.

Both leaflets have almost identical characteristics in terms of format. The size is half of a letter page, and the text is printed in black on material of newspaper quality. Each leaflet has a title in Arial font size 34 headlining the information. Four blocks of short text were used in the first leaflet and five in the second. They were in Arial 10, a really small font for a leaflet that is to be read by people of all age groups. Both leaflets had one-and-half lines of spacing which was appropriate. Very simple drawings, relevant to the text, were used besides each block. Only one jargon term, *baciloscopia*, was used in both leaflets, though its meaning (a direct smear for TB diagnosis) was briefly explained. Sentences were short for the standards of the language commonly written and spoken in Colombia. They were mainly in the active rather than the passive voice, and used first rather than third person verbal conjugations.

The second leaflet, delivered during the third week of campaign, drew attention to those having a cough for more than 15 days, and invited them to attend a health care centre. The first leaflet, unlike the second, did not directly relate to coughing with TB, though the link was suggested in the rest of the text. On the fifth week of the campaign the second leaflet was inserted, giving information about how to collect and deliver the sputum sample for a direct smear. Most of the text of the first leaflet was also included in the second one. Both of them covered key topics for the aims of the campaign, namely, that TB is a very serious problem in Colombia, where everybody is at risk, chronic coughing is an important symptom, direct smears as a free test are offered in public health centres, coughing is the only mechanism of transmission, and the disease can be cured.

None of the leaflets used worrying words, though TB is in itself a distressing word for many people. In spite of the fact that the leaflets might have been a good value for money, and that its content was in line with the postulates of the Health Belief Model, the characteristics of their format are far from the ideal. A paper of different quality, the use of colour, a bigger font size and double line spacing in the texts might have improved its appeal to the readers. However, it must be considered that the segment of the audience targeted by newspapers was very small, as the surveys assessing impact demonstrated, and that the costs of a more appealing leaflet was really very high.

7.3.2 PROGRAMME EXPOSURE.

The proportion of the whole population of the city that was exposed to the messages of the campaign was determined by surveys for the television audience, and by a question in the post-test survey. During the six weeks of campaign (from April 6th until May 20th) one evening news programme and six television chat shows dedicated part or the whole of the programme to presenting the messages of the campaign (see Table 7.12).

Four of the six television programmes were chat shows for the so-called 'family segment'. The other two ('Salud hoy' and 'Doctores en medicina') were medical magazines for the general public. "Noti5", the daily night news programme presented at 8:30 p.m., dedicated only two-and-half minutes on the day of the launching of the campaign. However, one of the two television spots of the campaign was presented alternatively almost every night during the advertisements break of Noti 5, and also at other different times during the six weeks of the campaign.

Table 7.3 shows the television audience ratings for five out of the seven television programmes described above. According to these data the audience rating for "Noti 5", the television news programme, was much higher than for the other programmes, particularly during the first three weeks of campaign (data covering March 28th - April 24th), which started on April 8th. It ranged from 28.9 to 41.0% of the households surveyed, depending on the day of the week. The audience rate for "Noti 5" during the second period (April 25th-May 29th) covering the second three weeks of campaign (the campaign finished on May 21st) was lower than the first, but still higher than the audience for the rest of the television programmes, which did not achieve audiences of more than 8.0% in any case.

Information taken from the post-test survey complements that provided by the television audience surveys. Table 7.14 shows what proportion of the whole population remember having received any of the messages of the campaign. These data indicate that, at least, 49.8% of the whole population was exposed to the campaign. Significant differences between the age groups can be observed but not for educational, socio-economic or gender groups. The proportion of people reporting having received messages through at least one source increased from 35.8% in the 15-24 years group, to 68% in the 55-64 years group ($p<0.002$).

Table 7.13 Percentage of television audience ratings of those programmes that presented the messages of the campaign.

Programmes audited during March 28-April 24/1994	**Audience ratings according to the days that the programmes were presented**									
	Monday		Tuesday		Wednesday		Thursday		Friday	
	H*	P**	H	P	H	P	H	P	H	P
Noti5	41.0	20.0	28.9	13.7	40.3	18.9	28.0	12.6	30.6	12.8
En Familia	5.6	2.1	8.0	3.0	—	—	7.5	2.3	5.8	2.8
Punto de Encuentro	—	—	—	—	—	—	—	—	3.9	0.8
Salud Hoy	—	—	—	—	—	—	0.3	0.1	—	—
Doctores en Medicina	—	—	—	—	—	—	—	—	0.9	0.3
Programmes audited during April 25-May 29/1994										
Noti5	25.9	11.4	19.2	8.6	16.9	7.5	17.0	6.0	15.4	6.2
En Familia	7.0	3.4	6.0	3.2	—	—	5.9	2.8	5.3	2.7
Punto de Encuentro	—	—	—	—	—	—	—	—	1.9	0.6
Salud Hoy	—	—	—	—	—	—	1.0	0.3	—	—
Doctores en Medicina	—	—	—	—	—	—	—	—	0.6	0.2

Source: Procivica TV Ltd. (On data produced by Nielsen de Colombia Ltd.).

* Percentage of the total number of households where somebody reportedly watched this programme the day of the survey.
** Percentage of the total number of people living in the households surveyed that reportedly watched the television programme.

Table 7.14. Distribution of exposure (memory of having heard, watched, or read messages) to campaign for TB control by socio-demographic variables in Cali (1994).

Characteristics	Exposure to the campaign (N=412)		*p* -value
	Yes n - (%)	No n - (%)	
Sex			0.199[a]
Female	111 (53.9)	99 (47.1)	
Male	94 (46.5)	108 (53.5)	
Age			0.002[b]
15 - 24	48 (35.8)	86 (64.2)	
25 - 34	41 (52.6)	37 (47.4)	
35 - 44	39 (54.9)	32 (45.1)	
45 - 54	34 (54.8)	28 (45.2)	
55 - 64	34 (68.0)	16 (32.0)	
65 - +	9 (52.9)	8 (47.1)	
Education level			0.304[b]
Primary or less	54 (52.4)	49 (47.6)	
Secondary	106 (45.9)	125 (54.1)	
Higher education	38 (57.6)	28 (42.4)	
Other	7 (58.3)	5 (41.7)	
Socio-economic status			0.143[b]
High	19 (41.3)	27 (58.7)	
Upper middle	53 (51.0)	51 (49.0)	
Low middle	73 (57.0)	55 (43.0)	
Low	60 (44.8)	74 (55.2)	
Total	205 (49.8)	207 (50.2)	

[a] Chi square for 1 degree of freedom; [b] Cramer's V

7.3.3 NETWORK ANALYSIS.

Interviews of HCWs appointed to the TB programme gave information about the way in which the messages of the campaign were diffusing throughout the community. From the second week onwards they began to report comments about the campaign from people attending health care units. At this time, and during the rest of the campaign, the labs reported a two to threefold increase in the daily number of direct smears they usually processed, a fact without historical precedents. This strongly suggests that the messages did diffuse through the community to a great extent.

Interviews with HCWs suggest that the messages of the campaign spread in different ways: direct diffusion from the media sources to the people targeted, and diffusion from peer to peer. An undetermined number of people demanded direct smears by following the advice given by the campaign, according to what many patients told the HCWs. However, many others were just responding to a medical request. Several HCWs reported that many patients with a chronic cough asked medical doctors to give them an order form for direct smears, rather than waiting passively for the medical advice about their symptoms. A typical example of the diffusion of messages from peer to peer was reported by one nurse who assisted a woman who, after watching some of the messages of the campaign, went to visit her neighbour, an individual with a chronic cough, and convinced him to take a direct smear—which eventually gave a positive result. Another example of how people reacted to the campaign messages was given by some interviewees. They reported having observed people using the text of the first television spot ("more than 15 days coughing...?") (see the VHS tape enclosed to this thesis) to exert social pressure on those with a chronic cough, in a gentle and funny way, to make them concerned about their symptoms.

7.3.4 PROGRAMME ACCEPTABILITY.

Perceptions about the acceptance of the campaign was obtained from seven group interviews undertaken, just after the campaign finished, with lay people, HCWs of private occupational health units, and HCWs of a publicly funded general hospital. Overall, the results of this component of process evaluation suggest that the campaign was well accepted in the community.

Interviews showed that many occupational HCWs had a very poor awareness about TB as a public health problem. This is partly explained by the fact that these HCWs deal with a population at a lower risk of TB. In general, both HCWs and lay people participating in the interviews held wrong beliefs about the mechanisms of transmission and quite ambivalent feelings towards TB patients. Further exploration of these beliefs and feelings contributed to warm up the discussion, which was particularly intense among two groups of lay people, and the hospital HCWs—particularly when dealing with the implications of TB for a sex life. Some of the participants in all the groups spontaneously made a timid reference to the messages of the campaign television spots for backing up their claims during the discussion. However, about half of those participating in the lay people groups, and less than one a quarter among the HCWs group reported having watched, read or listened to any of the messages of the campaign. The proportion of people that reportedly watched any of the television spots increased to more than half among the lay people and one third among the HCWs once these were presented as a prompt. Radio and newspapers were not mentioned in any of the groups as a source of information about the campaign.

When participants were asked about their opinion on the format and contents of the television spots most of them agreed in finding this information extremely relevant for the whole community. The format of the messages was widely accepted by the participants, except for some hospital nurses who considered that the television spots made the advice of the messages not very appealing to follow. However, they were not able to specify what elements of the format (actors, background, music, texts, colours, scenery, etc.) made the messages unattractive. Most of the participants in all the groups considered the messages clear enough and believable but not all of them agreed on the extent to which the behaviour suggested in them was feasible. For example, a small number of participants in the occupational HCWs group considered that it was unrealistic for everybody to demand a direct smear test every time she or he had a cough for more than fifteen days. They argued that a chronic cough was a very common symptom, particularly among people with high rates of asthma or living in areas with high air pollution.

On the other hand, although lay people and hospital HCWs found that the information about mechanisms of TB transmission was believable, many in these groups stated that they did not feel capable of having closer social contact with TB patients. Although none of the participants considered that the messages were frightening they still considered TB as a worrying disease because of the social rejection it entails. HCWs felt that the chances of this campaign achieving its goals were low because of its short time and low intensity. This criticism was also made by lay people, who asked why these kind of messages on health issues were not broadcast more often and for a longer time.

7.4 RESULTS OF THE ASSESSMENT OF THE OBJECTIVES UNDERPINNING THE PROGRAMME.

The fourth research question of this evaluation aims to examine the objectives of the campaign. I have used the *validation* level of Fischer's (1980) evaluation model to assess these objectives and to identify the values supporting the campaign. To some extent, assessing the objectives is nothing else than answering the question '*who* proposes *what* for the control of TB and *why*'. Three aspects are explored at this level of the evaluation, namely, the political context, the empirical justification of the objectives, and the assessment of the nature of the very last criteria that can still have empirical support.

7.4.1 POLITICAL CONTEXT OF THE CAMPAIGN: WHO WERE THE POLITICAL ACTORS?

In this section I answer the question 'who are the political actors of the programme under evaluation?' proposed by Fischer (1980). Answering this question helps to clarify the political context by identifying the individuals and bodies which selected the criteria for assessing the merit of the campaign, and by clarifying their interests, values, and access to resources and other forms of power.

At the local level there were three important political actors: the LAC-Valle, the Secretariat of Public Health, and the Mayor of the city at the time of the campaign. At the international level there were two political actors, WHO and the World Bank. Although these institutions did not participate directly in the campaign they exerted a strong indirect influence on decisions taken by the Secretariat of Public Health and the LAC-Valle. The motivations, goals, objectives, values, and real power and influence of these actors (determined by their economic resources, knowledge, social connections, information, access to mechanisms of political and economic control) is substantially different. At one extreme is the LAC-Valle whose goals are mainly driven by the social sensitivity of their members to the suffering of PWT, and its main power lies in its social connections. At the other extreme is the well-known agenda and formidable political and economic power of the World Bank.

The Secretariat of Public Health

The administrative structure of the local government in Cali mirrors that of the central government and consists of several Secretariats that are accountable to the Mayor and to the city council. By 1994 the decentralisation process started in the 1980s (von Haldenwang 1997) was well advanced, particularly in Cali. This meant that the Secretariat of Health got more administrative power, more space for local participation in decision-making, and some degree of independence from the Ministry of Health for tackling public health problems. However, the Secretariat continued to be responsible for implementing and adapting some specific national public health policies to meet the local needs, such as the policy for TB control (for a detailed description of how health care services were provided at the time of the campaign see chapter five, p. 145).

The Secretariat is widely credited for achieving important goals in health services such as ambulatory surgery (Shepard et al, 1993) and primary mental health care (Climent et al, 1983), and for contributing decisively to the reduction in child mortality. However, the most important achievement for which the Secretariat has been praised is the extent to which the strategy of primary health care proposed by WHO has been implemented in the city (Rojas et al, 1988). Indeed, the medical prevention component of the strategy is well developed. This is mainly the result of the leadership of academics and public health practitioners. During the last 40 years local health care policy in Cali has been developed collaboratively by the members of the Faculty of Health at the Universidad del Valle and by the Secretariat. In fact, for most of the last 20 years the Secretary of Health has also been a Professor of the Faculty of Health. In the words of Lang (1988),

> "the advocates of community health controlled the bureaucracy: the university and the health department had been allies for over a decade" (p. 77).

This phenomenon of the influence of the medical establishment in the public health policy has been reported also at the ministerial level, not only in Colombia (Ugalde 1978) but also in other LDC (Walt 1994). In the case of Cali, this close relationship between both institutions can be dated back to the 1950s, when the central Government established a medical school in the recently created Universidad del Valle. Support provided by the Rockefeller Foundation helped to achieve high quality standards in training, and a very good reputation in the hemisphere region by the 1960s when its alumni became part of the medical 'brain drain' working in the United States. At the same time a trend toward community health care developed, led by the Faculty of Health. In 1961, a pilot project in the rural area of Candelaria, a nearby municipality, began training *health promoters*—nurse assistants specialising in providing preventive health services at household level. The training of medical doctors in community medicine, which was the core of medical training for many years, followed in the wake of this project. Under this influence medical preventive activity became the most important programme of the Secretariat of Public Health. This, and the fact that a public health department at the Faculty of Health is traditionally dominated by medical doctors, explain to a great extent why the forms of primary health care and health promotion that have applied in Cali are based mainly on the medical model of health promotion.

The League Against Tuberculosis and Lung Diseases (LAC)-Chapter of Valle.

In order to understand more clearly the role played by LAC-Valle, and how it interrelates with the other political actors in the campaign it is useful to have a look at the history of this organisation. LAC was founded in the late 1930s in Bogota (Colombia) by the wife of the then President of the country. She was a charismatic woman who promoted many other charitable institutions aiming to help poor people, particularly children. In fact, the first aim of LAC was to help those children who were left orphaned while their parents stayed for long periods in sanatoria receiving treatment for TB. The founder wanted the volunteers to be exclusively females. This is not surprising in a society which even is very much a patriarchal one where caring, in this case for poor children, is considered a female role. The overwhelming majority of the members and trustees of the charity are women, though they are caring not only for children but also for adults with TB.

In the following years several chapters of LAC were established throughout the country. In the early 1940s a chapter was established in Cali by a group of upper class women, a strategy still employed nowadays for founding new chapters. With the discovery of effective drugs for curing TB and, therefore, the progressive closing down of sanatoria, the LAC had to adapt by changing its aims. That was not difficult since the charity followed from its beginning the principles of the crusade against TB which was launched at the beginning of the century by what is known today as the IUATLD. In fact, some time after being founded, LAC became a 'constitutional member' of the IUATLD (today the biggest NGO in the world working in the field of a specific disease) (Murray 1995). The new and more generic aim pursued by LAC, in line with IUATLD, was to contribute to reducing the burden of TB in the health of humankind by collaborating with local and national government in the implementation of the bio-medical strategy of TB control.

Meanwhile, the chapter that was founded in Cali with the name of LAC-Chapter of Valle (the name of the department of which Cali is the capital) continued to provide some help to PWT. During the 1970s the charity started selling X-ray services to the community, a move that turned the chapter into the one with the most solid economic position among the LAC-Colombia. In the late 1980s, LAC-Valle started a process of organisational and political reform. This process was fuelled by the solid economic position achieved by the charity (which gave it autonomy in respect to LAC-Colombia), and the slow pace set by the Secretariat of Public Health and LAC, locally and nationally, for accomplishing their roles in respect to TB. In fact, the trustees realised that, in order to fulfil their institutional mission, the chapter needed to play a more active role in the local arena, going beyond the provision of some free services to PWT and becoming a participant in the decisions about TB control in the Secretariat of Public Health. This was a radical departure for an institution that had been a passive ally of the government. It now wanted to play a more pro-active role. The board of trustees of the chapter toppled the executive director at that time, became independent from LAC-

Colombia in every respect (but kept the basic guidelines established for the charity at the central office in Bogota), and started a process of defining a more pro-active role for the institution.

It was clear from the beginning to the managers of LAC-Valle that the new role they wanted to play was both a technical and a political task. It was technical to the extent that it was necessary to be knowledgeable about the epidemiological and managerial concepts applied in the bio-medical model of TB control. It was political to the extent that it had to take into account local centres of power whose interests were at stake in any public health initiative dealing with respiratory diseases—such as the local association of pneumologists and radiologists. Unfortunately, at that time the charity lacked both the human and technical resources for accomplishing both tasks. However, the board of trustees of LAC-Valle, was composed entirely of female volunteers with very high socio-economic status and excellent connections with, if they were not actually a part of, the local economic and political elite. This placed them in an ideal position for carrying out the changes they wanted for the charity and for the programme of TB control. The charity also recruited a new executive director (a lawyer with excellent leadership skills) and a medical advisor (a physician pneumologist, at that time chief of the TB control programme at the Secretariat of Public Health), in order to build up the institutional capacity required for the new way in which the charity wanted to operate.

After internal deliberations, a new mission was adopted by the charity: to contribute to improving the quality of life of PWT and those with respiratory disease by, among other strategies, complementing and facilitating the functions of the TB control programme of the Secretariat of Public Health. The changes in the institution included the way in which it related to PWT. For example, instead of the paternalistic charitable activities traditionally carried out by volunteers (providing food, drugs and diagnostic services to PWT), these were now redefined and structured along the technical concept of 'social support' (Burleson et al, 1994). That is, a social worker and physician selected PWT at high risk of non-adherence to treatment for TB and provided them with all the information, emotional and material support necessary for taking the drugs and, in several cases, facilitated access to vocational training and opportunities for work. The process for winning a place on the local board where decisions dealing with the programme of TB control were taken was less simple. In spite of the fact that the charity gained some influence in the way that the TB control programme was run, the patron-based political procedures operating within the Secretariat of Health made it impossible to get the fundamental changes wanted by the charity. It was at this moment that the third actor relevant for the political context of the campaign emerges, the Mayor of the city between 1992-1995.

The Mayor of Cali (1992-1995).

From 1986 until the present day the mayors of the Colombian municipalities have been democratically elected. In 1992, a physician specialising in public health became the mayor of Cali, after leading an independent political movement which triumphed at the elections. He was the cousin and brother of the president and vice-president of the board of trustees respectively, and a relative of some other members of LAC-Valle. His election was an enormous boost for developing the agenda of LAC-Valle, since the head of the Secretariat of Public Health is appointed by, and accountable to the mayor. Although the mayor did not intervene directly in any aspect dealing with the TB control programme, the charity now gained powerful leverage for negotiating with the Secretariat of Public Health about how to reshape the programme (a project described in detail in chapter five, p. 146, whose last stage was the mass media health education campaign). Although the political backing he gave the charity turned the mayor into a political actor, he had a second and, perhaps, more important role. This was determined by the way in which the re-shaping of the TB control programme and the mass media campaign correspond to his programme of government. What matters for this second role is the advocacy developed by the mayor for strategies of socio-economic development based on human and social capital theory (Putnam et al, 1993), a model promoted by the local structures of economic and political power (Mohan 1994; Velasquez 1996). In order to clarify how the mass media health education campaign corresponds with this notion of development it is necessary to describe some antecedents of how the mayor worked out programmes in Cali based on social capital theory (see chapter two, p. 34).

Before his election the mayor had been Professor of the School of Public Health, Rector of the University of Valle, Secretary of Public Health—positions within which he strongly influenced local public health—and Director of *Fundacion Carvajal*. This foundation was created in the early 1960s by the owners of a local and very successful printing company, that later became one of the first Colombian multinationals. The company donated 40% of their shares to create a foundation that "would seek both to help the less favoured sectors of the society and contribute to the social and economic development of Colombia (...) address(ing) the principles of justice, solidarity and social responsibility" (Cruz 1994). The foundation was, in a way, a pioneer in corporate-based philanthropic endeavours during the last thirty years in Colombia, though other rich socio-economic groups of the region had also set up organisations aiming to promote socio-economic development (Lang 1988).

During the 1980s the foundation developed a model for promoting the development of the poorest communities of the city that included micro-enterprise initiatives, self-build housing, technical support in management and accountancy to food shop owners, recycling, education and primary health care (Cruz 1994). Undoubtedly the programmes worked out by the foundation have contributed to reducing the levels of poverty in the city, though the poorest people were not the target of their programmes (Cruz 1994). The poorest people, who have a higher risk of developing TB, escape starvation by begging, petty-crime, recycling or prostitution, or by receiving help from other less poor people (Dufour et al, 1997). They have been the target of the so-called 'cleansing death squads' (Franco 1997), which if not supported are at least tolerated by the police, and which produce an extremely poor and inadequate response bordering on indifference from both private and governmental institutions (Bromley 1981).

From its own experience the foundation allegedly learnt that

> "deprived communities do not need gifts and charity (...) (that) effective interventions are those that recognise opportunities in the settlement and (...) support and complement (but do not substitute for) the efforts of the (deprived) people (who), by participating in effective programmes (...), demonstrate a spirit of citizenship and love for the city" (Cruz 1994) (p. 181).

This discourse, clearly representative of social capital theory (Putnam et al, 1993; Hyden 1997) had already been widely preached and developed by the economic elite of the city for more than 20 years, particularly the component dealing with the civic behaviour of citizens (Velasquez 1996). Once the Director of the foundation became mayor of the city he followed the same principles and, to some extent, successfully implemented some social programmes. In fact, social programmes facilitating the access of poor people to water, electricity, sewerage, education and housing were strongly pursued during his administration. One of the outstanding programmes dealt with the provision of housing based on the scheme of 'sites-and-services', which seems to reach the poorest more efficiently (Gilbert 1997). Another interesting example comes from his policy for peace and security. In a country ravaged by violence like Colombia, and where the State adopts a repressive strategy to deal with its citizens (Giraldo 1996), his government adopted a conciliatory attitude, with measures ranging from the banning of handguns to micro-enterprise development programs for teenage gang members, not to mention mass media campaigns promoting basic rules of behaviour for urban life (De Roux and Chelala 1994; World Bank 1997).

Not surprisingly, the way in which Cali has developed during the last thirty years has not passed unnoticed by the World Bank, which has been ready to represent the city as an example of how economic growth can promote social development and reduce poverty (Mohan 1994). The same applies to the achievements of the city in the implementation of the strategy of primary health care of 'Health for All 2000', praised by WHO (Rojas et al, 1988). Both, WHO and World Bank are other political actors in the mass media campaign.

The World Health Organisation.

The WHO is a specialised agency of the UN created in 1948 to help nations to control disease and to improve quality of life. It has four main functions:

- To give world-wide guidance in the field of health
- To set global standards for health
- To cooperate with governments in strengthening national health programmes
- To develop and transfer appropriate health technology, information and standards

For many people the most important achievement of this organisation has been the eradication of smallpox in 1976, and the recent strides towards the eradication of polio, guinea-worm disease, and leprosy. Unfortunately, WHO has been less successful in controlling TB. During the 1960s and 1970s WHO made important contributions to TB control by helping to implement control programmes in less developed countries, and by funding operational and epidemiological research. However, by the early 1980s the WHO had only one employee responsible for all the functions of the unit of TB control, in spite of the fact that the death toll in less developed countries had not changed significantly. It was only when the HIV epidemic gained momentum in the mid 1980s that TB came back on the agenda of WHO. By 1993, the agency declared a world-wide emergency in TB (a step never taken before by the agency with respect to any other disease). At present the WHO Global Programme of TB, with a staff of around 17 people, advocates the bio-medical model of TB control and promotes DOTS as the best strategy for controlling the disease.

While the role of WHO in the eradication of some diseases is unquestionable, for other people—less worried about disease in itself and more concerned about the forces that promote it—the most valuable "contribution made by WHO has been to help win acceptance of the relatively new perception that *health is a basic human right* and to promote the idealistic goal of *Health for All*" (Werner et al, 1997) (p. 171). This notion of health was consolidated in 1978 with the Alma Ata Declaration, where primary health care was presented as the strategy for achieving *Health for all in the year 2000.* According to WHO, *Health for All* is based on the following key values:

> "recognition of the universal right to health; the application of ethics to health policy, research and service provision (respect for individual choice, personal autonomy and the avoidance of harm); the implementation of equity-oriented policies and strategies (universal access to adequate quality care without an excessive burden on the individual); and the incorporation of a gender perspective into health policies and strategies" (WHO 1998b).

This notion of health and the values of *Health for All* have been promoted by WHO, and reinforced with the health promotion discourse presented in the Ottawa Charter, and the subsequent declarations of health promotion. However, primary health care as a strategy for achieving *Health for All* was attacked from outside the WHO because of the costs and unrealistic goals. Instead, selective primary health care (targeting high risk groups with cost-effective interventions) was proposed as the most rational way to provide health to poor people (Walsh and Warren 1979). The loss of power of WHO, the debt crisis suffered by Latin American and Sub-Saharan African countries during the 1980s, and the consolidation of the neoliberal economic model gave the final blow to the model of primary health care proposed in the Alma Ata Declaration and to its values. A new paradigm of health and health care, then, was presented and enforced by the World Bank, who became the policy maker of public health for the less developed countries (World Bank 1993).

The World Bank

The World Bank and the IMF were created by the allied countries in 1944 in Bretton Woods, New Hampshire (United States), with the aim of rebuilding the economy of the European countries hit by the Second World War. The main function of the IMF is to oversee currency issues, to give short-term loans to those countries having problems with the balance of payments, and to enforce the respective economic adjustments. The World Bank supports economic growth more directly by giving loans to medium and large-scale projects in education, health and infrastructure. Legally speaking both the World Bank and the IMF are specialised agencies of the UN, though in practice they are independent of the UN. This is a result of the voting systems operating in these bodies: while in the UN one member represents one vote, in the World Bank/IMF voting is proportional to the economic power of the member. Thus, by 1995, 40% of the voting power was distributed between United States (17%), Japan (6.5%), Germany (5%), United Kingdom (5%), and France (5%) (Ilon 1996). Consequently, the policies promoted by these bodies reflect the interests of their most powerful members or, at the very least, do not challenge them.

At present the World Bank comprises five organisations: the International Bank for Reconstruction and Development (IBRD), the International Development Association (IDA), the International Finance Corporation (IFC), the Multilateral Investment Guarantee Agency (MIGA), and the International Centre for the Settlement of Investment Disputes (ICSID). The IBRD, created in 1944, lends to middle-income countries to allow payment for development projects in education, health, infrastructure, and to support changes in macroeconomic policies. The funds of the IBRD come from selling debt securities in the world's financial markets. The IDA, created in 1960, lends to low-income countries (usually with per capita incomes of $925 or less) which cannot afford the interest rates of the IBRD. IDA loans are long term and interest free. The Association receives funds from government contributions, IBRD profits, and repayments on earlier IDA credits. While the IBRD and the IDA give loans to governments, the IFC gives loans to the private sector under different conditions. MIGA and ICSID are institutions giving insurance protection to those companies investing in other countries, and arbitrating disputes resulting from changes in the policies and rules of foreign investment.

Once the initial aim of World Bank/IMF was accomplished in the early 1960s, both organisations moved to the promotion of economic growth as the strategy for accelerating the development of the less developed countries. Nowadays the World Bank presents the control of poverty as it most important aim. Its current strategy for controlling poverty is the promotion of growth through the creation of market economies in the context of global liberalisation of the economy. In the creation of human capital, essential for economic growth, health and the provision of health care have a very important place, and this was defined in the World Development Report 1993 *Investing in health* (World Bank 1993). In this report health is defined as a private responsibility and health care as a private good. In line with these principles the state should only provide those basic and highly cost-effective health care services that poor people cannot easily afford. Health care systems must be reformed and the provision of those services which are less cost-effective should be left to market forces.

Disability adjusted life years (DALYs) were established as the instrument to measure the cost-effectiveness of health care interventions (Jamison et al, 1993). By using this instrument the value of life is determined by its potential for economic input into the market. The life years of children and the elderly, for example are less valuable than those of young adults. Highly cost-effective health care interventions are those with high value of DALYs and low cost. Thus, DALYs became the yardstick the Bank uses to set priorities in health care. The same yardstick makes the bio-medical strategy for TB control the most cost-effective intervention available for LDCs (Jamison et al, 1993). It is understandable then that the Bank is now

> "the largest financier of TB control activities with commitments during the 1990s exceeding US$ 300 million. Large projects in India, Bangladesh and China absorb the majority of these funds, but smaller Bank-financed projects are being pursued in other countries (...) The projects have been innovative in applying the DOTS approach to local settings, in designing and implementing the National Tuberculosis Programs (...) WHO and World Bank together with a range of bilateral, multilateral and non-governmental organisations are working to increase national and international investment in fighting this disease, in broadening awareness of successful approaches, and in seeking and sharing solutions to operational problems identified in the process" (World Bank Human Development Department 1997).

Summarising, we have a set of political actors all of whom advocate and support the bio-medical approach to TB control. First, at the operational level of the campaign, there is the LAC-Valle. This is a charity led by a group of women belonging to the socio-economic elite of the city, genuinely interested in providing social support to PWT, particularly to the poorest. They were advised by a group of medical doctors, including myself, who were convinced and convincing that TB was a problem that could be resolved with a bio-medical approach, provided it was properly implemented following the parameters proposed by the IUATLD, the WHO, and the World Bank. Secondly, there is the Secretariat of Public Health, the body accountable to the Mayor of the city and to the Ministry of Health of Colombia for the full implementation in Cali of the National Programme for TB control.

This means the distribution of supplies, supervision and continued education of HCWs, epidemiological surveillance, and provision of diagnostic and treatment services. Although the Secretariat has been considered as a model of how to implement the primary health care strategy of *Health for All*, medical preventive activities have traditionally been privileged over other components of the strategy. This makes Cali an appropriate place for the biomedical model of TB control to flourish. Thirdly, there is the Mayor of the city, whose paramount political agenda was to build social and human capital, as a basis for socio-economic development. Within this agenda the promotion of harmonic and co-operative social relationships among citizens (as those promoted by the campaign for dealing with prejudice against PWT), and the maintenance of health among people of working age are fundamental. The bio-medical model of TB control suits very well here since one of its short term outcomes is a reduction in the mortality among 15-44 age group, considered to be the most economically productive period of life.

Finally, there are the WHO and the World Bank, international bodies that provide guidelines for the control of diseases and the promotion of health and that, particularly in the case of the Bank, enforce adherence to their recommendations by the power deriving from their economic resources and ability to fund projects. The notion of development promoted by these bodies is based on economic growth which relies on the building of human and social capital. For the economic growth that less developed countries must pursue, the World Bank recommends, among other strategies, the provision of health care based on rationing techniques of a utilitarian nature, namely cost-effectiveness. When this rationing technique is applied to the control of TB, the biomedical model of TB control emerges as the most cost-effective of all the health care activities available. Although using cost-effectiveness analysis as a fundamental basis for health policy making is not fully supported by WHO, the Global Programme of TB does endorse this approach employed and promoted by the Bank.

7.4.2 WHICH CRITERIA DID THE SPONSORS OF THE CAMPAIGN CHOOSE TO JUDGE ITS MERIT ?

A departure point for the *validation* procedure (finding out the justification for the objectives established by the campaign) might be to examine the reasons for considering why it is a good thing to provide the specific information about TB that was given by the campaign to the community. The answer to this question is given by the programme theory of the campaign. This theory posits that the provision of specific information about TB using the techniques of social marketing predicts an increase in the demand for direct smears, and a reduction in the level of prejudice against PWT. The section of this chapter dealing with the impact of the campaign shows that this postulate of the programme theory was correct: the campaign produced a significant decrease in the levels of prejudice against PWT, and a significant increase in the demand for direct smears.

However, and following the strategy proposed by Fischer (1980), one might wonder why it is a good thing to increase the demand for direct smears and to reduce the levels of prejudice against PWT?. To answer this question requires an examination of the relationship between diagnostic coverage, the demand for smears, prejudice against PWT, and the annual risk of TB infection. To achieve this aim it is useful, and relevant, to review the antecedents of the TB control programme in Cali.

A project aimed at revitalising the TB control programme in Cali was carried out before the campaign. Although high cure rates were then being achieved by the programme, a detection rate lower than what was expected (in labs performing with optimum standards) suggested that the diagnostic coverage was poor. Empirical evidence shows that combining high cure rates with a high detection rate produces the strongest impact on the annual infection risk of TB (Murray et al, 1993). This suggests there is merit in increasing diagnostic coverage. The logical approach for increasing diagnostic coverage consists of nothing other than increasing the number of people with a chronic cough that is examined with direct smear tests. Since the capacity of the passive case finding strategy was considered by the managers of the programme to be already at its limit (all the strategies for committing the HCWs to ask patients about chronic cough were exhausted), the remaining strategy to be employed was to stimulate the public demand for direct smears with a media based campaign.

There are at least three reasons, one of ethical and two of empirical nature, making it worthwhile to reduce the levels of prejudice against PWT. First of all, it is obvious that the human dignity of PWT is diminished as a result of the prejudice against them. Since human dignity is seen as valuable, at least within the context of this campaign, any action aiming to reduce this prejudice can be considered good. Secondly, some evidence suggests that the discrimination suffered by PWT as a result of this prejudice contributes to patients default and non-adherence to TB treatment, both of which lower cure rates. Finally, formative research for the campaign showed that this prejudice is a contributor to delayed diagnosis and low detection rate,since people with a chronic cough might be hesitant about demanding diagnostic services (Jaramillo 1998). Therefore, if prejudice negatively affects the human dignity of PWT, detection rates and, arguably, cure rates, it is a good thing that a health education programme reduces this prejudice.

For assessing the merit of the campaign we end up with a syllogism like this:

Reducing the annual risk of TB infection with a TB control programme is a good thing. This mass media health education campaign had a positive impact on components of a TB control programme contributing to a reduction in the annual infection risk. Therefore, the mass media health education campaign is also a good thing.

It follows from this that 'reduction of the annual risk of TB infection' is the criterion for judging the merit of the campaign. It must be taken into account that it is not possible to measure with any degree of certainty the real effect of the campaign on the annual risk of infection. In fact, the evaluation research literature differentiates between *impact* (measurable short-term effects) and *outcome* (long-term effects that can be inferred from the accepted theory supporting the programme) (Israel et al, 1995). Hence, by using the epidemiological basis of the biomedical model of TB control we can infer the probable outcome of the campaign from its impact. It might be argued that the campaign contributed to reducing the annual infection risk in Cali in two different ways. Firstly, because it is demonstrated that the campaign increased detection rates at a time when high cure rates were being achieved. Secondly, and arguably, it contributed to an unknown degree to reducing default and non-adherence to treatment by reducing the levels of prejudice against PWT. These positive effects of the campaign on the annual infection risk were only sustained for the short time after the end of the campaign.

So far so good, but the annual risk of infection can also be reduced by measures which differ from diagnosing and treating PWT, such as better nutrition (McKeown 1976; Fogel 1997) and good housing. This leads us to wonder: why is it good to reduce the annual risk of infection with a TB control programme based on a biomedical strategy? Here we move to the third set of questions in the validation level, which aims to examine the criterion chosen for judging the merit of the campaign.

7.4.3 WHICH VALUES UNDERPIN THE CRITERIA CHOSEN TO JUDGE THE MERIT OF THE CAMPAIGN ?

In the *validation* level, Fischer (1980) proposes four different probes (relevance, situational context, multiple goals, and precedence) (see chapter four, p. 111) for examining the criterion identified, which in this case is 'reduction of the annual risk of TB infection with a TB control programme based on a biomedical strategy'. From this procedure the values underpinning both the objectives, aims and goals of the campaign, and the policy of TB control become clear.

Relevance refers to the extent that the campaign's policy of 'reduction of the annual risk of TB infection with a TB control programme based on a biomedical strategy', within which the aims of the campaign are framed, is based on established causal knowledge. Thus, to clarify the relevance of the criteria chosen for judging the merit of the campaign, it is appropriate to look at the evidence supporting the biomedical approach to TB control.

Large-scale use of anti-TB drugs during the 1960s and 1070s demonstrated that they could reduce the annual infection risk by up to 5%, provided that high cure and detection rates were achieved (Grzybowski et al, 1976). This means that a well-implemented programme of TB control can reduce by half the incidence of TB every 15 years. Due to the many logistic and financial problems faced by the TB control programmes for reproducing these positive results, the IUATLD successfully developed pilot projects in some Sub-Saharan African countries during the 1980s, where a due balance was kept between costs and results (Murray et al, 1990). The World Bank and WHO were ready to capitalise on these experiences, discovering in this model of TB control the most cost-effective action in health care (World Bank 1993). Nowadays the same model of TB control developed by IUATLD in the 1970s and 1980s is presented by WHO and World Bank with a renewal of the label: DOTS. WHO gives ten reasons, empirically demonstrated, to justify the use of DOTS:

> 1. "Cures the Patient (...)
> 2. Prevents New Infections by curing the infectious patient (...)
> 3. Stops multi-drug resistant TB: makes it virtually impossible for a person to develop incurable and ultimately fatal forms of TB (...)
> 4. Cost Effective: Treatment of infectious cases with DOTS costs between $1 and $5 for each healthy year of life (DALYs, or disability-adjusted life year) saved (...)
> 5. Community Based DOTS does not require hospitalisation, a massive infusion of new technology or resources, nor the creation of a new health structure (...)
> 6. Extends Lives of AIDS Patients (...)
> 7. Protects the Workforce: Nearly 80 percent of those inflicted with fever and coughing from TB are in their most economically productive years of life. This represents a workforce equal to the size of all international employees of IBM,

> Coca Cola, General Motors, Kodak, Microsoft, Xerox, Motorola, Procter & Gamble, Unilever, Philips, Fiat, Siemens, Volkswagen, Benetton, British Petroleum, Tata Group, Toyota, Mistubishi, Sony and Samsung combined. Without the DOTS strategy, the TB epidemic will continue to burden the workforce and can reduce self-sustaining families to beggars or welfare recipients (...)
> 8. Protects International Travellers (...)
> 9. Stimulates Economies: The DOTS strategy offers relatively quick payoffs to the economies of developing countries. Studies in India and Thailand have shown that a small investment in the DOTS strategy can save their economies billions of US dollars (...)
> 10.Proven Effective: The initial prototypes of the DOTS strategy were pioneered by the International Union Against TB and Lung Disease ten years ago. DOTS has been successfully implemented in a wide variety of conditions in Tanzania, Guinea, China, Bangladesh, New York City and Peru. Currently, nearly 70 countries have begun using DOTS and are achieving results. Last year, approximately one million TB patients were treated under the DOTS strategy" (WHO 1998a).

These ten reasons can be summarised in just two: first, empirical evidence shows that DOTS reduces the annual risk of infection and, second, DOTS is cost-effective when measured with DALYs. These arguments seem convincing, but it must be taken into account that the above claims of causality are embedded within the epistemological framework of modern epidemiology (see chapter three, p. 83). DOTS certainly reduces the annual risk of TB infection, but there are other forces also impinging on this risk that are ignored by a TB control policy relying exclusively on DOTS. The impressive results achieved by the bio-medical model, and praised by WHO, are less impressive once the role that the behavioural and the socio-economic levels of causality plays in the TB epidemic is considered (see chapter three, p. 83).

Empirical evidence shows that DOTS is only a short- or mid-term solution for controlling the TB epidemic. In fact, its impact on annual infection risk is highly vulnerable, even in the short-term, to the effects of those forces operating at the behavioural and socio-economic levels of causality—which do not operate consistently everywhere. These forces may negatively affect the sustainability of and the generalisability of the biomedical model of TB control.

Sustainability of the policy, that is the political long-term commitment to the use of DOTS, is essential because it only produces a small reduction, 5% per year, on the annual infection risk. However, as the incidence of TB decreases the political support for a strategy becoming even more costly also decreases. In other words, what makes DOTS so appealing today, its cost-effectiveness, is exactly that which makes DOTS less attractive for the policy makers in the long term.

Generalisability of DOTS as a definitive strategy for TB control, that is, the likelihood of its effects to be lasting under any circumstance and in every place, is indeed very poor. The main reason for this is that the biomedical model of TB control is not focused on the pool of infected people of LDC most likely to develop the disease when faced with social stress or HIV infection. The recent understanding of how re-infection with *M. tuberculosis* occurs, explains why the large scale use of 'preventive therapy', particularly in LDCs ravaged by the HIV and TB epidemics, can not protect against those factors contributing to breakdown of those already infected. From the analysis of the development of the TB epidemic in places like USA, Cuba, and the former socialist countries it is clear that even a successful programme based on both chemotherapy and preventive therapy lacks enough protective action against the effects of social stressors and the HIV epidemic on infection and breakdown risk.

These two weaknesses of the biomedical model of TB control, sustainability and generalisability, can not be applied to all of LDCs. In Cali, for example, it is possible to say that the model is not sustainable due to the slow decrease in the notification rate of the disease, and to the pre-eminence of other public health problems such as homicides, domestic violence, and cardiovascular diseases. Sustainability is further reduced by the health care reform that places provision of health services in private hands, whose interests are ruled by the rationale of supply and demand and the hunger for profits, and not by the needs of those at a higher risk of TB. However, the effects of the biomedical model could last to the extent that social policies developed by the mayor, at least at the time of the campaign, have paid attention to housing, HIV epidemic, and employment.

From the *relevance* probe one can conclude that the policy of 'reduction of the annual risk of TB infection with a control programme based on a biomedical strategy' (within which the aims of the campaign are framed) is clearly based on causal knowledge, yet established within the framework of modern epidemiology. However, when this criterion is examined within a wider model of causality there is empirical evidence suggesting that this is an inadequate policy (it is not sustainable nor generalisable, and therefore it has only short- and mid-term impact), and that a lasting reduction of the annual TB infection risk requires addressing the behavioural and socio-economic levels of causality.

Situational context examines the extent to which some characteristics of the programme under evaluation require that an exception be made to the use of the criterion for judging merit. Using the 'reduction of the annual risk of TB infection' is an incontestable criterion for judging the merit of a TB control programme based on DOTS, such as that developed in Cali. However, it is certainly disputable to consider this also as the criteria for judging the merit of a health promotion initiative, more specifically, a mass media health education campaign in TB control. Indeed, health education and health promotion are contested concepts, to the extent that the criteria for judging the merit of the campaign are diverse.

From the perspective of the medical model of health promotion (see chapter two, p. 59) one could say that the merit of the campaign is unquestionable, not to mention the concepts employed in its design and implementation. The campaign aims and objectives are evidence driven, according to the epidemiological jargon, because they are based on established causal knowledge and because their impact is measurable. The problems that the campaign aims to tackle are defined by the biomedical model of TB control. The solution of these problems serves, first of all, the interests of this specific model of TB control. Although it is undeniable that it is good to reduce prejudice against PWT and to inform people about the diagnostic and therapeutic services available for PWT, all the other problems causally related with TB were ignored by this particular campaign. Not surprisingly, the campaign targeted exclusively individual behaviours, the hallmark of medical health promotion. The type of empowerment promoted was focused on learning how to use medical resources (diagnostic services), and on understanding the way in which biological forces operate (mechanisms of TB transmission). Thus, if the campaign is to be judged as a medical health promotion initiative it is not problematic at all to use 'reduction of the annual risk of TB infection' as the criteria for judgement.

From the perspective of social health promotion (see chapter two, p. 60) the merit of the campaign is certainly questionable, as are its conceptual basis and the way in which it was implemented. Although social health promotion acknowledges that TB is worrying, its approach to the problem differs from the medical in a number of ways. Social health promotion relies on a notion of causality where biological, as well as behavioural and socio-economic factors determining TB are important, in such a way that health problems are defined within this wider domain. Thus, this model of health promotion tackles individual behaviour only at the same time that the other causal factors are also addressed. For a social health promoter a campaign should empower people to gain control over the determinants of TB at every causal level. For that aim health education in TB must help people both to learn and to understand how these causal forces operate. Provision of such health education is the basis of community participation in decision-making, a fundamental element of social health promotion. Thus, it is not possible for a social health promoter to use 'reduction of the annual risk of TB infection' as the exclusive criteria for judging the merit of the campaign. The extent to which the campaign contributed to empowering people for community participation, which is not different from the creation of an educated public in the sense given by McIntyre (1987) and Kelly (1995) (see chapter one, pp 43), is the other criterion necessary for judging the merit of the campaign.

From the *situational context* probe one can conclude that the criterion 'reduction of the annual risk of TB infection' is appropriate for judging the merit of a health education campaign inspired by the medical model of health promotion, which in this case successfully promoted the type of patient empowerment encouraged by this model. However, from the perspective of social health promotion, including the Ottawa Charter, this is an insufficient criterion since the campaign did not help people to understand and learn how to have some control of TB determinants beyond the biological level of causality.

The *multiple goals* probe explores the presence of several goals applicable to the programme under evaluation. In fact, the *situational context* sets the basis for identifying two different goals for a health promotion initiative in TB control. The goal of any policy of TB control, including one addressing the different levels of causality, is the 'reduction of the annual risk of TB infection'. Yet, on the other hand, the goal of health promotion varies according to the specific model. Within medical health promotion, the goal of TB health education is to empower 'patients' (the passive targets of public health programmes) in order to increase the efficiency of the biomedical model of TB control and, therefore, to contribute to the 'reduction of the annual risk of TB infection'. Within social health promotion, the goal of TB health education is the creation of an educated public able both to use efficiently the medical services of TB control programmes, and to adopt behaviours reflecting a clear understanding of the determinants of TB, including participation in the decision-making about TB control policies. For social health promoters the creation of an educated public would be the criterion for judging the worth of this health education programme.

Health education that promotes an efficient use of TB medical services is a goal for both medical and social health promotion. However, the question arising within social health promotion is which goal is to be more important: achieving the greatest efficiency possible of the biomedical model of TB control before pursuing other goals, such as the creation of an educated public? Or reaching a due balance between both? In regard the Colombian context it might be thought that initiatives empowering people for political participation is more urgent than the creation of a public mass compliant with medical advice for a disease that has ceased to be an important cause of death, and that already has a control programme which, at least in Cali, does quite well. In other words, there are reasons to believe that the criteria for the 'creation of an educated public' should be more important than the 'reduction of the annual risk of TB infection' at the moment of judging the merit of the campaign. Yet a reading of the Colombian context from another viewpoint might posit that there are no reasons to politicise the contents of this campaign, whose results are to the benefit of everybody in Cali. In other words, health education and health promotion is not the arena for developing political agendas and their goals must, therefore, respond to those needs defined within the medical field.

The *precedence* probe explores how the managers and sponsors of the campaign ranked the conflicting criteria, namely, 'reduction of the annual risk of TB infection with a biomedical programme' and 'creation of an educated public'. As a member of the organisations sponsoring the campaign, and as the person mainly responsible for its design and implementation, I have to say that 'reduction of the annual risk of TB infection' was the only criteria taken into account, and that the 'creation of an educated public' was not considered at all by the bodies sponsoring the campaign. Indeed, managers of the campaign did not find it necessary to debate conflicting goals, nor goals that differed from those arising from the bio-medical model of TB control. However, this by no means imply that the sponsors of the campaign, including myself, were unaware of the behavioural and socio-economic determinants of TB. It is just that for them the 'apolitical' character of action in health care and health promotion was taken for granted. Therefore, their notion of health education is one in which people must be taught how to behave to avoid and cope with disease. This is quite understandable once it is considered that all of those involved with the campaign had a medical background or were adherents of medical health promotion. Yet, at some stage the conflicting criteria must have been discussed and ranked. To find out where and how this ranking occurred it is useful to go back to the role played by the political actors of the campaign, and to the concept of *non-decision making* (which explains how some issues do not come onto the political agenda).[2]

The transnational bodies devising economic and health care policies, like the World Bank and WHO, set the agenda, to a great extent, by which the local political actors of the campaign make their choices. This does not mean that the these local actors lack an agency for devising alternative policies. Indeed, in spite of the fact that their options are structured in such a way that there is not much space for them to manoeuvre, non-decision making is what operates most of times in Colombia when those in power are confronted with issues such as socio-economic determinants of health and poverty. The idea prevalent in the *elite* of the country is that social inequalities are the result of insufficient wealth, and that only economic growth can resolve this problem. Proposing an alternative means to tackling inequalities and poverty, such as looking at how wealth is distributed in the population, is often considered to be a subversive idea, similar to those proposed by the left-wing guerrilla groups. A recent clear example of this was the reaction produced in some sectors of the Colombian mass media in July 1997 (Mendoza

---

[2] According to this model, some issues are not taken into account by the policy makers when they challenge the interests of those in power. The forms of non-decision making include use of force, censorship, though usually it occurs by ignoring or neglecting some issues or interests of specific social groups (Walt, 1994).

1997; Rueda 1997), to a speech of Alfonso Lopez Michelsen, former President of the country (1974-1978), in which he drew attention to income inequalities as the main cause of poverty and poor socio-economic development. This reaction was clearly at odds with the current scientific evidence about the relationship between social inequalities and economic growth (Birdsall and Londoño 1997).

By accepting the World Bank's arguments, and within a non-decision making frame, the local political actors and I, as those responsible for designing the intervention, prefered 'reduction of the annual risk of TB infection with a TB control programme based on a biomedical strategy' over 'creation of an educated public about TB' as the goal of the campaign and, therefore, the criterion for judging its merit. The fundamental reason for making that choice is the high cost-effectiveness of bio-medical treatment of TB compared with the costs entailed in a policy addressing the behavioural and socio-economic levels of causality. This reason, the cost-effectiveness, is founded on a very specific set of choices for allocating resources that cannot be defended empirically but only by argument. These choices reflect the price attached to the target of the resources allocated. It is at this point that the validation level identifies the value underpinning the campaign: a choice that can not be substantiated on an empirical basis but only defended by arguments. These set of values, which are the hallmark of a globalised economy where efficiency is the currency, are further explored here in the context of the health policy promoted in LDC by the World Bank (World Bank 1993)—though this health policy is not implemented exclusively in these countries (Pollock et al, 1995).

These values are presented by health economists as a response to three facts, which are the foundations of health economics (Williams 1995). First, less developed countries have scarce resources for treating holistically all the determinants of TB. Therefore, and secondly, it is necessary to prioritise treatment for some of them. Thirdly, prioritising implies sacrificing something. The aim of identifying what to prioritise led to the construction of DALYs, which is based on three criteria or parameters, namely, discounting, age, and disability. DALYs measures differently at different periods of time (discounting) the years lost from standard life expectancy by premature mortality (age) and the time lived with impaired physical functioning (disability) (Murray and Lopez 1997). The way in which these parameters are valued are the basis for selecting which treatment is going to be prioritised and which one is going to be sacrificed. What is more valued within the DALYs construct is one year of human life lived today by a non-disabled 25 years old person. What is less valued is one year of human life lived in the future by a highly disabled infant or older person. These set of values, as a whole, defines the worth of human life in terms of its capacity for economic production, which is also a manifestation of its health. In line with this, those human lives less suitable for economic production (children, the elderly, and disabled, for example) are less valuable and, therefore, in a disadvantaged position to receive any benefits from a health policy. The ideal pursued with this choice is the maximisation of those commodities resulting from economic growth for the maximum number of people. In other words, those health economists who defend this strategy for setting priorities accept that human beings can be used as the means for some specific ends. In this case the end is economic growth, and the means are healthy human lives. This is the set of values underpinning DALYs, and this mass media health education campaign.

7.5 CONCLUSION

In this chapter I presented the results of the four main research questions I formulated for developing an evaluation of impact, process and objectives of the mass media health education campaign. Assessment of impact shows that the campaign achieved its main objectives of reducing prejudice against PWT and increasing demand for smear tests. Assessment of process shows that the campaign was delivered in accordance with the programme theory, that it was more an example of propaganda than of health education in the sense described by Downie (1990), and that it reached a very good coverage. The assessment of objectives shows that the value underpinning the campaign is one that defines the worth of human life in terms of its economic productivity, which is expressed more specifically in DALYs, a construct for working out cost-effectiveness analysis. In the next chapter I discuss how these results support the main argument of this thesis.

Chapter 8

8. BEYOND IMPACT AND PROCESS: VALUES MATTER

8.1 INTRODUCTION

The main argument I am presenting in this thesis is that within a liberal democracy, like Colombia, where new spaces for more direct participation in policy-making are being opened up, evaluation research in health education and health promotion must embrace models that examine not only the impact and process of intervention, but also the criteria chosen for judging the merit of the programme, in order to unveil its underpinning values. The results of the evaluation of this mass media health education campaign support this argument. In fact, while the worth of the positive effects of this campaign in reducing prejudice against PWT and increasing demand for smear tests are indisputable, the values supporting these campaign objectives are questionable.

In this chapter I aim to discuss, firstly, the impact and process of the campaign; secondly, the values supporting the campaign, unveiled by the assessment of its objectives; thirdly, how these evaluation results answer the research questions and support the main argument of this thesis. Finally, I shall discuss the implication of this thesis for the evaluation of health education and health promotion initiatives, and the likelihood of evaluation models integrating an assessment of objectives for operating in the 'real' world.

8.2 THE IMPACT OF THE CAMPAIGN.

8.2.1 THE IMPACT ON THE PREJUDICE AGAINST PEOPLE WITH TB

The campaign delivered two different treatments. One aimed at reducing prejudice against PWT and the other aimed at increasing demand for direct smear tests. Indeed, there is in Cali a moderately high prevalence of people wanting to avoid physical and intimate contact with PWT (see table 7.2, p. 193). This is not a surprise, once the findings of previous qualitative research carried out in Cali are taken into account (Jaramillo 1995b; Jaramillo 1998). The significantly rising age-related pattern in the level of this prejudice, found in the pre-test survey, can be explained by the greater likelihood of older people having had direct contact with PWT, and their longer exposure to scientifically unfounded beliefs about TB transmission. Differences in the distribution of beliefs about TB transmission could also explain the occurrence of the same rising pattern in the levels of prejudice by socio-economic status. Both findings provide support to the way in which managers of the campaign segmented the target audience. Indeed, the fact that for young people elders are quite often the source of authoritative information and patterns of conduct for dealing with PWT, and that people of higher socio-economic status are quite often direct employers of PWT (who are usually fired after being diagnosed), provides support to the decision of targeting the campaign at all age groups, and all socio-economic groups.

Campaigns with smaller and more precise segments are often to be the most successful (Slater 1996), but the sponsors of this campaign could not afford the costs this would entail. In spite of the fact that a poor segmenting is an important weakness in its design the campaign reduced by 5.3% ($p < 0.015$) the population mean of the prejudice against PWT scale, which is a very successful result for a health education intervention targeted at the entire population. However, the significant rising age-related pattern of the prejudice mean persisted after the campaign, which was not the case for the socio-economic groups. Indeed, the mean change in the levels of prejudice amongst the older people was insufficient to bridge the gap between elders and younger (see table 7.6, p. 196). This is quite understandable given that attitudes maintained for a long time are less susceptible to change (Zimbardo and Leippe 1991).

The big difference in the mean change between the high and the low socio-economic groups (see table 7.7, p. 197) strongly suggests that the campaign worked better at reducing prejudice amongst people of higher socio-economic status. The same applies for the effects of the campaign on beliefs about TB transmission, which produced a reduction of 4.9% ($p < .07$) in the cognitive scale mean at population level. In this case, differences in the mean change between the high and the low and low-middle socio-economic groups (see table 7.8, p. 199) also suggest that the campaign was more efficient in improving the knowledge of those in higher socio-economic status, who thus reduced the knowledge gap between themselves and those of lower status.

This phenomenon was already noticed by researchers in the late 1960s (Tichenor et al, 1970), and is part of the so-called 'health gap paradox' (Guttman et al, 1996): those who are in better socio-economic conditions tend to gain more benefit from health education and health promotion initiatives, which contribute eventually to increasing inequalities between social groups. However, for the aims of this campaign, focusing only on low socio-economic groups would have been inadequate because the discrimination suffered by PWT comes from all the social groups, and the lower groups would certainly benefit from the effects of the 'health gap paradox'. Results of both the pre-test and post-test surveys support the programme theory of the campaign, which postulated that prejudice against PWT is determined to an important extent by its instrumental function (see table 5.3, p. 152), and that it can be reduced by providing information inconsistent with the beliefs nurturing this prejudice.

The importance of the instrumental function explains why the information given by the campaign was so efficient in reducing this prejudice (Crandall and Moriarty 1995). In spite of the fact that the campaign was less efficient for reducing, at a significant level, the scientifically unfounded beliefs about TB tranmission as measured by the cognitive scale, significant positive changes were achieved on some items of this scale and on the belief that TB is transmitted by coughing. The changes in this belief probably influenced the effects of the campaign on the demand for smear tests, by sensitising people to the relevance of coughing not only as a mechanism of TB transmission but also as an early symptom of the disease.

The campaign was a typical top-down 'treatment' given without consulting the 'patient', and the managers took for granted the merits of its purpose and did not consider the possibility that the campaign could produce any harm (the political context within which these assumptions were made, and their implications are discussed further in this chapter). It was not difficult, however, to predict that raising awareness about coughing as an early TB symptom might produce unnecessary anxiety in thousands of people—a common finding in disease prevention activities based on mass screening (Skrabanek 1990). Anxiety arising from diagnostic tests can be even more severe for a disease with social stigma, though it might be argued that because the campaign tried to reduce prejudice one could expect a reduction in the anxiety too.

However, the affective component of the prejudice against PWT, as in the case of most of physical illnesses, is a very complex one (Crandall and Moriarty 1995). Indeed, the campaign did significantly raise the levels of fear and loathing towards PWT (see table 7.4, p. 195). Yet one of the ethical principles of medical and social sciences, 'do not harm', was not explicitly explored in the process evaluation, nor did the participants in the group interviews assessing the acceptability of the campaign draw attention to it. Three factors, at least, may help to explain this. First, the way in which group interviews were conducted and the nature itself of qualitative research techniques. Second, the presence of participants who are used to the top-down approaches widely practised by government and NGOs in Cali. Finally, the presence of other more serious worries for the participants, such as their perceived risk of being burgled, murdered, etc.—certainly, the chances of being murdered in Cali, at the time of the campaign, were almost four times higher than the chances of catching TB!.

All the above findings highlight the complexities surrounding health education and health promotion programmes, and the challenges they face for making effective contributions to health without contradicting basic ethical principles. If we are to accept that reducing prejudice against PWT through mass media health education is an effective and worthwhile endeavour, the stakeholders in such an intervention must be ready to trade-off a certain amount of harm in some people for the benefit to be received by the majority. If not, it would be very difficult for health education to find a place in health promotion. However, this trade-off must be made by the stakeholders and not by those experts who see themselves as representing the stakeholder's interests (Witte 1994).

8.2.2 THE IMPACT ON THE DEMAND FOR DIRECT SMEARS

The second treatment delivered by the campaign were those messages aimed at increasing demand for smear tests. A very noticeable and sudden increase in the number of smear tests examined by the lab network, in the number of people being tested with smears, and in the notification of positive pulmonary TB cases, coincided with the campaign and occurred only in Cali, not in the control group (see Graphs 7.2a, 7.2b, 7.3a and 7.3b, chapter 7, p. 203-207). Having ruled out all the threats to internal validity for this component of the evaluation and relying on the good quality assurance of the lab network, it is possible to state that these changes are causally related to the campaign. In terms of case finding, these results show that for every two patients found with smear tests using a passive strategy there is, at least, one left undiagnosed within the community. This increase of 58% in the number of positive cases notified during the quarter of the campaign compared with the previous quarter emphasises the insufficient diagnostic coverage achieved by a passive case finding strategy, an issue pointed out recently (Raviglione et al, 1997).

If we are to generalise this finding to other settings, and I can find no reasons why we should not, we might question seriously the capacity of TB control programmes, even those doing well like Cali's, for early diagnosis of new cases, and for reducing the infection risk amongst the early close contacts of infectious cases. Although, from the viewpoint of the programme theory of the campaign, we could blame people's ignorance of early TB symptoms for the low diagnostic coverage, we should also note the operation of other factors. In fact, previous research findings show that private clinics instead of the health centres of the Secretariat of Public Health were by far the most common choice among those seeking help (Wolski et al, 1995), and that these centres did not always meet the needs of PWT (Jaramillo 1998). Those attending private clinics were not necessarily better served than those attending public health centres (Wolski et al, 1995), and certainly the quality of TB control services at the latter was corrected to a great extent well before the campaign. However, the fact that people tend to prefer health care providers other than public health centres suggests that the way in which the Secretariat works makes it the less attractive option amongst those seeking help.

In spite of the strong immediate effects of the health promotion programme they were very short-lived, except for the notification of positive cases which decreased at a much slower pace than the two other indicators. Indeed, the demand for smear tests returned to the baseline level after six months (two quarters), while it took one year (four quarters) for the number of cases found to get back to its baseline level. The campaign's short-lasting effects of the campaign on demand for smears is predictable once Roger's (1983) model for adoption of innovations is taken into account. According to this theory a 'maintenance failure' occurs when efficacious programmes are successful in terms of delivery and adoption but then loses momentum and dissipates over time (Orlandi et al, 1990). In the case of this campaign the momentum of the innovation was lost once the delivery of television and radio public services announcements were stopped. This finding reinforces the idea that media campaigns like this have to be delivered for an unknown longer period of time if real lasting effects are to be produced.

The validity of the evaluation of the campaign's impact on prejudice and on demand for smear tests is hampered by the lack of a randomised controlled trial in the research design, though this was not an option feasible in this case, as in most media-based programmes. Having ruled out the threats to internal and external validity that Cook and Campbell (1979) ask researchers to consider, we can be highly confident of the causal relationship, in the positivistic terms of traditional evaluation research, between the campaign and the results achieved. However, the two treatments delivered, messages aimed at increasing demand for smears and messages aimed at reducing prejudice, had very probably interacted in an unknown way. The information given for persuading people to demand direct smears may have increased the levels of prejudice in the community. By the same token the information given with the aim of decreasing prejudice may have contributed to increasing the demands for direct smears. Unfortunately the extent and direction of this interaction is not possible to ascertain within this evaluation design. Therefore, the changes in the demand for diagnostic tests and in the levels of prejudice can not be attributed independently to the messages of each treatment. However, it can be argued that, according to previous research findings (Jaramillo 1998), the effects of this interaction might not be fundamental for explaining the effects of the campaign on demand for direct smears, since stigma and prejudice seem not to be the main factors determining the interpretation of early TB symptoms.

8.3 THE PROCESS OF THE CAMPAIGN

Assessment of the process of this campaign deals with many different issues regarding format, content and delivery of the intervention. This assessment shows at least four outstanding aspects of this campaign. Firstly, it shows how, even with a very small budget, it is possible both to set up and deliver a relatively complex health education and promotion programme, and to collect data to produce a reasonable assessment of impact and process. It is important to bear in mind how the technical constraints on the design and evaluation of this campaign show the gap between the gold standards of social science research methods and techniques and the reality of what could be actually accomplished in the real world of LDCs. In fact, the campaign would never have developed if its sponsors were to follow all the technical guidelines suggested by social marketing techniques. Nor could I as evaluator follow all the guidelines regarding the research design for assessing impact and process. This is not to deny that more reliable and valid assessments of impact and process might have been achieved by using more sophisticated probes, but rather is to highlight the gap between the ideal standards of research of social sciences research and the reality of what can actually accomplished.

Secondly, the assessment of process shows the capacity of Cali's private sector and NGOs for alliances with the local government. This capacity is very important for developing health promotion programmes, and was clearly reinforced in the case of this campaign by the type of relationship between the mayor of the city and the LAC-Valle. The nature of the relationships operating between the private sector, NGOs and local government was decisive at the moment of the production and delivery of the education materials, which profited from the modern infrastructure of mass media in Colombia, and the existence of norms regulating public service announcements.

Thirdly, the assessment of process also shows the clear manipulative nature of this health education intervention. The campaign had clear aims and objectives, all of them dealing with behavioural change. For achieving these aims the amount, format and content of information within the educational materials was carefully regulated. Indeed, the information given by the campaign was specifically designed to obtain the behavioural changes expected by the sponsors of the intervention, rather to enable citizen's autonomy by providing a clear understanding of the causal forces shaping the TB epidemic. That explains why any direct or indirect reference to 'poverty' was systematically avoided in all the educational materials, though poverty is at the root of the TB epidemic. Indeed, the structure of the campaign fulfil most of the characteristics of what Pratkanis and Turner (1996) call propaganda (see chapter two, p. 40). The solution to the problems tackling the campaign was pre-determined by a ruling elite embodied in the LAC-Valle and the Secretariat for Public Health. This ruling elite includes the medical Establishment (represented in my work as medical expert in TB control) and the WHO/World Bank, responsible for designing the current policy for TB control (the policy which the Secretariat is responsible for implementing). This elite sets the agenda, tasks and objectives of the campaign and uses its authority to induce acceptance of the solution proposed by the intervention by relying both on the power of persuasive communication, which plays with emotive images, and on the scientific medical discourse.

Fourthly, assessment of process shows that the format and content of this campaign embodied the distinctive features of the medical model of health promotion. All the educational material used in the campaign targeted the individual by, for example, persuading people to make the behaviour changes necessary for reducing prejudice against PWT and increasing the TB detection rate. The messages focused exclusively on the biological and behavioural aspects of the disease, and none of them mentioned, or even hinted at its socio-economic determinants. Other relevants aspects of this campaign clarified by this assessment of the process deal with programme exposure and social acceptability. In spite of the fact that they were not designed by people well experienced in social marketing, and that several features could have been improved, findings from group interviews suggest that the format of the campaign was well accepted by the community. Although the research strategy for assessing acceptability was not the most appropriate, the group interviews carried out give a general idea about the reaction produced by the messages. Around half of the population (49.8%) were allegedly exposed to the campaign. Overall, the programme exposure to and the impact achieved by the campaign is relatively rewarding considering the very low audience rating of the television programmes diffusing the messages. This points out the important contribution made by the other media sources, including the television and radio public service announcements.

Unfortunately, audience ratings for the other media sources (radio and newspapers) were not available for this evaluation, making it difficult to assess more clearly the effectiveness of each source. Young people were significantly less exposed, which helps to explain the campaign's positive impact on prejudice, since this was much higher amongst older people. In this sense, the campaign managed unintentionally to reach the segment which should have received priority attention in order to reduce prejudice. This differential exposure by age is easily explained by the type of programmes diffusing the messages. Indeed, it is well known that in Cali, as in most places in the world, family television and radio chat shows, television news, and newspapers are not the best channels for communicating with young people.

8.4 THE OBJECTIVES OF THE CAMPAIGN

The human capacity for economic productivity is at the core of the set of values supporting this campaign. They are the values underpinning the use of DALYs as a tool for setting priorities in health care, which identify the biomedical model of TB control as the most cost-effective health care activity. Although DALYs are fundamental in the framework for health policy presented by the World Bank in its 1993 annual report (World Bank 1993), they remained unchallenged in the medical and social science literature until very recently—when serious critiques of its technical and ethical basis were presented (Barker and Green 1996; Anand and Hanson 1997; Sayers and Fliedner 1997).

The values and the agents whose values were embodied in the DALYs are the main concerns of the critiques of the ethical basis of DALYs. This sort of values belong to a school of thought called Utilitarianism, where inequalities are not a matter of concern unless they reduce the total good for the majority of the people (Olsen 1997). These values are clearly at odds with the equity pursued by health promotion as endorsed by WHO in the Ottawa Charter (WHO 1986). The key issue is that the instrumental value applied to human life in DALYs results in unequal and discriminatory treatment of those in a disadvantaged position, namely, the disabled, children, and the elderly, not to mention to those disadvantaged with respect to other important determinants of health. These determinants, which are not considered in the construction of DALYs, are income, knowledge and social connections (Link and Phelan 1995).

The implications of underpinning a health care intervention with these values move this discussion to the realm of health and human rights (Mann et al 1995). It is not easy for public health policy to keep a balance between what is convenient for individuals and what is convenient for society. However, in the name of the health of the society public health action can embrace policies which systematically violate basic human rights. This campaign, for example, as an instrument of a policy for TB control underpinned by an Utilitarian notion of human life, becomes part of a political and economic structure that violates the human right for individuals to avoid discrimination for any reason. The dignity of human beings can not be determined by their capacity to be economically productive. Yet, the current policy for TB control is clearly focused on the biological level of causality because, it is based on a set of values that discriminates between human beings on the basis of their suitability for economic growth. The strong influence that these values have on current public health policies has moved some authors to argue that,

> "For the present, it may be useful to adopt the maxim that health policies and programs should be considered discriminatory and burdensome on human rights until proven otherwise" (Mann et al, 1995) (p. 16).

Another critique of the ethical basis of DALYs deals with the process of selecting the values which were incorporated in this construct. While the eliciting of values for setting priorities via community participation is encouraged by social health promotion and WHO (WHO 1978; WHO 1986), only experts were consulted for selecting the values constructing DALYs (Jamison et al, 1993). Eliciting community values for setting priorities is certainly a very complex and contested issue (Shiell et al, 1997), but in the case of health care priorities set by the use of DALYs, it is clear that its values were defined by experts working for the World Bank, the institution representing the interests of those holding world-wide political and economic power. In Cali, the values of the community are not explored at all by the public health practitioners, and certainly were not sought in defining the objectives of the campaign. Meanwhile the priority of the biomedical model of TB control over other health care activities, as recommended by WHO and the World Bank, was accepted without question, as were the values underpinning this policy which were not even discussed internally by the managers of the campaign.

In fact, these values fit perfectly into the agenda for the city's socio-economic development that the local private sector and the mayor of the city at the time of the campaign strongly promoted—which is based on the principles of human capital and on social capital theories. Small wonder that the *Fundacion Carvajal* (symbol of the local philanthropy, and supported by 'Carvajal Inc.', the flagship of the local private entrepreneurship), allegedly does not help the very poorest people who cannot even pay the small fees they charge for their services (Cruz 1994). The principle of the foundation is to help those that are already helping themselves to participate in the market, not to help those who are hopelessly lacking of any potential for being economically productive—who are left, unintentionally, in the hands of the 'cleansing death squads'. The instrumental value applied in this case to human life is basically the same as that incorporated into DALYs, and is clearly deployed in the programmes prioritised in both these and other local philanthropic endeavours (Cruz 1994).

Thus, the values underpinning the agenda of all the political actors of the campaign (WHO, the World Bank, the Mayor of the city, and the Secretariat of Public Health) were basically the same. In fact, the Secretariat of Public Health is just an instrument to implement policies decided somewhere else. An interesting exception occurs in the case of the LAC-Valle, which not only established a network of social support for PWT, well before the campaign, but also gave this support to everybody who needed it, regardless of his or her potential for economic production. In this case, LAC-Valle's valuing of human life due to its intrinsic worth made readily understandable by considering the influence of the Christian ethics held by the members of the charity. The political *naiveté* of their members and the powerfully persuasive discourse of the medical sciences, which assumes that science is value-free, allowed them to endorse without question the objectives of the campaign, whose values were nonetheless at odds with theirs.

These values underpinning both DALYs and the campaign reflect a specific idea of human nature, with which not everybody agrees; an instrumental notion of health; and a one-sided epistemological notion of the determinants of disease, which are typical of the medical model of health promotion. From these values, health is seen more as an absence of disease, a resource valuable to the extent that it contributes to developing a specific economic agenda (economic growth), and less as a condition with an intrinsic value. On the other hand, the way in which these values construct DALYs ignores the causal forces behind health and disease, other than the strictly biological ones. This epistemological bias transforms health education and health promotion into instruments for the maintenance of the status quo by 'empowering' the community to learn how to adapt to the environment, rather than to promote social change.

Accordingly, it is a waste of resources to 'create an educated public', for example, when what is needed is to teach people how to make the best possible use of the medical resources available for controlling biological determinants, and how to behave to avoid the risks posed by these determinants. In other words, within this epistemological notion of health and disease, the function of a mass media health education campaign in TB is to teach the public both how to use the bio-medical treatment, which is the most cost-effective way for 'reducing the annual risk of TB infection', and to be kind to those suffering from the disease. The creation of a public educated about the determinants of TB would place communities in a better position to elicite the values underpinning their priorities for health care.

However, the values democratically elicited by an educated public would not necessarily be the same values as those of the World Bank, let alone of those holding political and economic power in Cali. Certainly, increasing public knowledge could be too risky for their economic and political interests given that a substantial proportion of people have their basic needs unmet, as is the case in Cali and Colombia. On the other hand, the creation of an educated public may not necessarily be inefficient. This educated public would be in a better position not only to actively participate in decisions affecting the collective well-being through democratic structures, but also to create social trust, and to engage in social networks based on solidarity and respect for the common interest. All these elements are at the root of social development processes where economic growth is an important result, according to the Social Capital Theory (Putnam 1993, Leonardi 1995).

8.5 WHICH IS THE MERIT OF THIS CAMPAIGN?

The results of the impact and process evaluation of this campaign demonstrate that media-based health education and health promotion initiatives, theory driven by social psychological theories of behaviour change such as the Health Belief Model and the Social Learning Theory, using social marketing techniques, are quite effective in three ways. Firstly, to reduce prejudice against PWT and, secondly, to increase knowledge about mechanisms of TB transmission and, thirdly, to increase demand for smears (which entails a significant increase in case detection, at least in those places with high annual TB infection risk).

An assessment of the objectives of the campaign show that they are underpinned by a set of values placing an instrumental value on human life, which is determined by its potential for economic productivity. The implications derived from these values clearly place the campaign in the medical model of health promotion, where the type of information given is exclusively focused on biological facts and the ability to deal with them, and ignores information about other socio-economic determinants of health. As Guba and Lincoln (1989) argue, "if information is power, then information withheld is power reduced" (p. 9). Thus, the medical model of health promotion enables or 'empowers' individuals only to comply with the advice of medical experts.

It is very difficult to question the merit of reducing the levels of prejudice against PWT, given the stigma attached to TB and the discrimination suffered by PWT. This merit is, arguably, not fundamentally altered if this reduction occurs at the expense of a significant increase in the proportion of people fearing or loathing PWT, as occurred in this campaign—in fact, the proportion of people with this feeling after the campaign was still low. In the same vein, it is very difficult to question the merit of increasing the detection rate of PWT wherever a TB programme is already providing high cure rates, given the physical suffering and the high mortality among those remaining untreated. The supposed merit of both achievements is highlighted by the effort taken by the institutions sponsoring the campaign and by the reasonably sound use of theories of change behaviour. So far, what the typical evaluation model of health education and health promotion (which only assesses impact and process) says is that this campaign was undoubtedly *a good thing.*.

However, once the values underpinning the campaign are identified its merit becomes controversial. The idea that the value of human life is determined by its potential for economic production does not appeal to everybody, and for many it could actually be dangerous. Indeed, this idea is a fundamental rejection of the health promotion discourse presented in the Ottawa Charter (WHO 1986). Those rejecting this value would consider that the *goodness* of the campaign is just a by-product of a programme whose ultimate purpose lay elsewhere.

The implications of the values incorporated into the campaign raise questions that engender doubts about its merit. Why could the two other objectives of the campaign not be combined with the creation of an educated public on TB? Is it good to sacrifice the creation of such a public for the sake of economic growth? Is it good to place the responsibility for prejudice on individuals? Who is benefiting from hiding the fact that the roots of TB lie in poverty? Is it justifiable to use the mass media to convey messages telling a biased story convenient for the political agenda of those holding economic and political power? The answers to these questions are of a clear ideological nature, and clarify the manipulative nature of this campaign. This manipulative nature was disguised in the persuasive discourse of science—indeed, the campaign based its persuasive messages on non-controversial scientific facts.

Summarising, a typical evaluator, who does not include an assessment of the objectives, would present to the stakeholder of the programme the evidence for judging the merit of

'a campaign that reduced prejudice against PWT and, arguably, the discrimination suffered by PWT due to the stigma attached to the disease; and that also increased the detection rate of TB by empowering people to benefit from the medical treatment of TB'.

Whatever the political stance of the stakeholders, their judgement will be favourable towards the campaign. When the values supporting the campaign are included, the evaluator will present evidence for the stakeholders to judge the merit of

'a campaign that manipulated scientific facts about TB to successfully reduce prejudice against PWT and to increase the detection rate (trading off social advocacy for personal education) and which was motivated by the need to keep control of the disease in order to maintain a workforce suitable for economic growth, but which left people with a distorted notion of the determinants of the disease'.

In this case, the judgement about the merit of the campaign will reflect the ideological position of the stakeholders, and not the scientific criteria established by its managers. Thus, assessing the values underpinning the objectives makes a big difference when judging the merit of health education and health promotion programmes.

Post-modernism or late modernity, and the forces working behind the increasingly globalised world we are living in provide a context for evaluation different from that of the 1960s. The increase of liberal democratic governments, the increasingly reflexive mode of behaving, the construction of new self-identities, amongst other factors, change the scope of evaluation and the role of the research evaluator. Indeed, in this new context the traditional scope of evaluation 'impact and process', and the role of the evaluator as judge are totally inadequate approaches for informing those participating in decision-making, and for determining the worth of health education and health promotion programmes.

Health promotion, as presented in the Ottawa Charter, is clearly a post-modern project (Kelly and Charlton 1995) embedded in an increasingly globalised world where, for example, pursuing efficiency and developing more democratic decision-making processes, are highly valued. Health promotion, by trying to justify its place within these new spaces for public health action, has fallen in the trap of using evaluation models that reinforce the traditional medical model of health by leaving unquestioned the same ideas and practices which, allegedly, it aims to replace—namely, health as the absence of disease, the top-down and 'victim blaming' approaches, the dominance of medical expertise, the reductionist epistemological models, and the manipulative use of health education. Indeed, the pressure on health promotion to show results, particularly in economic terms, has contributed to compromising its fundamental goals and strengths (Burrows et al, 1995).

The more direct forms of democratic participation developing in LDCs create the opportunity for developing fundamental principles of health promotion, such as autonomy and community action. In Colombia, for example, decentralisation, though part of an specific agenda promoted both by the World Bank (Rondinelli et al, 1984) and the political Constitution of 1991 create new political spaces for developing more direct forms of democracy (Fiszbein 1997). In this country, indeed, grassroots movements could take advantage of these arenas and of the crisis of legitimacy of the actors of the social conflict happening there for getting people nearer to the decision-making—if not nationally at the 'low politics' level. This is a process where small but extremely significant victories have been achieved by those Colombians who are most powerless (Sanz de Santamaria 1995), but it is also a process where those currently in power will not easily give up their privileges. The evaluation of health education and health promotion must, within this context, be a beacon that illuminates the path that people want to follow, rather than legitimising the path chosen by, and most convenient to the interests of few. This requires the evaluator of health promotion to develop skills not only in social science research techniques but also in political analysis.

8.6 CONCLUSION

In this chapter I discuss the main findings of this evaluation research. These findings support the argument that evaluation of objectives of health education intervention is fundamental for judging its merit. The feasibility in the real world of the type of evaluation proposed in this thesis is problematic. The type of economic relationships within which health education and health promotion currently develop means that bureaucratic evaluation, in the sense given by MacDonald (1976), tends to be the rule rather than the exception. This thesis illustrates something that is not new: that those with political and economic power are the main determinants of policy and, of course, of the criterion of merit for judging the worth of public health initiatives. Health care has been the target of marketisation processes, which have turned health into a commodity. This leaves little space for using criteria of merit which differ from that of economic efficiency. However, this marketisation of health care is a large-scale experiment which seems to have few chances to succeed (Hsiao 1994; Hsiao 1996), at least in the way it has been promoted so far, which still leaves the state as the main body responsible for maintaining the health of the population. Even if this marketisation succeeds there are still some arenas for people to demand accountability from the bodies developing and implementing health policies at local level. If the creation of an educated public is essential for that aim, the creation of educated evaluators is no less important.

Chapter 9

9. CONCLUSIONS

Evaluation research applies the methods of social science research to judge the merit or worth of a social programme. Amongst the many reasons for evaluating a social programme, the assessment of 'impact and process' which informs the policy making process has been, perhaps, the most common. In this thesis I demonstrated that an evaluation model of health education and health promotion which includes an examination of the programme objectives places stakeholders in a better position for judging the worth of the programmes, in those settings and situations where all stakeholders steer the policy-making.

Indeed, the evaluation of the impact and process of this campaign shows that it did significantly reduce the prejudice against PWT and increase the demand for diagnostic smear tests of TB by successfully developing the programme theory of the intervention. By including the normative assessment of objectives of the campaign, the stakeholders can now judge not only the effects but also the values underpinning the intervention. I argued that the innovation I implemented in this evaluation, the assessment of objectives, is fundamental in the context of societies where respect for autonomy and independent thought are valued.

To my knowledge this thesis is the first report of a theory-based evaluation of a mass media health education campaign for TB control, and the first that includes an assessment of its objectives as part of the elements that the evaluator should present to the stakeholders to enable them to judge the merit of the programme. Results of the evaluation looking at the impact, process and objectives of the campaign provide important conclusions relevant for TB control and for the construction of evaluation research models contributing to the advance of health education and health promotion practice.

The campaign was a non-standardised intervention. Indeed, it was an intervention whose efficacy was not previously tested on a smaller scale. However, due care was taken by its managers in the application of those theoretical concepts that predict the effects expected from the campaign by its sponsors. Indeed, the assessment of impact proved that what was predicted by the programme theory of the campaign was in fact the case:

Firstly, that the instrumental function is a very, if not the most, important component of the prejudice against PWT in Cali. It also proved that the weight of this function is highly susceptible to reduction by the provision of information contradicting the beliefs underpinning this attitude, as dissonance theory predicts (Aronson 1969). In fact, the evaluation demonstrated that scientifically unfounded beliefs about the mechanisms of TB transmission are the main contributor to the instrumental function of prejudice against PWT. Yet, when these beliefs are replaced with scientifically valid ideas about TB transmission, the level of prejudice reduces significantly.

Secondly, that the provision of information about early symptoms of TB, and about costs and facilities available for diagnosis and treatment results in an increase in demand for smear tests and that, in the context of a bio-medical TB control programme relying exclusively on passive case-finding by public health institutions, this increase is mirrored by an increase in notification of positive pulmonary TB cases. Indeed, the evaluation of impact demonstrates that the provision of this information by the campaign (in the context of a TB control programme running smoothly and with sufficient resources) was by far the most important factor in explaining the huge increase in both the number of people with chronic respiratory symptoms tested for TB, and in the number of new notified cases of positive pulmonary TB that occurred in Cali during the campaign.

The effects of this campaign also reveal the huge amount of infectious cases of TB which are left undiagnosed (probably for long periods of time) even by efficient TB control programmes that rely exclusively on public health care institutions. Indeed, in Cali, most of those with chronic respiratory symptoms seek help at private clinics which tend to miss the diagnosis unless the symptoms are highly suggestive of TB (Wolski 1995, Jaramillo 1998). This finding, which has been reported before (Uplekar 1993), highlights the convenience of integrating private clinics into the publicly funded TB control programmes.

Finally, assessment of the impact also shows that the mass media are, contrary to what some authors still argue, a very powerful and effective tool for conveying messages promoting changes in health behaviour when they are based on the appropriate social psychology theories of health behaviour, and are informed by principles of social marketing. The power of the mass media is still more evident once we considered that the effects of this campaign were the results of a short-lived and not very intensive programme, differing from the the standards of commercial campaigns.

Unfortunately, the campaign also had unintended negative effects. Indeed, the campaign produced a significant increase in the small proportion of people with fear or loathing of PWT. These are the sort of effects that might be expected from any campaign promoting a screening/diagnostic test or giving information about a public health problem (Skrabanek 1989) which, in this campaign, were not properly examined before its implementation. The effects of this campaign show, once more, that it is essential to include in the formative research of any health education and health promotion programme, an ethical analysis of the harm they could entail before these programmes are fully implemented on a large scale, instead of taking for granted its inherent goodness. This is particularly true in the case of non-standardised interventions like this campaign.

From the process evaluation findings, one can draw two important conclusions to explain why the campaign achieved the effects it did. First, the inter-institutional collaboration and the political will and support provided by the government for this campaign show how it is possible to counteract the scarcity of resources for developing health education and health promotion programmes in locations of LDCs like Cali. This is particularly true when there is a tradition of private support for public endeavours that have objectives akin to private interests. Second, in spite of the relatively low intensity of the campaign, it managed to achieve coverage for at least half of the population with socially acceptable educational materials that were properly informed by the appropriate theories of health behaviour change. In fact, the way in which the format and contents of the messages were designed and delivered to the audience made the campaign an example of the 'health education' strategy called 'propaganda', which is nothing less than 'social engineering' in public health. The effects of the campaign were not lasting.

Though the sustainability of effects was not one issue specifically explored in the evaluation process, one could argue, following Roger's (1983) diffusion of innovations theory, that the only way to guarantee longer-lasting effects was to keep airing the television and radio public service announcements by paying fees to the media sources diffusing the messages.

The assessment of the campaign objectives demonstrates that revealing the values underpinning health education and health promotion programmes can make a big difference when judging its merit or worth. Indeed, the evaluation of impact and process produce a positive judgement of the campaign. The reduction of levels of prejudice against PWT and the increase in the TB case finding are, beyond doubt, convenient for the interests of the population as a whole. Yet, when the evaluation includes an assessment of the objectives, in order to reveal the values behind the campaign, the judgement of the merit of the intervention becomes contestable. The values underpinning the objectives of the campaign are Utilitarian, and not every stakeholder would be happy to support these type of values and this ethical system.

Judging the merit of the evaluand is the *raison d'être* of evaluation. Evaluations based on the supposedly value-free character of science are ideologically charged, and do not enable stakeholders to reach a fairer judgement of merit, and for this judgement be reflected in improvements upon policies. The consensus about the worth of a programme achieved by stakeholders who judge merit exclusively on the basis of impact and process, collapses when the notion of 'what is the good to be pursued' incorporated into the programme is included in the evaluation. In this evaluation, for example, to leave unquestioned the objectives of the campaign would not only reinforce the medical model of health promotion but also legitimise the use of social marketing as a powerful 'social engineering' tool for regulating individual behaviour and for strengthening a specific theory of TB control.

Indeed, the creation of an educated public, able to understand how TB is shaped by biological, behavioural and socio-economic forces, is equally important for providing people with more knowledge that enables them to participate in decision-making processes affecting their lives. The managers and sponsors of this campaign did not include the creation of an educated public in TB as a third aim or objective of the campaign. In this way the campaign provided a poor service in enabling people to take control of the determinants of health, the aim of health promotion according the Ottawa Charter (WHO 1986).

How human beings ought to live, and how society ought to work are highly contentious issues. Any health education and health promotion programme is based on a specific idea regarding these issues. If policy-makers and health education and health promotion practitioners are to respect the dignity and self-determination of individuals and communities, they must incorporate, on a democratic basis, the idea prevalent amongst the stakeholders about what kind of life they want to live. Thus, it is for the evaluator to present elements which the stakeholders can assess in the debate about how to tackle social problems. In this debate the availability of an educated public is essential if public interests are not to be co-opted by the most powerful groups of society.

This evaluation research opens up several different avenues for further research in the control of TB and in the evaluation of health education programmes. Firstly, the discrimination suffered by PWT is as disturbing as the physical ailments they suffer. Those making policy for the control of TB have concentrated their efforts in the biological level of causality, forgetting that the well-being of human beings goes beyond mere physical fitness. The result of this evaluation research highlights how prejudice, a very important contributor to discrimination against PWT, can be tackled through information programmes that enable people to understand the mechanisms of TB transmission. Thus, some of the aspects requiring further research are: validating this campaign in other settings, assessing the weight of the symbolic function of prejudice, exploring how to reduce prejudice against PWT without producing further anxiety, and exploring what efforts are required for intervention like this to produce long-lasting effects.

Secondly, the bio-medical strategy for TB control has, quite reasonably, prioritised efforts in the cure of PWT rather than in the case finding. However, there is a dearth of research about how to increase notification rates in those areas where high cure rates have been already achieved. This evaluation research begins to fill this gap by demonstrating, first, that the provision of certain information can enable people to demand direct smear tests and, secondly, that passive case finding relying on public health care institutions is insufficient for reaching the operational targets for notification rates. Further research is needed for clarifying to what extent this substantial proportion of people remaining undiagnosed have already sought help in the health care system, and how this diagnosis delay may be reduced. Another important avenue for further research is how to promote a sustainable behavioural change in the way in which people deal with chronic coughing—as part of a TB control programme encompassing the three levels of causality I presented in chapter three.

Thirdly, this evaluation research has demonstrated how the effects of this campaign were mainly the results of the manipulation of information. Would the campaign have achieved the same results if some other information been added to the main contents of the intervention? Which information? The ethics of health information and health education is a poorly developed area of health promotion. This evaluation demonstrates that research aimed at developing frames for working out ethical *and* effective health education programmes are badly needed. Advances in social marketing techniques and social psychological theories of behaviour change are not by themselves able to develop health education intervention that is respectful of human rights.

Finally, if evaluation research is to present elements for the stakeholders to judge the worth of a programme and to take decisions, an evaluation that addresses only impact and process is a misleading exercise. Evaluation in health education and health promotion is a developing field which still lacks of comprehensive models that take account of the broader framework defined by those forces which constrain and facilitate programme's operation. Indeed, the assessment of a programme's objectives is one element systematically neglected by evaluators in the models currently in use. The main question for further research regarding this issue is how to incorporate evaluation models, like the one developed in this thesis, into the typical bureaucratic environment where most evaluation research is performed.

Evaluation in health education is essential for building up a body of knowledge appropriate to the needs of those holding responsibilities in health. It was already mentioned that the lack of evaluation is one of the principal reasons for the failure of different health education approaches in LDCs. I hope that the evaluation exercise I am presenting in this thesis is going be a positive contribution to the process of developing evaluation models that can enrich the health policy debate.

APPENDIX 1.

GENERAL INFORMATION ON COLOMBIA

Geography.

Colombia, in the Northwest of South America, is a country with an area of 1,138,910 sq. Km. It is located in the equatorial zone, and bordered by the Atlantic Ocean in the north, Venezuela and Brazil in the east, Peru and Ecuador in the south, and Panama and the Pacific Ocean in the west.

The country has three geographical regions: the south-eastern region is jungle, with very low population density. The central region is mountainous, and belongs to the Andean belt. The majority of the population live in this region, which is where the largest urban and economic centres are located. The north-western region is a plain, and is less developed in socio-economic terms than the central.

Spanish is the official language, and is spoken by more than 99% of the population, Amerindian languages are spoken by less than 3%. The principal ethnic groups are the mestizos (58%), white (20%), black (18%) and native indians (4%). In spite of the fact that there is no official discrimination policy towards native indians and black people, these minorities are among the poorest people of the country and their interests have long been ignored by both the government and most of the population. The 1991 Constitution authorised religious freedom, but the majority of people (95%) claim to be Roman Catholic.

Political history.

In the early 16th century the Spaniards began the conquest of the native Indians inhabiting the currently Colombian territories. For nearly 300 years they ruled over the native population that survived the violent conquest process, as well as the natives born of the mixture of white Spaniards and native indians (called *criollos*). In 1819, a violent revolution lead by the criollos achieved independence from Spain. Over the course of the century, several civil wars occurred between the two different political parties (liberals and conservatives). Administrative, economic and religious motives were the main reasons for these wars. These conflicts cooled down during the first two decades of this century, and facilitated the modernisation of the country started during the mid-1930s.

In 1948, the assassination of Jorge Eliecer Gaitan, a prominent left-wing liberal politician with socialist ideas, started *'La Violencia'* (the violence), a period lasting until the mid-1960s. During this time political movements of peasants, mostly liberal followers of Gaitan, organised militia to defend themselves against conservative followers who were backed by the conservative government. This is the origin of the currently main left guerrilla movement. Although *la violencia* cooled thanks to peace agreements between these movements and the government, some movements did not participate in these deals and maintained, until the present, a low intensity war aimed at toppling the government. This social conflict worsened with the consolidation of Colombian drug-traffickers as the main suppliers of illegal drugs for the North American and European markets (marijuana in the 1970s, cocaine in the 1980s, and heroin in the 1990s). During this century the country developed as a liberal democracy, interrupted for less than four years during the 1950s, though the level of more direct forms of political participation only began to improve during the late 1980s.

Political Organisation

The president of the republic is appointed by democratic election for periods of four years. However, the abstention rate is traditionally very high—ranging from 55 to 65%. Two political parties, the Liberal and the Conservative, have been the main actors in the political scenery since the creation of the country in 1830. Indeed, there is no real opposition party since both of them participate in the central government. Their members usually belong to or represent the interests of the most powerful economic groups—whether legal or not. In fact, corruption at the level of government and parliament is nothing new, but it was only during 1995 that the extent to which the drug barons infiltrated Parliament and the Colombian Government became visible to the rest of the world. It was demonstrated that the drug barons had partly financed the political campaign of the current president Ernesto Samper, who nonetheless was acquitted by the Congress of any wrongdoing in this respect. By the end of 1997 twelve members of Parliament, the General Attorney, and the last three General Accountants of the nation had been jailed—some were in custody awaiting trial, some others were already convicted of receiving funds from the drug cartels.

Demography

Colombia is one of the countries with the most successful achievements in the LDC in terms of family planning over the last 30 years (see Table 1). However, the population of the country is still predominantly young. Achievements in life expectancy, in spite of the high homicide rate, and infant mortality are also impressive. The political violence that affected mainly rural areas during *'La Violencia'*, and continues to do so now, is the main factor explaining the concentration of the population in urban areas.

Table 1. Some demographic indicators of Colombia.

Indicator	Year	
		1995
Population		37,800,000
	1960	**1995**
Life expectancy at birth	56.5	70.1
	1980	**1995**
Aged 15-64 (%)	16	23
Total fertility rate	3.8	2.8
Urban population (as % of total population)	64	73
% of urban population in cities with + 1 million	22	28

Sources: (UNDP 1997; World Bank 1997)

Economy

The currency is the Colombian peso (March 1998: Col$2.250 = 1 Sterling pound; Col$1.330= US$1). The inflation rate during the last 25 years has ranged between 20 and 30%. The GNP per capita is US$1,713. The economy is based on oil and coffee, but an increasing proportion of exports are based on a diversity of goods (leather, banana, flowers, coal, sugar, books, fruits, iron & steel, clothing, coal, cotton, sugar, pharmaceuticals, nickel and emeralds). During the last 30 years the country has maintained a low and sustained economic growth.

Table 2. Some indicators of the Colombian economy.

Indicator	Year	
	1995	**Growth[1] (%) 1986-95**
GNP per capita	1,910	2.6
	1980-90	**1990-95**
Average annual growth rate (%)	1,9	1,8
	1995	
PPP[2] estimates of GNP per capita	6,130	
Distribution of GDP (%)	**1980**	**1995**
Agriculture	19	14
Industry	32	32
Manufacturing	23	18
Services	49	54
Central government deficit (% GDP)	1.5	2.8
Net present value of external debt (% GNP)	20.9	28.2

Sources: (UNDP 1997; World Bank 1997)

During the last 25 years the economy of Colombia has had a small but sustained average annual growth of the GNP (Mohan 1994; Psacharopoulus et al, 1995). This trend was more intense during the period 1966-1974, and was not affected by the debt crisis during the 1980s. In fact, Colombia did not need to reschedule its debt in that decade, and while the per capita GDP fell by 3-4% in Mexico and Brazil and by more than 17% in Bolivia, Venezuela, Uruguay and Argentina, in Colombia it fell by less than 1% (Branford and Kucinski 1988). This fact is explained by a prudent macroeconomics and loans policy. Indeed, the Colombian debt has been smaller than the size of its economy. The external debt of the country represented 40% of its GNP in 1970, and by 1995 it represented only 30.1% (Junguito 1995). It may be argued that this relative economic stability is a consequence more of the influx of drug-dollars than the country's own economic dynamics. However, such an argument is difficult to prove. The exact amount of money flowing into Colombia derived from the illicit drug trade is unknown. It is

---

[1] Average annual growth rate

[2] Purchasing power parity

assumed that, in the 1980s, it represented no more than 5% of GNP, and less than 2.5% in the 1990s (Gomez 1995). In addition, these funds have mainly been diverted, accordingly to Gomez (1995), into speculative activities in land ownership in both urban and rural areas. This hypothesis is well supported, for example, by figures concerning land use in Colombia during the last years. The proportion of the total land area used for crops and pasture decreased from 10% and 75% respectively in 1980, to 5% and 39% in 1993 (World Bank 1996).

Other negative consequences of drug trafficking for the economy include the vast amount of resources diverted to Governmental repression of this activity, an increase of corruption at every level of society, and the aggravation of violence associated with common delinquency. By 1992 the sources of economic growth in Colombia were derived from the primary sector (agriculture, fishing, and forestry) at 23%, the secondary sector (industry and manufacturing) at 39%, and the tertiary sector (services) at 38% (IBRD/The World Bank 1994). In spite of the persistent, if low, growth the economy is still mainly an informal one. While official unemployment rates ranged between 8 to 12% during the 1990s, 53% of urban workers are still employed in the informal sector, salaries have not improved, and the downward trend in the Gini index (an indicator of income inequality) has been very slow during the last 15 years (Fedesarrollo 1995).

Education

Primary and secondary education are free and provided by the state. The educational system consists of one year of pre-school for children under the age of six, five years of primary schooling for children seven to 11, and six years of secondary education for children from 12 to 17. Private schooling is available at both primary and secondary levels. The public education share of expenditures in GDP was 2.9% by 1992 (IBRD/The World Bank 1994). The private sector accounts for 15% of the total enrolment for primary school, 40% for secondary school, and 60% for higher education. (IBRD/The World Bank 1994). The enrolment is higher for females at all levels of schooling, in both rural and urban areas, and across income groups. Coverage is higher in urban than in rural areas. Overall, the education system achieves a coverage rate of about 86% at the primary level and near 50% at the secondary level. Quality, coverage and efficiency are the main problems of the education system in Colombia.

Table 3. Some indicators of education in Colombia.

Indicator	Year	
	1970	**1994**
Adult literacy rate	78	91
	1980	**1994**
Gross enrolment ratio for all levels (% age 6-23)	53	70
Primary school enrolment as a % of age group (female-male)	126-123	120-118

Sources: (UNDP 1997; World Bank 1997)

Health

By 1994 the Colombia health care system had three components with different coverage rates: the public health system (35%), private services (17%), and the Institute of Social Security (22%). Twenty-six percent of the population have no access to health services. The Institute of Social Security provides retirement pensions and health services to those workers paying a monthly fee to the institution. Colombia spends 6% of GDP on health services: 4% on private, 1% on public, and 1.6% on social security expenditure (IBRD/The World Bank 1994). The inequity in the distribution of health resources becomes clearer once it is taken into account that the expenditure per capita in the social security system is US$69, while in the public services, which cover the lower income groups, it is only US$12. The latter is inadequate for covering the cost of basic health care services for a middle income country, estimated at US$22 (IBRD/The World Bank 1994). According to a recent report of the World Bank, 20% of all Colombians are in need of health care services, and 36% among the poorest 10% of the population, are unable to attend medical facilities because of the cost (IBRD/The World Bank 1994). If it is considered that lower income groups are among those most affected by violence, it may be argued that most of the poorest people attend a medical facility only when they are victims of violence. Although important achievements have occurred in some indicators (see Table 4), violence is the most important health problem in Colombia. Indeed homicides, is the primary cause of death, accounting for around 17% of all deaths! Other important causes of death, are coronary hearth disease (11.3% of all deaths), respiratory diseases (7.7%), brain-vascular diseases (7.2%), cancer (5.0%), lung-vascular diseases (4.6%), motor-vehicle accidents (3.6%).

Table 4. Some indicators of health in Colombia

Indicator	Year	
	1980	**1995**
Infant mortality rate (per 1,000 live births)	45	26
		1990-95
Population with access to health services (%)		81
— access to safe water		85
— access to sanitation		85
		1992
Daily calorie supply per capita (kiloCalories)		2,678
		1989-95
Prevalence of malnutrition (% under 5)		10

Sources: (UNDP 1997; World Bank 1997)

APPENDIX 2.

GENERAL INFORMATION ABOUT CALI, VALLE, AND RISARALDA

Pereira (412,000 habitants), the capital of the department of Risaralda (844,184) is located 240 Kms. to the North of Cali. This city was founded in the mid-1800s by Colombians who were colonising virgin forests in the centre-west of the country. It has followed a pattern of development similar to Cali (see Table 5), in demographic and economic terms, though the size of its economy is much smaller.

Table 5. Comparative profile of some indicators of human development of the departments of Valle and Risaralda

Indicator	Risaralda (%)	Valle (%)
Households having...		
Electricity	97	97
Water	87	90
Sewage	81	79
Source of power for cooking...		
Electricity	41	66
Fuel oil	12	10
Gas	34	17
Wood	13	7
Education level in 5 years and older		
None level	7	5
Primary	54	48
Secondary	33	39
Higher education	6	8
Literacy	88	89

Source: DANE (1995)

This department is the main producer of coffee, which was the country's main export until very recently. Although the economic activity is mainly agriculture, during the last

20 years agricultural production has become more industrialised. The ethnic and demographic characteristics of this department are similar to Cali, though in the latter city the proportion of black people is higher. Unfortunately, like Cali, violence is also the main cause of death.

Cali, the capital of the department of Valle del Cauca, is located 370 Kms. southwest of Bogota, the capital of Colombia, which is the geographic centre of the country. The city was founded early in the 16th century by Spanish conquerors. It remained a small and insignificant village until early this century, when some members of the community started a process of modernisation and economic development, based mainly on agricultural production. This process was particularly strong during the 1940s and 1950s. By 1994, Cali was the Colombia's second largest city in terms of population (1,847,176) and the country's third economic centre, after Bogota and Medellin.

The demographic pattern of the city and the country as a whole are very similar. The epidemiological profile of mortality rates shows that 30.2% of all deaths are due to violence (51.3% of these deaths occur in the 15-64 age group) (Duque 1994). In the same age group, the infectious diseases represent only 5.9% of the mortality. Life expectancy is 69.71 years, ranging from 67.47 for those with low socio-economic status to 76.31 for those with high socio-economic status.

20 years agricultural production has become more industrialised. The ethnic and demographic characteristics of this department are similar to Cali, though in the latter city the proportion of black people is higher. Unfortunately, like Cali, violence is also the main cause of death.

Cali, the capital of the department of Valle del Cauca, is located 370 Kms. southwest of Bogota, the capital of Colombia, which is the geographic centre of the country. The city was founded early in the 16th century by Spanish conquerors. It remained a small and insignificant village until early this century, when some members of the community started a process of modernisation and economic development, based mainly on agricultural production. This process was particularly strong during the 1940s and 1950s. By 1994, Cali was the Colombia's second largest city in terms of population (1,847,176) and the country's third economic centre, after Bogota and Medellin.

The demographic pattern of the city and the country as a whole are very similar. The epidemiological profile of mortality rates shows that 30.2% of all deaths are due to violence (51.3% of these deaths occur in the 15-64 age group) (Duque 1994). In the same age group, the infectious diseases represent only 5.9% of the mortality. Life expectancy is 69.71 years, ranging from 67.47 for those with low socio-economic status to 76.31 for those with high socio-economic status.

APPENDIX 3

EDUCATIONAL MATERIALS EMPLOYED IN THE CAMPAIGN.

Audio-visual materials.

Video spots contained in the VHS-cassette enclosed with this dissertation are those aired during the six weeks of the campaign by the local television station.

Spot one: "Coughing for more than 15 days?".

A consecutive sequence of numbers starting at one appear on the screen while someone is coughing off the screen. Once the counting reaches to 15 the number disappears and a faint light illuminates an actor—creating a chiaroscuro pattern on the face of the actor, thus disguising the gender—who is covering his or her mouth with a handkerchief while coughing. A voice off the screen asks the actor just when the face is barely illuminated:

— More than 15 days coughing?

Afterwards, a high pitch sound precedes each one of the following texts appearing on the screen:

Tuberculosis - Mortal without treatment - Contagious only by coughing - Curable - Treatment is free

Once the list ends, the voice off the screen invites the audience:

— Visit your nearest health centre!

Spot two: "Normal life with tuberculosis"

Several snapshots are presented of a young woman in situations of normal life (having a meal with other people, talking by phone, chatting with a friend while having an ice-cream, and playing with a kid). In the last snapshot, while she raises up the kid in her arms, the volume of the background music also rises and a voice off the screen says:

—You can also get a normal life with tuberculosis...help us to make her life easier!

The spot ends when the camera freezes as she kisses the child.

English version of the text in flyers inserted in the newspapers.

First flyer.

How to take the sample for a direct smear test.

1. The sample must be taken whenever you are coughing up; this is easier late in the evening or early in the morning.
2. Try to take the sample after intense coughing. Ah...don't be ashamed of any sample you get, but avoid collecting saliva.
3. The sample must be kept inside the cup which you must first obtain from the health centre. Bring it to the health centre between 7:00 am and 3:30 PM. Keep it in a fresh place in case you can deliver it the same day you got it.
4. Deliver the sample on time to the lab. Remember: three samples are needed for carrying out the diagnosis. If you are receiving treatment for TB you must bring one sample every month.

Tuberculosis.

In Colombia, more than 10,000 people catch TB every year.

The disease is curable; the test for diagnosis and the treatment is free in the public health care centres.

Each time you cough for more than 15 days, go to the health care centre and ask for a baciloscopia (direct smear test).

Remember, the disease is transmissible only by coughing, and every person is at risk, regardless of the gender, race, age, and socio-economic status. Only early diagnosis and treatment would help us to control the disease.

Second flyer.

Have you been coughing for more than 15 days?

Go to your nearest health care centre and ask for a direct smear.

In Colombia, more than 10,000 people catch TB every year.

The disease is curable; the test for diagnosis and the treatment is free in the public health care centres.

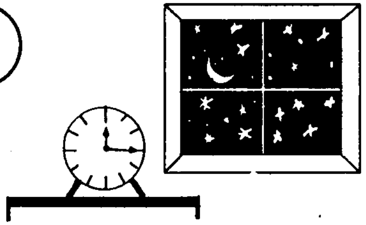
Remember, the disease is transmissible only by coughing, and every person is at risk regardless of gender, race, age, and socio-economic status. Only early diagnosis and treatment will help us to control the disease.

Feature articles published by the local newspapers.

A reduce sized photocopy of three articles dealing with the campaign and published by the local newspapers is included in this appendix. Two articles were published by "El Pais" the newspaper with, by far, the highest circulation in Cali and the department of Valle. A third one was published by "El Caleño", a sensacionalist tabloid with a smaller circulation, and which is read almost exclusively by working-class people. These articles reports the press conference given by the LAC-Valle and the Secretariat of Public Health for launching the campaign, and basic information relevant to the aims of the campaign.

COMO TOMAR LA MUESTRA DE BACILOSCOPIA

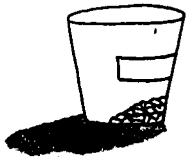
1



La toma de Baciloscopias (BK) debe hacerse a cualquier hora en que haya abundante expectoración (flemas), lo cual es más fácil en la noche y la madrugada.

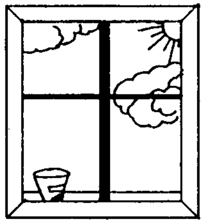
2

Trate de tomar la muestra después de una tos intensa Ah . . . no le de pena traer la muestra que salga, evite de ser posible, la recolección de saliva.



3

La muestra debe guardarse en el recipiente que se entrega para este fin y traerla al día siguiente de 7:00 a.m. a 3:30 p.m. guárdese en un lugar fresco, si no la puede traer el mismo día.



4

Entréguela oportunamente al laboratorio. Recuerde: son tres (3) muestras que se necesitan para el diagnóstico. Si está en tratamiento debe prácticarse una (1) baciloscopia mensual.

LA TUBERCULOSIS

En Colombia cada año se enferman más de 10.000 personas por Tuberculosis.

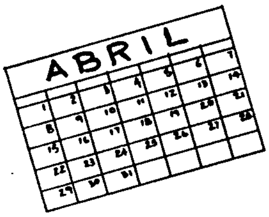
La enfermedad es curable; el examen para su diagnóstico y su tratamiento son gratuitos en los Centros de Salud.

Cada vez que presente TOS por más de 15 días acuda al Puesto de Salud más cercano y solicite el examen de BACILOSCOPIA.

Recuerde, la enfermedad sólo se contagia a través de la TOS y puede atacar a cualquier persona sin distinción de sexo, raza, edad y condición económica. Sólo un diagnóstico y tratamiento oportuno permitirá controlar la enfermedad.

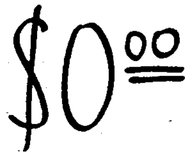
LIGA ANTITUBERCULOSA COLOMBIANA
L.A.C.
Y DE ENFERMEDADES RESPIRATORIAS
COMITE DEL VALLE
CALLE 25N No. 2BN-82
TELEFONOS: 612374 - 679673
CALI - COLOMBIA

TIENE TOS
HACE MAS
DE 15 DIAS?



Acuda al Puesto de Salud más cercano y solicite el examen de BACILOSCOPIA.

En Colombia, cada año se enferman más de 10.000 personas por Tuberculosis.



La enfermedad es curable; el examen para su diagnóstico y su tratamiento son gratuitos en los Centros de Salud.

Recuerde la enfermedad sólo se contagia a través de la tos y puede atacar a cualquier persona sin distinción de sexo, raza, edad y condición económica. Sólo un diagnóstico y tratamiento oportuno nos permitirá controlar la enfermedad.

LIGA ANTITUBERCULOSA COLOMBIANA
L. A. C.
Y DE ENFERMEDADES RESPIRATORIAS
COMITE DEL VALLE
CALLE 25N No. 2BN-82
TELEFONOS: 612374 - 879673
CALI - COLOMBIA

IMAGE REDACTED DUE TO THIRD PARTY RIGHTS OR OTHER LEGAL ISSUES

IMAGE REDACTED DUE TO THIRD PARTY RIGHTS OR OTHER LEGAL ISSUES

IMAGE REDACTED DUE TO THIRD PARTY RIGHTS OR OTHER LEGAL ISSUES

APPENDIX 4

QUESTIONNAIRES EMPLOYED IN THE PRE- AND POST-TEST SURVEYS ASSESSING IMPACT OF THE CAMPAIGN ON PREJUDICE AGAINST PWT.

Pre-test survey.

1. Let's suppose you have been coughing for more than 15 days. What do you should do?[3]
Nothing
Attending the GP
Self-treatment
Ask for an opinion from someone other than health service
Self tests for diagnosis
Attending for a bacilloscopy
Other
Don't know.

2. Looking at this card, tell me how much are you disturbed when somebody cough without covering his/her mouth?:[4]
Disturbs me a lot
Doesn't disturb me too much
It leaves me cold

3. Did you know or have you heard before about a disease called tuberculosis?:
yes
no

4. Through which source did you get information about tuberculosis?:
Television
Radio

---

[3] Conventionally, open-ended questions are not followed by colons.

[4] Close-ended questions are followed by colons, and the options, printed in a card, are showed to the interviewee.

Newspaper/Magazine
Friends
Knew a sick person
Other
Don't know/no answer

5. What do you believe is the way to be infected with tuberculosis?
Sharing the same dish
Kissing
Sexual relationship
Studying/working with the patient
Exposure to a coughing person
Other
Don't know/Don't answer

5A. Looking at this card (Likert-type scale) tell me how much you agree about the possibility of being infected with TB when dealing with PWT in each of the following conditions:

	Strongly agree	Agree	Disagree	Strongly disagree	No opinion
Sharing the same dish	1	2	3	4	5
Kissing	1	2	3	4	5
Sexual relationship	1	2	3	4	5
Studying/working with the patient	1	2	3	4	5

6. Do you think that TB is a curable disease?:
Yes, I think so
No, I don't think so
I don't know

7. What kind of person is more susceptible to getting TB?:

Children

Poor people

Homeless

Drug-addicts

Undernourished

Everybody

Other

Don't know

8. What would you feel if you were told that your neighbour or your work colleague has TB?

Fear

Repugnance

Anger

Pity

Encouragement

8a. Looking at this card (modified Likert-type scale), tell me how intense would that feeling be?

	Strong feeling	Mild feeling	None
Fear	1	2	3
Repugnance	1	2	3
Anger	1	2	3
Pity	1	2	3
Encouragement	1	2	3

9. Do you think that if somebody has TB, his/her contacts like friends and partners should be notified?:

Yes, it should be

No, it shouldn't

Don't know/Don't answer

10. What are your reasons for notifying them?
To avoid contact/transmission to children
To avoid contact/transmission to other people
To take preventive measures in the work/study place
To take preventive measures in the neighbourhood
Other
Don't know/Don't answer

11. Why do you think that some people are easier than others for getting TB?
Malnutrition
Disordered life
Drug-addiction
Other
Don't know/Don't answer

12. Do you think that someday you could be suffering of TB?:
Yes, I could be.
No, I couldn't
Don't know/Don't answer

13. Do you know about or have you heard about 'the antituberculosis league'?
Yes, I know about
No, I don't know

13a. From which source did you get information about 'the antituberculosis league'?:
Television
Radio
Newspaper/Magazine
Friends
I had take lab tests there
Other

14. 'The antituberculosis league' offer x-rays and lab tests services to people with and without tuberculosis. If you would require one of these tests, how fearful would be for you to visit 'the league'?:

	Without fear	Mild fear	Strong fear	Don't know/ Don't answer
To visit 'the league'	1	2	3	4

15. Let's suppose that you are diagnosed with tuberculosis, would you be able of:

	Yes	No	Don't know/Don't answer
Be compliant with the treatment?	1	2	3
Telling the new condition to your friends?	1	2	3
Be careful with dishes, kisses, food, etc.?	1	2	3

16. *Socio-economical condition (postcoded)

AB	1	C	2	D	3	E	4

*Age (postcoded)

15-18	1	19-24	2	25-34	3	35-44	4
45-54	5	55-64	6	65- +	7		

*Educational level (number of years attending school)

0-5	1	6-10	2	11	3	12-14	4
15- +	5	Vocational training	( )				

*Sex: Female 2 Male 1

Post-test survey.

In the post-test survey the next question was added to the questionnaire :

17. Have you seen, listen or read some advertising messages, news programme, or chat show about tuberculosis?

APPENDIX 5

SCALES MEASURING THE INSTRUMENTAL COMPONENT OF THE PREJUDICE TOWARDS PEOPLE WITH TUBERCULOSIS

1. Cognitive component

What are the chances of getting infected of TB by...

- sharing cutlery with PWT
- kissing PWT
- sexual relationship with PWT
- studying/working with PWT

(response categories: 1= Absolutely sure; 2= very probable; 3= Don't know/don't answer; 4=very improbable; 5= Not possible).

2. Affective component

How intense are these feelings respect PWT?:

- fear
- loathing
- anger
- sorrow

(response categories: 1= Very strong; 2=Some; don't know/don't answer; 3= None

3. Social distance scale for assessing the prejudice towards PWT:

Would you be able to...

- kiss PWT
- share meals with PWT
- have sex with PWT
- work/study with PWT
- hug PWT

(response categories: 1= Strongly disagree; 2= Don't know;don't answer; 3= Strongly agree)

REFERENCES

Aaron, H., T. Mann, et al., Eds. (1994). Values and public policy. Washington DC, The Brookings Institution.

Agar, M. (1996). “Recasting the "Ethno" in "Epidemiology".” Medical Anthropology **16**: 391-403.

Aggleton, P. (1990). Health. London, Routledge.

Aitken, J. (1994). “Voices from the inside: managing district health services in Nepal.” International Journal of Health Planning and Management **9**(4): 309-340.

Alland, D., G. Kalkut, et al. (1994). “Transmission of tuberculosis in New York City: an analysis by DNA fingerprinting and conventional epidemiologic methods.” New England Journal of Medicine**330**: 1710-6.

Allport, G. (1954). The nature of prejudice. Reading, MA, USA, Addison-Wesley.

Analizar Mercadeo Ltd. (1994). Conocimiento y actitudes frente a la TB. Reporte para la Secretaria de Salud Municipal de Cali.

Anand, S. and K. Hanson (1997). “Disability-adjusted life years: a critical review.” Evaluation Practice **16**: 685-702.

Anderson, E. (1993). Value in ethics and economics. Cambridge, Harvard University Press.

Andersson, H. and D. Granberg (1997). “On the validity and reliability of self-reported vote: validity without reliability?” Quality & Quantity **31**: 127-140.

Anonymous (1993). “Tuberculosis: a global emergency.” World Health Forum **14**: 438.

Aronson, E. (1969). The theory of cognitive dissonance. Advances in Experimental Social Psychology. L. Berkowitz. San Diego, CA, Academic Press. **4:** 1-34.

Audi, R., Ed. (1995). The Cambridge Dictionary of Philosophy. Cambridge, Cambridge University Press.

Bandura, A. (1977). Social Learning Theory. Englewood Cliffs, NJ, USA, Prentice Hall.

Banerji, D. (1986). “Health promotion: a personal view from the South.” Health Promotion International **1**(1): 81-82.

Barker, C. and A. Green (1996). “Opening the debate on DALYs.” Health Policy and Planning **1**(2): 179-183.

Barnhoorn, F. and H. Adriaanse (1992). “In search of factors of noncompliance among tuberculosis patients in Wardha District, India.” Social Science and Medicine **34**: 291-306.

Baum, F. (1995). “Researching public health: behind the qualitative-quantitative methodological debate.” Soc Sci Med **40**(4): 459-468.

Bayer, R. and L. Dupuis (1995). “Tuberculosis, public health, and civil liberties.” Annual Review of Public Health **16**: 307-26.

Beattie, A. (1991). Knowledge and control in health promotion: a test case for social policy and social theory. The sociology of the health service. J. Gabe, M. Calnan and M. Bury. London, Routledge: 162-203.

Beattie, A. (1995). "Evaluation in community development for health: an opportunity for dialogue." Health Education Journal **54**: 465-472.

Beirne, CJ. 1996. Jesuit education and social change in El Salvador. Garland Press. New York

Bennett, P., S. Murphy, et al. (1995). "Psychology, health promotion and Aesthemiology." Health Care Analysis **3**: 15-26.

Berkanovic, E. and N. Aaronson (1986). "The decision to seek medical care for symptoms: an appraisal of theoretical approaches." Advances in Health Education and Promotion **1**(Pt. A): 165-179.

Berkman, L. and L. Syme (1979). "Social networks, host resistance and mortality: a nine year follow up study of Alameda county residents." American Journal of Epidemiology **109**: 186-204.

Berman, P. (1996). "Health sector reform: a worldwide perspective." Current Issues in Public Health **2**: 34-38.

Bertrand, J., R. Santiso, et al. (1982). "Family planning communications and contraceptive use in Guatemala." Stud Fam Plann **13**(6-7): 190-199.

Bevan, E. (1997). "Letters: Tuberculosis treatment is expensive for patients in developing countries." British Medical Journal **315**: 187-88.

Bhatti, N., M. Law, et al. (1995). "Increasing incidence of tuberculosis in England and Wales: a study of the likely causes." BMJ **310**(15 April): 967-9.

Bignall, J. (1982). "Failure to control tuberculosis: a personal view." Tubercle **63**: 171-174.

Birdsall, N. (1992). Health and development: what can research contribute? Advancing health in developing countries: the role of social research. L. Chen, A. Kleinman and N. Ware. Westport: 159-185.

Birdsall, N. and J. Londoño (1997). "Asset inequality matters: an assessment of the World Bank's approach to poverty reduction." American Economic Review **87**(2): 32-37.

Black, N. (1994). "Why we need qualitative research." Journal of Epidemiology and Community Health **48**: 425-426.

Bloch, A., I. Onorato, et al. (1996). "The need for epidemic intelligence." Public Health Reports **111**(January-February): 26-31.

Bloch, A., P. Simone, et al. (1996). "Preventing multidrug-resistant tuberculosis." Journal of American Medical Association **275**(6): 487-489.

Bloom, B. and C. Murray (1992). "Tuberculosis: commentary on a reemergent killer." Science **257**: 1055-64.

Bloom, S. (1995). "Editorial: Reform without change? Look beyond the curriculum." Am J Public Health **85**(7): 907-8.

Boff, L. (1984). Ecclesiogenesis: the base communities reinvent the Church. New York, Maryknoll.

Bosman, M., J. van Gorkom, et al. (1995). "The tuberculosis Manyatta Project of the NLTP of Kenya: the first decade." Tubercle and Lung Disease **76**(Suppl 2): 117-8.

Bradshaw, B. and D. Smith (1997). "Decline of tuberculosis mortality in an urban Mexican-origin population, 1935-1984." Social Biology **44**(1-2): 25-41.

Branford, S. and B. Kucinski (1988). The debt squads: the US, the banks and Latin America. London, Zed Books.

Brenner, E. and C. Poszik (1993). Case holding. Tuberculosis: an international approach. L. Reichman and E. Hershfield. New York, Marcel Dekker: 183-205.

Bromley, R. (1981). "Begging in Cali: Image, reality and policy." International Social Work **24**(2): 22-40.

Brudney, K. and J. Dobkin (1991). "A tale of two cities: Tuberculosis control in Nicaragua and New York city." Seminars in Respiratory Infections **6**(4): 261-272.

Bryder, L. (1988). Below the Magic Mountain: a social history of tuberculosis in twentieth-century Britain. Oxford, Clarendon Press.

Bryder, L. (1990). "Correspondence: Comments on "The Historical decline of Tuberculosis in Europe and America: its causes and significance"." Journal of the History of Medicine and Allied Sciences **46**(July): 358-68.

Bryder, L. (1996). "Not always one and the same thing: the registration of the tuberculosis deaths in Britain 1900-1950." Social History of Medicine **9**(2): 253-265.

Bulmer, M. and D. Warwick (1993). Social research in developing countries: surveys and censuses in the Third World. London, UCL Press Ltd.

Bulmer-Thomas, V., Ed. (1996). The new economic model in Latin America and the impact on income distribution and poverty. Hampshire, UK, ILAS-MacMillan.

Bunda, M. (1985). "Alternative systems of ethics and their application to education and evaluation." Evaluation and Program Planning **8**(1): 25-36.

Bunton, R. and G. MacDonald (1994). Health promotion: discipline or disciplines. Health promotion: discipline or diversities. R. Bunton and G. MacDonald. London, Routledge: 7-19.

Bunton, R., S. Murphy, et al. (1991). "Theories of behavioral change and their use in health promotion: some neglected areas." Health Education Research

Bunton, R. and S. Nettleton, Eds. (1995). The sociology of health promotion. London, Routledge.

Buri, P., P. Vathesatogkit, et al. (1985). "A clinic model for a better tuberculosis treatment outcome and factors influencing compliance." Journal of Medical Thailand Association **68**(7): 356-360.

Burleson, B., T. Albrecht, et al., Eds. (1994). Communication of social support: messages, interactions, relationships and community. Thousand Oaks, CA, Sage.

Burnett, N. and H. Patrinos (1996). "Response to critiques of priorities and strategies for education: a World Bank review." International Journal of Educational Development **16**(3): 273-276.

Burrows, R., R. Bunton, et al. (1995). "The efficacy of health promotion, health economics and late modernism." Health Education Research: Theory & Practice **10**(2): 241-249.

Caldwell, J. (1993). "Health transition: the cultural, social and behavioural determinants of health in the Third World." Social Science and Medicine **36**(2): 125-135.

Moore, MH. (1986). Social science and policy analysis: some fundamental differences. "Ethics, the social sciences and policy analysis". Callahan, D and B. Jennings. New York. Plenum Press

Caplan, R. (1993). "The importance of social theory for health promotion: from description to reflexivity." Health Promotion International **8**(2): 147-157.

Carr, W. (1991). "Education for citizenship." British Journal of Educational Studies **39**(4): 373-385.

Cartford, J. (1995). "The mass media is dead: long live to multimedia." Health Promotion International **10**(4): 247-251.

Cassel, J. (1976). "The contribution of social environment to host resistance." American Journal of Epidemiology **104**: 107-123.

Center for Disease Prevention and Control (1995). Improving tuberculosis treatment and control: an agenda for behavioural, social, and health services research. Proceedings of Tuberculosis and Behaviour: National Workshop on Research for the 21st Century, Aug 28-30, 1994, Bethesda, CDC, Atlanta.

Centers for Disease Control and Prevention, and World Health Organisation. (1994). Epi Info 6. Atlanta (USA) & Geneva (Switzerland).

Chaulet, P. (1987). "Compliance with antituberculosis chemotherapy in developing countries." Tubercle **68**(Supple): 19-24.

Chinese Tuberculosis Control Collaboration. (1996). "Results of directly observed short-course chemotherapy in 112 842 Chinese patients with smear-positive tuberculosis." The Lancet **347**(February 10): 358-362.

Clift, E. (1990). "Healthcom: a communication methodology for health in the Third World." Health Education Research

Climent, C., M. De Arango, et al. (1983). "Development of an alternative, efficient, low-cost mental health delivery system in Cali, Colombia." Social Psychiatry **18**(2): 95-102.

Cohen, L. and L. Manion (1994). Research methods in education. London, Routledge.

Cole, S. (1996). "Why sequence the genome of Mycobacterium Tuberculosis." Tubercle and Lung Disease **77**: 486-490.

Coleman, J. (1988). "Social capital in the creation of human capital." American Journal of Sociology **94**(Suppl): S95-S120.

Collins, C. (1988). "Local government and urban protest in Colombia." Public Administration and Development **8**: 421-436.

Collins, L. (1996). “Is reliability obsolete? A commentary on "Are simple gain scores obsolete?".” Applied Psychological Measurement **20**(3): 289-292.

Colombian Support Network. (1996). “Colombia overview: social, political and economic conditions behind the violence.” Justicia y Paz: A magazine of human rights for Colombia **1**(1): (electronic version).

Conolly, M. and P. Nunn (1996). “Women and Tuberculosis.” World Health Statistics Quarterly **49**: 115-119.

Cook, T. and D. Campbell (1979). Quasi experimentation: design and analysis issues for field settings. Boston, Houghton-Mifflin Company.

Cook, T. and W. Shadish (1994). “Social experiments: some developments over the past fifteen years.” Annual Review of Psychology **45**: 545-80.

Coreil, J. (1995). “Group interview methods in community health research.” Medical Anthropology **16**: 193-210.

Coyle, S., R. Boruch, et al., Eds. (1991). Evaluating AIDS Prevention Programs. Washington, DC, National Academy Press.

Crandall, C. and D. Moriarty (1995). “Physical illness stigma and social rejection.” British Journal of Social Psychology **34**: 67-83.

Crandall, C. and J. Glor (1997). “AIDS-related stigmatization: instrumental and symbolic attitudes.” Journal of Applied Social Psychology **27**(2): 95-123.

Crawford, R. (1977). “'You are dangerous to your health: the politics and ideology of victim blaming'.” International Journal of Health Services **7**(4): 663-80.

Cronbach, L. (1980). Toward reform of program evaluation: aims, methods and institutional arrangements. San Francisco, Jossey-Bass Inc., Publishers.

Cronbach, L. and L. Furby (1970). “How we should measure change-or should we?” Psychological Bulletin **74**: 68-80.

Cruz, L. (1994). “Fundacion Carvajal; the Carvajal Foundation.” Environment and Urbanization **6**(2): 175-181.

Cuello, C., P. Correa, et al. (1982). “Socio-economic class differences in cancer incidence in Cali, Colombia.” International Journal of Cancer **29**: 637-643.

DANE (1995) Informe del Censo Nacional de Poblacion 1993. Santa Fe de Bogota.

Daniel, T. and A. Fauci (1992). Multidrug resistant tuberculosis. Harrison's Principals of Internal Medicine (Update), McGraw-Hill Publications: 1-14.

Davey-Smith, G. (1996). “Income inequality and mortality: why are they related?” British Medical Journal **312**(20 April): 987-8.

d'Houtad, A. and M. Field (1984). “The image of health: variations in perception by social class in a French population.” Sociology of Health and Illness **6**(1): 30-60.

De Roux, G. and C. Chelala (1994). “Letter from Cali: Violence in the Americas.” Journal of the American Medical Association **271**(10): 727.

de Sanjose, S., F. Bosch, et al. (1996). “Socioeconomic differences in cervical cancer: two case-control studies in Colombia and Spain.” American Journal of Public Health **86**: 1532-1538.

de Vaus, D. (1991). Surveys in social research. London, University College of London Press.

Dehar, MA, Casswell, S, Duignan, P. (1993). Formative and Process evaluation of health promotion and disease prevention programs. Evaluation Review **17**: 204-220.

Dhillon, H. and L. Philip (1994). Health promotion and community action for health in developing countries. Geneva, World Health Organization.

Dick, J., H. Van der Walt, et al. (1996). “Development of a health education booklet to enhance adherence to tuberculosis treatment.” Tubercle and Lung Disease **77**: 173-177.

Donner, A. and N. Klar (1994). “Cluster randomization trials in epidemiology: theory and application.” Journal of Statistical Planning and Inference **42**: 37-56.

Downie, R. (1990). Ethics in health education: an introduction. Ethics in health education. S. Doxiadis. West Sussex, England, John Wiley and Sons (Ltd).

Downie, R., C. Fyfe, et al. (1990). Health promotion: models and values. New York, Oxford University Press.

Doxiadis, S., Ed. (1990). Ethics of health education. West Sussex, UK, Wiley and Sons Co.

Draper, P., G. Best, et al. (1976). Health, money and the national health service. London, Unit for the study of health policy, Guy's Hospital.

Drucker, E., P. Alcabes, et al. (1995). “Childhood tuberculosis in the Bronx, New York.” The Lancet **343**: 1482-85.

Dubos, R. (1970). Man, medicine and environment. London, Hardmondsworth Penguin.

Dufour, D., L. Staten, et al. (1994). “Anthropometry and secular changes in stature of urban Colombian women of different socioeconomic status.” American Journal of Human Biology **6**: 749-760.

Dufour, D., L. Staten, et al. (1997). “Living on the edge: dietary strategies of economically impoverished women in Cali, Colombia.” American Journal of Physical Anthropology **102**(1): 5-15.

Duncan, P. and A. Cribb (1996). “Helping people change-an ethical approach?” Health Education Research: Theory & Practice **11**(3): 339-348.

Duque, S. (1994). Perfil epidemiologico de Santiago de Cali 1994. Cali, Secretaria de Salud Publica Municipal Santiago de Cali.

Eagly, A and Chaiken, S (1993). The Psychology of Attitudes. Forth Worth, TX. Harcourt Brace Jovanovich

El Espectador (1994). Bogota. August 7th 1994. B-1.

Enarson, D., J. Grosset, et al. (1995). "The challenge of tuberculosis: statements on global control and prevention." The Lancet **346**(September 23rd): 809-819.

Evans, D. and D. Jamison (1994). "Economics and the argument for parasitic disease control." Science **264**(24 June): 1866-67.

Faden, R. (1987). "Ethical Issues in Government Sponsored Public Health Campaigns." Health Education Quarterly **14**(1): 27-37.

Fagerlind, I. and L. Saha (1989). Education and national development: a comparative perspective. Oxford, Pergamon Press.

Farmer, P. (1996). "Social scientists and the new tuberculosis." Social Science and Medicine **44**(3): 347-358.

Farmer, P., S. Robin, et al. (1991). "Tuberculosis, poverty and "compliance": lessons from rural Haiti." Seminars in Respiratory Infections **6**(4): 254-260.

Farquhar, J. (1977). "Community education for cardiovascular health." Lancet **1**: 1192-5.

Farquhar, J., S. Fortmann, et al. (1985). "The Stanford Five-city Project: design and methods." American Journal of Epidemiology **122**(2): 323-335.

Fedesarrollo (1995). "III. Gasto social." Coyuntura Social **13**(Noviembre): 27-33.

Fineberg, H. and M. Wilson (1996). "Social vulnerability and death by infection." New England Journal of Medicine **334**(13): 859-860.

Fischer, F. (1980). Politics, values, and public policy: the problem of methodology. Boulder, CO, USA, Westview Press.

Fishman, D. (1992). "Postmodernism comes to program evaluation: a critical review of Guba and Lincoln's Fourth Generation Evaluation." Evaluation and Program Planning **15**: 262-270.

Fiszbein, A. (1997). "The emergence of local capacity: lessons from Colombia." World Development **25**(7): 1029-1043.

Fitz, D. and W. Tryon (1989). "Attrition and augmentation biases in time series analysis." Evaluation and Program Planning **12**: 259-270.

Flay, B. (1986). "Efficacy and effectiveness trials (and other phases of research) in the development of health promotion programs." Preventive Medicine **15**: 451-474.

Flay, B. (1987). "Mass media and smoking cessation: a critical review." American Journal of Public Health **77**(2): 153-160.

Flay, B. and T. Cook (1981). Three models for summative evaluation of prevention campaigns with a mass media component. Public Communication Campaigns. R. Rice and C. Atkin. Newbury Park, Sage.

Fogel, R. (1997). New findings on secular trends in nutrition and mortality: some implications for population theory. Handbook of population and family economics. M. Rosenweig and O. Stark. Amsterdam, Netherlands, Elsevier. **1A:** 433-481.

Foster, G. (1982). "Applied anthropology and international health: retrospect and prospect."

Human Organisation **41**: 189-197.

Foster, M. and A. Tomkins (1997). “Organization stressors and the experience of distress in health service organizations: symptoms, causes and remedies.” Tropical Doctor **27**(2): 73-75.

Fox, W. (1962). “Self-administration of medicaments: a review of published work and a study of the problems.” Bulletin International Union Against Tuberculosis **32**: 307-31.

Franco, S. (1997). “Violence and health in Colombia.” Revista Panamericana de Salud Publica/Pan American Journal of Public Health **2**(3): 170-180.

Freeman, R. (1992). The idea of prevention: a critical review. Private risks & Public dangers. S. Scott, G. Williams, S. Platt and H. Thomas. Hants, UK, Avebury: 34-56.

Freidenberg, J., M. Mulvihill, et al. (1993). “From ethnography to survey: some methodological issues in research on health seeking in East Harlem.” Human Organisation **52**(2): 151-161.

Freire, P. (1970). Pedagogy of the Oppressed. New York, The Seabury Press.

French, J. (1990). “Boundaries and horizons, the role of health education within health promotion.” Health Education Journal **49**(1): 7-10.

Freudenberg, N. (1995). “A new role for community organizations in the prevention and control of tuberculosis.” Journal of Community Health **20**(1): 15-28.

Frieden, T. (1994). “Tuberculosis control and social change.” American Journal of Public Health **84**(11): 1721-1723.

Frieden, T., P. Fujiwara, et al. (1995). “Tuberculosis in New York: city-turning the tide.” The New England Journal of Medicine **333**(4): 229-233.

Fukuyama, F. (1995). Trust: the social virtues and the creation of prosperity. London, Hamish Hamilton.

Fullerton, D., J. Holland, et al. (1995). Towards effective intervention: evaluating HIV prevention and sexual health education interventions. AIDS: Safety, sexuality and risk. P. Aggleton, P. Davies and G. Hart. London, Taylor and Francis: 90-108.

Garaway, G. (1997). “Evaluation, validity and values.” Evaluation and Program Planning **20**(1): 1-5.

Garfield, R. and S. Santana (1997). “The impact of economic crisis and US embargo on health in Cuba.” American Journal of Public Health **87**: 15-20.

Gastaldo, D. (1997). Is health education good for you? Re-thinking health education through the concept of bio-power. Foucault, health and medicine. Petersen, A and R. Bunton. London, Routledge: 113-133.

Gergen, K., M. Greenberg, et al., Eds. (1980). Social exchange: advances in theory and research. New York, Plenum Press.

Giddens, A. (1997). Sociology. Cambridge, UK, Polity Press.

Gilbert, A. (1997). “On subsidies and home-ownership: Colombia housing policy during the 1990s.” Third World Planning Review **19**(1): 51-70.

Gillon, R. (1990). “Ethics in health promotion and prevention of disease.” Journal of Medical Ethics **16**: 171-172.

Gilmore, N. and M. Somerville (1994). “Stigmatization, scapegoating and discrimination in sexually transmitted diseases: overcoming 'them' and 'us'.” Social Science and Medicine **39**(9): 1339-1358.

Giraldo, J. (1996). Colombia: the genocidal democracy. Monroe ME, USA, Common Courage Press,.

Girling, D. (1985). “Hong Kong Chest Service/British Medical Research Council survey of patients presenting to the goverment chest servise and the effects of active tuberculosis case-finding by a publicity campaign.” Bulletin of the International Union Against Tuberculosis **60**(3-4, September-December): 121.

Glanz, K., B. Rimer, et al. (1996). Ethical issues in the design and conduct of community-based intervention studies. Ethics and epidemiology. S. Coughlin and T. Beauchamp. New York, Oxford University Press: 156-177.

Glanz, K., F. Lewis, et al. (1990). Theory, research, and practice in health education: building bridges and forging links. Health behavior and health education: theory, research and practice. K. Glanz, F. Lewis and B. Rimer. San Francisco, Jossey-Bass Publishers: 17-32.

Glass, G. and F. Ellett (1980). “Evaluation research.” Annual Review of Psychology **31**: 211-28.

Goffman, E. (1968). Stigma: notes on the management of spoiled identity. Harmondsworth, UK, Penguin.

Gomez, H. (1995). “25 años de narcotrafico en Colombia.” Coyuntura Social.

Gonzalez, E., L. Armas, et al. (1994). “Tuberculosis in the republic of Cuba: its possible elimination.” Tubercle and Lung Disease **75**(3): 188-94.

Grace, V. (1991). “The Marketing of Empowerment and the Construction of the Health Consumer: A Critique of Health Promotion.” International Journal of Health Services **21**(2): 329-343.

Graeff, J., J. Elder, et al. (1993). Communication for health and behavior change. San Francisco, Jossey Bass Publishers.

Green, L. (1991). “Everyone has a theory, few have measurement.” Health Education Research **6** (2): 249-50

Green, L. and M. Kreuter (1991). Health promotion planning: a educational and environmental approach. Mountain View, CA, Mayfield Publishing Company.

Griffith, D., J. Hardeman, et al. (1995). “Tuberculosis outbreak among healthcare workers in a community hospital.” American Journal of Respiratory and Critical Care Medicine **152**(808-811): 809-811.

Gross, R. (1992). Psychology: the science of mind and behaviour. London, Hodder & Stoughton.

Gruber, J. and E. Tricket (1987). “Can we empower others? The paradox of empowerment in the governing of an alternative public school." American Journal of Community Psychology **15**: 353-372.

Grupo Interinstitucional de la Salud (1992). En busca de un programa para el control de la tuberculosis en Cali. Secretariat of Public Health of Cali.

Grzybowski, S., K. Styblo, et al. (1976). "Tuberculosis in eskimos." Tubercle **57**(Suppl): S1-58.

Guba, E. and Y. Lincoln (1989). Fourth Generation Evaluation. Newbury Park, Sage.

Gubler, D. and G. Clark (1994). "Community-based integrated control of Aedes Aegypti: a brief overview of current programs." American Journal of Tropical Medicine and Hygiene **50**(6 Suppl): 50-60.

Gutierrez, F. (1989). Factores que influyen en la perdida de pacientes del Programa de Tuberculosis de la Secretaria de Salud de Cali, Universidad del Valle.

Gutierrez, G. (1988). A theology of the liberation. New York, Maryknoll.

Guttman, N., M. Kegler, et al. (1996). "Health promotion paradoxes, antinomies and conundrums." Health Education Research: Theory & Practice **11**(1): i-xiii.

Hardoy, J., S. Cairncross, et al. (1990). The poor die young: housing and health in Third World Cities. London, Earthscan.

Harries, A., A. Kamenya, et al. (1996). "Sputum smears for diagnosis of smear-positive pulmonary tuberculosis." The Lancet **347**(March 23): 834-5.

Harries, A., A. Kamenya, et al. (1997). "Delays in diagnosis and treatment of smear- positive tuberculosis and the incidence of tuberculosis in hospital nurses in Blantyre, Malawi." Transactions of the Royal Society of Tropical Medicine and Hygiene **91**: 15-17.

Hauser, P. (1993). The limitations of KAP surveys. Social research in developing countries: surveys and censuses in the Third World. M. Bulmer and D. Warwick. London, UCL Press Ltd.: 65-70.

Healthcom Project (1985). Communication for child survival: lessons from five countries, Agency for International Development. Washington DC.

Herman, J., L. Morris, et al. (1987). Establishing the parameters of an evaluation. Evaluator's handbook. London, SAGE: 9-25.

Herman, J., L. Morris, et al. (1987). How to play the role of the formative or summative evaluator. Evaluator's handbook. London, SAGE: 26-41.

Herran, M. (1991). La industria de los medios masivos de comunicacion en Colombia. Bogota, Fundacion Friederich Ebert de Colombia.

Herrera, M. e. a. (1971). "Problematica sociologica del enfermo tuberculoso internado en hospitales de estancia prolongada." Salud Publica de Mexico **XIII**: 749-762.

Hong, Y., D. Kwon, et al. (1995). "Survey of knowledge, attitudes and practices for tuberculosis among general practitioners." Tubercle and Lung Disease **76**: 431-435.

House, E. (1993). Professional evaluation: social impact and political consequences. Newbury

Park, Sage.

Hsiao, W. (1994). "'Marketization'-the illusory magic pill." Health Economics **3**: 351-357.

Hsiao, W. (1996). "Economic reform and health-lessons from China." New England Journal of Medicine **335**(6).

Hubley, J. (1986). "Barriers to health education in developing countries." Health Education Research: Theory and Practice **1**(4): 233-245.

Hudelson, P. (1996). "Gender differentials in tuberculosis: the role of socio-economic and cultural factors." Tubercle and Lung Disease **77**: 391-400.

Humphries, M. (1995). "Tuberculosis: history of directly observed therapy." The Lancet **346**(366): 380.

Hyden, G. (1997). "Civil society, social capital, and development: dissection of a complex discourse." Studies in Comparative International Develpment **32**(1): 3-30.

IBRD/The World Bank (1994). Poverty in Colombia. Washington, DC, The World Bank.

Idukitta, G. and M. Bosman (1989). "The tuberculosis Manyatta Project for Kenyan nomads." Bulletin of the International Union Against Tuberculosis **64**(3): 44-47.

Ilon, L. (1996). "The changing role of the World Bank: education policy as global welfare." Policy and Politics **24**(4): 413-424.

International Extension College (1983). Mass media for health education. London, International Extension College.

Israel, B., B. Checkoway, et al. (1994). "Health education and community empowerment: conceptualizing and measuring perception of individual, organizational and community control." Health Education Quarterly **21**(2): 149-170.

Israel, B., M. Cummings, et al. (1995). "Evaluation of health education programs: current assessment and future directions." Health Education Quarterly **22**(3): 364-389.

Jacob, K., H. Jayakumari, et al. (1989). "Awareness of AIDS in India: effect of public education through the mass media." British Medical Journal **229**(16 September): 721.

Jaffre, Y. and A. Prual (1994). "Midwives in Niger: an uncomfortable position between social behaviours and health care constraints." Social Science and Medicine **38**(8): 1069-1073.

Jamison, D., W. Mosley, et al., Eds. (1993). Disease control priorities in developing countries: health policy responses to epidemiological change. New York, Oxford University Press.

Jaramillo, E. (1994). Evaluation del Programa Nacional de Control de Tuberculosis, Panamerican Health Office/WHO/Ministerio de Salud de Colombia.

Jaramillo, E. (1995a). "Integration of tuberculosis control program in the primary health care in Cali, Colombia." Tubercle and Lung Disease **76**(Supplement 2): 110.

Jaramillo, E. (1995b). "Knowledge, attitudes and practices of lay people about tuberculosis in Cali, Colombia." Tubercle and Lung Disease **76**(Supplement 2): 106.

Jaramillo, E. (1998). "Pulmonary tuberculosis and health seeking behaviour: how to get a delayed diagnosis in Cali, Colombia." Tropical Medicine & International Health **3**(2): 138-144.

Jaramillo, E. (forthcoming). "Tuberculosis control in less developed countries: can culture explaing the whole picture?" Tropical Doctor.

Jaramillo, E., R. Castro, et al. (1995). Knowledge and attitudes about tuberculosis control of health care workers in Cali, Colombia. The Lancet Conference The Challenge of Tuberculosis, Washington, D.C., The Lancet, Ltd. London.

Johansson, E., V. Diwan, et al. (1996). "Staff and patient attitudes to tuberculosis and compliance with treatment: an exploratory study in Vietnam." Tubercle and Lung Disease **77**: 178-183.

Johansson, R. (1994). "Food for thought: rethoric and reality in modern mortality history." Historical Methods **27**: 101-125.

Joint Committee for Standards of Educational Evaluation. (1994). The program evaluation standards: how to assess evaluations of educational programs. Newbury Park, CA, Sage.

Jones, E., A. Farina, et al. (1984). Social stigma: the psychology of marked relationships. New York, WH Freeman and Company.

Jowett, G. and V. O'Donnell (1986). Propaganda and persuasion. Newbury Park, CA, USA, Sage.

Junguito, R. (1995). "Colombia, el caso de un buen deudor." Coyuntura Social: 97-101.

Juvekar, S., S. Morankar, et al. (1995). "Social and operational determinants of patient behaviour in lung tuberculosis." Indian Journal of Tuberculosis **42**: 87-93.

Kazdin, A. (1982). Single-case research designs: methods for clinical and applied settings. New York, Oxford University Press.

Kazdin, A. (1984). Statistical analysis for single-case experimental designs. Single case experimental designs: strategies for studying behavior change. D. Barlow and M. Hersen. Oxford, UK, Pergamon Press: 285-324.

Kelly, E. (1995). Education, democracy and public knowledge. Oxford, Westview Press.

Kelly, M. and B. Charlton (1995). The modern and the postmodern in health promotion. The sociology of health promotion. R. Bunton, S. Nettleton and R. Burrows. London, Routledge: 79-90.

Kennedy, B., I. Kawachi, et al. (1996). "Income distribution and mortality: cross sectional ecological study of the Robin Hood index in the United States." British Medical Journal **312**(20 April): 1004-7.

Kenyon, T., S. Valway, et al. (1996). "Transmission of multi-drug resistant tuberculosis during a long airplane flight." New England Journal of Medicine **334**(15): 933-937.

Kim, S., B. Jin, et al. (1985). "Study on the knowledge of tuberculosis and attitudes towards the disease." Bulletin of the International Union Against Tuberculosis **60**(3-4): 131-132.

Kirkwood, B., S. Cousens, et al. (1997). "Issues in the design and interpretation of studies to evaluate the impact of community-based interventions." Tropical Medicine & International Health **2**(11): 1022-1029.

Kish, L. (1965). Survey Sampling. New York, Wiley & Sons.

Kleinbaum, D., L. Kupper, et al. (1997). Applied regression analysis and multivariate methods. Pacific Grove, CA, USA, Duxbury Press.

Kline, S., L. Hedemark, et al. (1995). "Outbreak of tuberculosis among regular patrons of a neighborhood bar." New England Journal of Medicine **333**(4): 223-227.

Kochi, A. (1991). "The global tuberculosis situation and the new control strategy of the World Health Organisation." Tubercle **72**: 1-6.

Kotler, P. (1982). Marketing for non profit organisations. Englewood Cliffs, New Jersey, Prentice-Hall.

Kotler, P. and L. Roberto (1989). Social marketing: strategies for changing public behavior. New York, The Free Press.

Kotler, P. and G. Zaltman (1971). "Social marketing: an approach to planned social change." Journal of Marketing **35**(July): 3-12.

Kumaresan, J. and E. Maganu (1992). "Case holding of patients with tuberculosis in Bostwana." British Medical Journal **305**: 340-341.

Lalonde, M. (1974). A new perspective on the health of the Canadians: a working document. Ottawa, Information Canada.

Lamm, R. (1996). "The ethics of excess." Public Health Reports **111**(May/June): 218-223.

Lancaster, E. (1993). "Tuberculosis comeback: impact on long-term facilities." Journal of Gerontology Nursing **9**: 16.

Landesman, S. (1993). "Commentary: Tuberculosis in New York-the consequences and lessons of failure." American Journal of Public Health **83**(5): 766-768.

Lang, J. (1988). Inside development in Latin America: A report from the Dominican Republic, Colombia and Brazil. Chapel Hill, NC, USA, The University of North Carolina Press.

Laurell, A. and O. Lopez (1996). "Market commodities and poor relief: the World Bank proposal for health." International Journal of Health Services **26**(1): 1-18.

Lecompte, M. (1994). "Sensible matchmaking: qualitative research design and the Program Evaluation Standards." Journal of Experimental Education **63**(1): 29-43.

Leippe, M. and D. Eisenstadt (1994). "Generalization of dissonance reduction: decreasing prejudice through induced compliance." Journal of Personality and Social Psychology **3**: 395-413.

Leonardi, R (1995). "Regional development in Italy: social capital and the Mezzogiorno" Oxford Review of Economic Policy **11**: 165-179

Lerner, B. (1993). "New York City's tuberculosis control efforts: the historical limitations of the war on consumption." American Journal of Public Health **83**(5): 758-766.

Lieban, R. (1976). "Traditional medical beliefs and the choice of practitioners in a Phillipine city." Social Science and Medicine **10**: 289-296.

Liefooghe, R., N. Michiels, et al. (1995). "Perception and social consequences of tuberculosis: a focus group study of tuberculosis patients in Sialkot, Pakistan." Social Science and Medicine **41**(12): 1685-1692.

Lincoln, Y. (1992). "Fourth generation evaluation, the paradigm revolution and health promotion." Canadian Journal of Public Health **83**(Supplement): S6-S10.

Link, B. and J. Phelan (1995). "Social conditions as fundamental causes of disease." Journal of Health and Social Behavior **36**(Extra issue): 80-94.

Loevinsohn, B. (1990). "Health education interventions in developing countries: a methodological review of published articles." International Journal of Epidemiology **19**(4): 788-794.

Loewenson, R. (1993). "Structural adjustment and health policy in Africa." International Journal of Health Services **23**: 717-730.

Lupton, D. (1995). The imperative of health: public health and the regulated body. London, Sage.

Lurie, P., P. Hintzen, et al. (1995). "Socioeconomic obstacles to HIV prevention and treatment in developing countries: the roles of the International Monetary Fund and the World Bank." AIDS **9**: 539-546.

Maccoby, N., J. Farquhar, et al. (1977). "Reducing the risk of cardiovascular disease: effects of a community based campaign on knowledge and behaviour." Journal of Community Health **23**: 100-114.

MacDonald, B. (1976). Evaluation and the control of education. Curriculum evaluation today: trends and implications. D. Tawney. London, Macmillan Education Ltd: 125-136.

MacDonald, B. and N. Norris (1980). Looking up for a change: political horizons in policy evaluation, Centre for Applied Research in Education, University of East Anglia, Norwich (UK).

Macdonald, G., C. Veen, et al. (1996). "Evidence for success in health promotion: suggestions for improvement." Health Education Research: Theory & Practice **11**(3): 367-376.

MacIntyre, A. (1987). The idea of an educated public. Education and Values: The Richard Peters Lectures. G. Haydon. London, Institute of Education: 15-36.

Mackenbach, J. (1996). "The contribution of medical care to mortality decline: McKeown revisited." Journal of Clinical Epidemiology **49**(11): 1207-1213.

Mahan, E. (1995). "Media, politics, and society in Latin America." Latin America Research Review **30**(3): 138-162.

Maibach, E. and D. Holtgrave (1995). "Advances in health communication." Annual Review of Public Health **16**: 219-238.

Mangtani, P., D. Jolley, et al. (1995). "Socioeconomic deprivation and notification rates for tuberculosis in London during 1982-91." British Medical Journal **310**: 963-6.

Mann, J., Gostin., L et al. (1994) "Health and human rights." Health and human rights 1: 7-23

Mann, J and D. Tarantola (1996) AIDS in the World II: global dimensions, social roots, and responses. Oxford University Press, New York.

Martinez, F. (1995). Informe de la evaluacion del Programa de Control de Tuberculosis de la Republica de Colombia, Ministerio de Salud/OPS.

Mata, J. (1985). "Integrating the client's perspective in planning a tuberculosis education and treatment program in Honduras." Medical Anthropology **5**(4): 57-64.

McAlister, A., P. Puska, et al. (1982). "Theory and action for health promotion: illustrations from the North Karelia project." American Journal of Public Health **72**(1): 43-50.

McDivitt, J., S. Zimicki, et al. (1993). "The impact of the Healthcom mass media campaign on timely initiation of breastfeeding in Jordan." Studies in Family Planning **24**(5): 295-309.

McKenna, M., E. McCray, et al. (1995). "The epidemiology of tuberculosis among foreign-born persons in the United States." New England Journal of Medicine**332**(16): 1071-6.

McKeown, T. (1976). The modern rise of populations. New York, Academic Press.

McKinlay, J. (1992). "Health promotion through healthy public policy." Canadian Journal of Public Health **83**(Supplement): S11-S19.

McKinlay, J. and S. McKinlay (1977). "The questionable contribution of medical measures to the decline of mortality in the United States in twentieth century." Milbank Memorial Fund Quarterly **55**(Summer): 405-428.

McLeroy, K., A. Steckler, et al. (1993). "Social science theory in health education: time for a new model?" Health Education Research: Theory and Practice **8**: 305-312.

McMichael, A. (1995). "The health of persons, populations, and planets: epidemiology comes full circle." Epidemiology **6**(6): 633-36.

McQuaid, D. (1994). Mass communication theory. London, Sage.

Meade, C. and C. Smith (1991). "Readability formulas: cautions and criteria." Patient Education and Counseling **17**: 153-158.

Meleis, A. and P. Bernal (1995). "The paradoxical world of daily domestic workers in Cali, Colombia." Human Organization **54**(4): 393-400.

Mendoza, P. (1997). La pobreza, culpa de quien? Semana: (http://www.semana.com.co/users/semana/julio21/plinio.htm.)

Menegoni, L. (1996). "Conceptions of tuberculosis and therapeutic choices in Highland Chiapas, Mexico." Medical Anthropology Quarterly **10**(3): 381-401.

Mertens, D. (1997). Research methods in education and psychology: integrating diversity with quantitative & qualitative approaches. Thousand Oaks, CA, USA, Sage.

Metcalf, C., D. Bradshaw, et al. (1990). "Knowledge and beliefs about tuberculosis among non-working women in Ravensmead, Cape Town." South African Medical Journal **77**: 408-411.

Millard, A. (1994). "A causal model of high rates of child mortality." Social Science and Medicine **38**(2): 253-268.

Ministerio de Salud (1992). Promocion de la Salud. Santa Fe de Bogota, Ministerio de Salud.

Ministerio de Salud (1994). Decreto 1891 del 3 de Agosto de 1994. Santa Fe de Bogota, Ministerio de Salud.

Ministerio de Salud (1995). Manual de Normas y Procedimientos del Programa Nacional de Prevencion y Control de Tuberculosis del Ministerio de Salud de Colombia. Santafe de Bogota,.

Mitchell, A. (1992). "Tuberculosis statistics and the McKeown thesis: a rebutall to David Barnes." Social History of Medicine **5**: 291-296.

Mohan, R. (1984). An anatomy of the distribution of urban income: a tale of two cities in Colombia. Washington, DC, The World Bank.

Mohan, R. (1994). Understanding the developing metropolis: lessons from the city study of Bogota and Cali, Colombia. New York, Oxford University Press.

Montero, J. (1995). Politica Nacional de Promocion y Prevencion, Ministerio de Salud.

Mori, T., T. Shimao, et al. (1992). "Analysis of case-finding process of tuberculosis in Korea." Tubercle and Lung Disease **73**: 225-231.

Moss, P. (1994). "Can there be validity without reliability?" Educational Researcher **23**(2): 5-12.

Murray, C. (1994). Issues in operational, social, and economic research on tuberculosis. Tuberculosis: pathogenesis, protection and control. B. Bloom. Washington D.C., American Society for Microbiology: 583-622.

Murray, C. and A. Lopez (1996). "Evidence-based health policy-lessons from the Global Burden Study." Science **274**(1 November): 740-743.

Murray, C. and A. Lopez (1997). "The utility of DALYs for public health policy and research: a reply." Bulletin of the World Health Organisation **75**(4): 377-381.

Murray, C., K. Styblo, et al. (1990). "Tuberculosis in developing countries: burden, intervention and cost." Bulletin of the World Health Organisation **65**: 6-24.

Murray, C., K. Styblo, et al. (1993). Tuberculosis. Disease Control Priorities in Developing Countries. D. Jamison, W. Mosley, A. Measham and J. Bobadilla. New York, Oxford Medical Publishers for the World Bank: 233-259.

Murray, D., S. McKinlay, et al. (1994). "Design and analysis issues in community trials." Evaluation Review **18**(4): 493-514.

Murray, J. (1995). "The international union against tuberculosis and lung disease: its contribution to world lung health." American Journal of Respiratory and Critical Care Medicine **151**: 1697-1699.

Nagata, Y., M. Aoki, et al. (1995). "Studies on case finding of tuberculosis patients in national tuberculosis centre (NTC) in Nepal." Tubercle and Lung Disease **76**(Suppl 2): 109-10.

Naidoo, J. (1986). Limits of individualism. The politics of health education: raising the issues. S. Rodmell and A. Watt. London, Routledge and Kegan Paul: 17-37.

Naidoo, J. and J. Wills (1994). Health promotion: foundations for practice. London, Bailliere Tindall.

Nair, D., A. George, et al. (1997). "Tuberculosis in Bombay: new insights from poor urban patients." Health Policy and Planning **12**(1): 77-85.

Ndeti, K. (1972). "Sociocultural aspects of tuberculosis defaultation: a case study." Social Science and Medicine **6**: 397-412.

Nettleton, S. and R. Bunton (1995). Sociological critiques of health promotion. The Sociology of Health Promotion. R. Bunton, S. Nettleton and R. Burrows. London, Routledge: 41-59.

Newton, K. (1997). "Social capital and democracy." American Behavioural Scientist **40**(5): 575-586.

Nichter, M. (1986). "The primary health care center as a social system: PHC, social status, and the issue of team work in South Asia." Social Science and Medicine **23**(4): 347-355.

Nichter, M. (1994). "Illness semantics and international health: the weak lungs/TB complex in the Philippines." Social Science and Medicine **38**(5): 649-663.

Nutbeam, D. (1998). "Evaluating health promotion-progress, problems and solutions." Health Promotion International **13**(1): 27-44.

Nutbeam, D., C. Smith, et al. (1990). "Evaluation in health education: a review of progress, possibilities and problems." Journal of Epidemiology and Community Health **44**: 83-89.

Nutbeam, D., C. Smith, et al. (1993). "Maintaining evaluation designs in long-term community based health promotion programes: Heartbeat Wales case study." Journal of Epidemiology and Community Health **47**(2): 127-133.

Nyamwaya, D. (1996). "Editorial: Impediments to health promotion in developing countries: the way forward." Health Promotion International **11**(3): 175-6.

O'Donnell, L., A. San Doval, et al. (1994). "Reducing AIDS and other STDs among inner-city hispanics: the use of qualitative research in the development of video-based patient education." AIDS Education and Prevention **6**(2): 140-153.

Office of the Advisor for the Development of the Constitution (1993). The Writ of Protection for Human Rights: Power for the Common. Presidency of the Republica of Colombia.

Olsen, J. (1997). "Theories of justice and their implications for priority setting in health care." Journal of Health Economics **16**: 625-639.

Ong, G., J. Austoker, et al. (1996). "Evaluation of written information sent to women who are called back for further investigation of breast cancer screening." Health Education Journal **55**: 413-429.

Orlandi, M., C. Landers, et al. (1990). Diffusion of health promotion innovations. Health behaviour and health education: theory, research and practice. K. Glanz, F. Lewis and B. Rimer. San Francisco, CA, Jossey Bass Inc: 288-313.

Orwin, R. (1997). Twenty-one years old and counting: the interrupted time series comes of age. Evaluation for the 21st century: a handbook. E. Chelimsky and W. Shadish. Thousand Oaks, CA, Sage: 443-465.

Pabon, H., V. de Restrepo, et al. (1986). "Effect of mass media communication on the coverage of a vaccination campaign." Boletin Oficina Sanitaria Panamericana **101**(1): 39-47.

PAHO (1996). Health Promotion and Equity: Declaration of the International Conference on Health Promotion 9-12 November 1992. Health Promotion: an anthology. Washington DC, Panamerican Health Organization: 335-338.

Pan American Health Organisation (1986). Tuberculosis control: A manual on methods and procedures for integrated programs. Washington D.C., World Health Organization.

Parsonson, B. and D. Baer (1978). The analysis and presentation of graphic data. Single subject research: strategies for evaluating change. T. Kratochwill. London, Academic Press: 100-165.

Patton, M. (1979). "Evaluation of program implementation." Evaluation Studies Review Annual **4**: 318-45.

Patton, M. (1987). Creative evaluation. Beverly Hills, CA, Sage.

Patton, M. (1990). Qualitative evaluation methods and research methods. Newbury Park, Sage.

Patton, M (1997) Utilization focused evaluation: the new century text. Thousand Oaks, CA, USA, Sage.

Pearce, N. (1996). "Traditional epidemiology, modern epidemiology, and public health." American Journal of Public Health **86**(5): 678-683.

Perls, T. (1995). "The oldest old." Scientific American **272**(1): 50-55.

Perry, C., T. Baranowski, et al. (1990). How individuals, environments, and health behavior interact: Social Learning Theory. Health behavior and health education: theory, research and practice. K. Glanz, F. Lewis and B. Rimer. San Francisco, Jossey-Bass Publishers: 161-186.

Persson, T. and G. Tabellini (1994). "Is inequality harmful for economic growth? Theory and evidence." American Economic Review **84**(3): 600-621.

Peters, R. (1970). Ethics and Education. London, George Allen and Unwin.

Petersen, A and R. Bunton. (1997). Foucault, health and medicine. London, Routledge

Pio, A. (1989). "Impact of present control methods on the problem of tuberculosis." Review of Infectious Diseases **11**(Suppl 2 March-April): S360-5.

Pocock, D., A. Khare, et al. (1996). "Letter to the editor: Case holding for tuberculosis in Africa: the patient's perspective." The Lancet **347**(May 4): 1258.

Pollock, A., M. Brannigan, et al. (1995). "Rationing health care: from needs to markets?" Health Care Analysis **3**: 299-314.

Pope, C. and N. Mays (1995). "Reaching the parts other methods cannot reach: an introduction to qualitative methods in health and health services research." British Medical Journal **311**(1 July): 42-45.

Porter, R. (1998). Where Prozac is prince. The Times Literary Supplement: 7.

Pratkanis, A. and M. Turner (1996). "Persuasion and democracy: strategies for increasing deliberative participation and enacting social change." Journal of Social Issues **52**(1): 187-205.

Prigogine, I. and I. Stengers (1984). Order out of chaos. London, Heinemann.

Pringle, D. (1998). "Tuberculosis mortality in England and Wales during 1982-1992: its association with poverty, ethnicity and AIDS." Social Science & Medicine **46**(6): 673-681.

Programa de Control de Tuberculosis (1993). Evaluacion del Programa de Control de Tuberculosis de la Secretaria de Salud Publica Municipal de Cali. Secretaria de Salud Publica Municipal de Cali.

Psacharopoulus, G., S. Morley, et al. (1995). "Poverty and income inequality in Latin America." Review of Income and Wealth **41**(3): 245-264.

Putnam, R. (1993). "The prosperous community: social capital and public life." The American Prospect Summer(13): 35-42.

Putnam, R., R. Leonardi, et al. (1993). Making democracy work: civic traditions in modern Italy. Princeton, NJ, USA, Princeton University Press.

Rappaport, J. (1987). "Terms of empowerment/exemplars of prevention: towards a theory of community psychology." American Journal of Community Psychology **15**: 121-147.

Raviglione, M. and F. Luelmo (1996). "Update on the global epidemiology of tuberculosis." Current Issues in Public Health **2**: 192-197.

Raviglione, M., C. Dye, et al. (1997). "Assessment of worldwide tuberculosis control." Lancet **350**(August 30): 624-29.

Rawson, D. (1994). The growth of health promotion theory and its rational construction. Health promotion: disciplines and diversities. R. Bunton and G. MacDonald. London, Routledge: 202-224.

Ray, M. (1990). Policy evaluation and the argumentation process. Policy theory and policy evaluation: concepts, knowledge, causes, and norms. S. Nagel. New York, Greenwood Press: 62-73.

Reichman, L. (1996). "How to ensure the continue resurgence of tuberculosis." Lancet **347**(January 20): 175-177.

Reichman, L. (1996). "Letter to the Editor: Controlling tuberculosis." Lancet **347**: 773-4.

Retterstol, N. (1992). "Suicide in the Nordic countries." Psychopathology **25**(5): 254-265.

Richardson, G. and H. Maltby (1995). "Reflection on practice: enhancing student learning." Journal of Advanced Nursing **22**(2): 235-42.

Rieder, I. and P. Ruppelt (1989). Matters of life and death: women speak about AIDS. London, Virago Press Ltd.

Rissel, C. (1994). "Empowerment: the holy grail of health promotion." Health Promotion International 9(1): 39-47.

Rodmell, S. and A. Watt (1986). The politics of health education: raising the issues. London, Routledge and Kegan Paul.

Rodrigues, L. and P. Smith (1990). “Tuberculosis in developing countries and methods for its control.” Transactions of the Royal Society of Tropical Medicine and Hygiene **84**: 739-744.

Rogers, E. (1983). Diffusion of innovations. New York, Free Press.

Rogers, T. (1994). “The treatment of measurement issues in the revised Program Evaluation Standards.” Journal of Experimental Education **63**(1): 13-28.

Rojas, O., A. Alzate, et al. (1988). A primary care programme of health promotion in Cali, Colombia. Measurement in health promotion and protection. T. Abelin, Z. Brzezinski and V. Carstairs. Copenhagen, World Health Organisation: 604-617.

Rondinelli, D., J. Nellis, et al. (1984). Decentralization in developing countries: a review of recent experiences. Washington, DC, World Bank.

Rose, G. (1992). The strategy of preventive medicine. Oxford, Oxford University Press.

Rosenstock, I. (1966). “Why people use health services?” The Milbank Memorial Fund Quarterly **44**(2): 94-124.

Rosenstock, I. (1990). The Health Belief Model: explaining health behaviour through expectancies. Health behavior and health education: theory, research and practice. K. Glanz, R. Lewis and B. Rimer. San Francisco, Jossey-Bass Publishers: 39-62.

Rossi de Gandini, P. (1994). “Informe a la Junta Directiva LAC sobre la campaña "Vamos a controlar la tuberculosis"” LAC-Chapter of Valle

Rossi de Gandini, P. and E. Jaramillo (1994). Vamos a controlar la tuberculosis en Cali, Liga Antituberculosa Colombiana y de Enfermedades Respiratorias, Comite del Valle.

Rossi, P. and H. Freeman (1993). Evaluation: A systematic approach. Newbury Park, CA, SAGE.

Rothschild, M. (1979). “Marketing communications in nonbusiness situations or why it's so hard to sell brotherhood like soap.” Journal of Marketing **43**: 11-20.

Roy, R. (1985). “Systematic health education of tuberculosis patients and of the population.” Bulletin of the International Union Against Tuberculosis **60**(3-4): 133-134.

Rubel, A. and L. Garro (1992). “Social and cultural factors in the successful control of tuberculosis.” Public Health Report **107**(6): 626-635.

Rueda, M. (1997). El discurso de López. Semana: http://www.semana.com.co/users/semana/julio14/rueda.htm.

Ruhl, J. (1997). “Book review: The politics of clientelism: Democracy and the State in Colombia.” American Political Science Review **91**(4): 989-990.

Salmon, C. (1989). Campaigns for social "improvement": an overview of values, rationales, and impacts. Information campaigns: balancing social values and social change. C. Salmon. Newbury Park, CA, USA, Sage: 19-53.

Samoff, J. (1996). "Which priorities and strategies for education?" International Journal of Educational Development **16**(3): 249-271.

Sanz de Santamaria, A. (1995). "From violence and impoverishment to peace and economic reconstruction: description of the achievements of The Carare Peasant Workers Association (ATTC)." Systems Research **12**(1): 66-71.

Saunderson, P. (1995). "An economic evaluation of alternative programme designs for tuberculosis control in rural Uganda." Social Science and Medicine **40**(9): 1203-1212.

Sayers, B. and T. Fliedner (1997). "The critique of DALYs: a counter-reply." Bulletin of the World Health Organisation **75**(4): 383-384.

Schön, D. (1991). The reflective practitioner: how professionals think in action. Aldershot Hants, England, Avebury.

Schulz, A., B. Israel, et al. (1995). "Empowerment as a multi-level construct: perceived control at the individual, organizational and community levels." Health Education Research: Theory and Practice **10**(3): 309-327.

Schwandt, T. (1989). "Recapturing moral discourse in evaluation." Educational Researcher **18**(8): 11-16.

Scriven, M. (1972). The methodology of evaluation. Evaluating action programs: readings in social action and education. C. Weiss. Boston, Allyin and Bacon: 123-136.

Scriven, M. (1986). "New frontiers of evaluation." Evaluation Practice **7**: 7-44.

Sechrest, L. and A. Figueredo (1993). "Program Evaluation." Annual Review of Psychology **44**: 645-74.

Sechrest, L. and S. Sidani (1995). "Quantitative and qualitative methods." Evaluation and Program Planning **18**(1): 77-87.

Secretariat of Public Health of Cali (1993). "Evaluation of the Tuberculosis control program 1993". Division of Health Promotion. Secretariat of Public Health of Cali

Seedhouse, D. (1997). Health promotion: philosophy, prejudice and practice. London, John Wiley & Sons.

Seeman, T. (1996). "Social ties and health." Annals of Epidemiology **6**(5): 442-451.

Sen, A. (1985a). "Well-being, agency and freedom: The Dewey Lectures 1984." The Journal of Philosophy **132**(4): 169-224.

Sen, A. (1985b). Commodities and Capabilities. Amsterdam, North Holland.

Sen, A. (1993). "The economics of life and death." Scientific American **268**(5): 18-25.

Sen, A. (1997). "Editorial: Human capital and human capability." World development **25**(12): 1959-1961.

Shadish, W., T. Cook, et al. (1991). Foundations of program evaluation: theories of practice. Newbury Park, CA, Sage.

Shapiro, J. and Y. Talbot (1991). "Applying the concept of the reflective to understanding and teaching family medicine." Family Medicine **23**(6): 450-6.

Shepard, D., J. Walsh, et al. (1993). "Cost-effectiveness of ambulatory surgery in Cali, Colombia." Health Policy and Planning **8**(2): 136-142.

Shiell, A., P. Hawe, et al. (1997). "Values and preferences are not necessarily the same." Health Economics **6**: 515-518.

Shy, C. (1997). "The failure of academic epidemiology: witness for the prosecution." American Journal of Epidemiology **145**(6): 479-484.

Sidell, M. and L. Jones, Eds. (1997). The challenge of promoting health: exploration and action. Houndmills, UK, Macmillan Press Ltd.

Sigerist, H. (1941). Medicine and Human Welfare. New Haven, Yale University Press.

Skrabanek, P. (1990). "Why is preventive medicine exempted from ethical constraints?" Journal of Medical Ethics **16**: 187-190.

Slater, M. (1996). "Theory and method in health audience segmentation." Journal of Health Communication **1**(3): 267-284.

Smolensky, E., R. Plotnick, et al. (1994). "Growth, inequality, and poverty: a cautionary note." Review of Income and Wealth **40**(2): 217-222.

Sommer, A. (1995). "W(h)ither public health?" Public Health Reports **110**(November-December 1995): 657-661.

SPSS (1993). Statistical Package for Social Sciences. 6.0 Release. Chicago, USA.

Steckler, A., K. McLeroy, et al. (1992). "Toward integrating qualitative and quantitative methods: an introduction." Health Education Quarterly **19**(1): 1-8.

Stockhausen, L. (1994). "The clinical learning spiral: a model to develop reflective practitioners." Nurse Education Today **14**(5): 363-71.

Stone, L. and G. Campbell (1984). "The use and misuse of surveys in international development: an experiment from Nepal." Human Organisation **43**(1): 27-37.

Streiner, D. and G. Norman (1995). Health Measurement Scales: a practical guide to their development and use. Oxford, Oxford University Press.

Styblo, K. (1989). "Overview and epidemiologic assessment of the current global tuberculosis situation with a emphasis in control in developing countries." Review of Infectious Diseases **11**(Supp 2 March-April): S 341.

Sudre, P., G. ten Dam, et al. (1992). "Tuberculosis: a global overview of the situation today." Bulletin of the World Health Organisation **70**(2): 149-159.

Sumartojo, E. (1993). "When tuberculosis treatment fails: a social behavioural account of patient adherence." American Review of Respiratopry Diseases **147**: 1311-1320.

Susser, M. and E. Susser (1996). "Choosing a future for epidemiology: II.From black box to chinese boxes and eco-epidemiology." American Journal of Public Health **86**(5): 674-677.

Sutherland, I. (1987). Health education, half a policy: the rise and fall of the health education council. Cambridge, England, National Extension College.

Sweat, M. and J. Denison (1995). "Reducing HIV incidence in developing countries with structural and environmental interventions." AIDS **9**(suppl A): S251-S257.

Sweetland, S. (1996). "Human Capital Theory: foundations of a field of inquiry." Review of Educational Research **66**(3): 341-359.

Swift, C. and C. Levin (1987). "Empowerment: an emerging mental health technology." The Journal of Primary Prevention **8**: 71-94.

Szreter, S. (1994). "Mortality in England in the Eighteenth and Nineteenth centuries: a reply to Sumit Guha." Social History of Medicine **7**: 269-282.

Szreter, S. (1997). "Economic growth, disruption, deprivation, disease, and death: on the importance of the politics of public health for development." Population and Development Review **23**(4): 693-728.

Teklu, B. (1984). "Reason for failure of treatment of pulmonary tuberculosis in Ethiopians." Tubercle **65**: 17.

Terris, M. (1992). Present tendencies in the public health in the Americas. The Crisis of Public Health: Reflections for the Debate. Washington, DC, Pan American Health Organization: 172-3.

The Guardian. (1998). The Guardian. London. April 15th. pp.1,7.

Thompson, J. (1992). "Programme evaluation within a health promotion framework." Canadian Journal of Public Health **83**(Supplement): S67-S71.

Tichenor, K., G. Donahue, et al. (1970). "Mass media flow and differential growth of knowledge." Public Opinion Quarterly **34**: 159-170.

Tomes, N. (1989). "The White Plague revisited." Bulletin of the History of Medicine **63**: 467-480.

Tones, K. (1996). "Editorial: The health promoting schools: some reflections on evaluation." Health Education Research: Theory and Practice **11**(4): i-viii.

Tones, K. (1997). "Beyond the randomized controlled trial: a case for 'judicial review'." Health Education Research **12**(2): i-iii.

Tones, K. and S. Tilford (1994). Health education: effectiveness, efficiency and equity. London, Chapman and Hall.

Ugalde, A. (1978). "Health decision making in developing nations: a comparative analysis." Social Science and Medicine **12**: 1-7.

UNDP (1997). Human Development Report 1997. New York, Oxford University Press.

Uplekar, M. and S. Rangan (1993). "Private doctors and tuberculosis control in India." Tubercle and Lung Disease **74**: 332-337.

Van der Werf, T., G. Dade, et al. (1990). "Patient compliance with tuberculosis treatment in

Ghana: factors influencing adherence to therapy in a rural service programme." Tubercle **71**: 247-252.

Velasquez, F. (1996). Ciudad y Participacion. Cali, Editorial Universidad del Valle.

Veltmeyer, H. (1997). "Latin America in the New World Order." Canadian Journal of Sociology/Cahiers Canadiens de Sociologie **22**(2): 207-242.

Volinn, I. (1983). "Health professionals as stigmatizers and destigmatizers of disease: alcoholism and leprosy as examples." Social Science and Medicine **17**(7): 385-393.

von Haldenwang, C. (1997). "Successes and failures of decentralizing adjustment strategies in Latin America: the cases of Argentina and Colombia." Law and State **56**: 54-81.

Waitzkin, H. (1998). "Is our work dangerous? Should it be?" Journal of Health and Social Behaviour **39**: 7-17.

Walker, R. (1993). Evaluating drug education programmes. Health research in practice. D. Colquhoun and A. Kellehear. London, Chapman and Hall: 138-151.

Wallace, R. (1990). "Urban desertification, public health and public order: 'planned shrinkage', violent death, substance abuse and AIDS in the Bronx." Social Science and Medicine **31**(7): 801-813.

Wallace, R. and D. Wallace (1990). "Origins of public health collapse in New York city: the dynamics of planned shrinkage, contagious urban decay and social desintegration." Bulletin of the New York Academy of Medicine **66**(5): 391-434.

Wallace, R. and D. Wallace (1997). "Community marginalisation and the difussion of disease and disorder in the United States." British Medical Journal **314**: 1341-45.

Wallerstein, N. and E. Bernstein (1994). "Introduction to community empowerment, participatory education, and health." Health Education Quarterly **21**(2): 141-148.

Walsh, J. and K. Warren (1979). "Selective primary health care: an interim strategy for disease control in developing countries." New England Journal of Medicine **301**: 18.

Walt, G. (1994). Health policy: an introduction to process and power. London, Zed Books.

Warwick, D. (1993). The KAP survey: dictates of mission versus demands of science. Social research in developing countries: survey and censuses in the Third World. M. Bulmer and D. Warwick. London, UCL Press Ltd.: 349-364.

Weed, D. (1995). "Epidemiology, the humanities, and public health." American Journal of Public Health **85**(7): 914-918.

Weise, H. (1976). "Tuberculosis in rural Haiti." Social Science and Medicine **8**: 359-362.

Weiss, C. (1983). The stakeholder approach to evaluation: origins and promise. Stakeholder based evaluation. A. Bryk. San Francisco, CA, USA, Jossey-Bass Publishers: 3-14.

Werner, D., D. Sanders, et al. (1997). The politics of primary health care and child survival. Palo Alto, CA, USA, HealthWRights.

Westaway, M. (1989). "Knowledge, beliefs and feelings about tuberculosis." Health Education

Research Theory and Practice **4**(2): 205-211.

Westaway, M. and l. Wolmarans (1990). "Knowledge and attitudes about tuberculosis of black hospitalized TB patients (abstract)." American Review of Respiratory Diseases **141**: A-204.

Westaway, M. and L. Wolmarans (1994). "Cognitive and affective reactions of black urban South Africans towards tuberculosis." Tubercle and Lung Disease **75**: 447-453.

White, G. (1995). "Towards a democratic developmental state." IDS Bulletin **26**(2): 27-36.

White, G., B. Hogan-Henthorne, et al. (1995). "Tuberculosis: a health education imperative returns." Journal of Community Health **20**(1): 29-57.

WHO (1946). Constitution of the World Health Organisation. New York, World Health Organisation.

WHO (1978). Alma Ata 1978: Primary Health Care. Geneva, WHO.

WHO (1986). "Ottawa Charter for Health Promotion." Health Promotion **1**(4): iii-v.

WHO (1998a). DOTS: Direct observed therapy short-course. http://www.who.ch/gtb/dots/index.htm

WHO (1998b). Plan of Action Implementing Global Strategy Health for All. http://who-hq-policy.who.ch/cgi-bin/folioisa.dll/PLAN_HFA/doc

Wilkinson, R. (1996a). How can secular improvements in life expectancy be explained? Health and Social Organization. D. Blane, E. Brunner and R. Wilkinson. London, Routledge: 109-124.

Wilkinson, R. (1996b). Unhealthy societies: the afflictions of inequality. London, Routledge.

Williams, A. (1995). "Economics, QALYs and medical ethics-A health economist's perspective." Health Care Analysis **3**: 221-226.

Williams, R. and D. Zimmerman (1996). "Are simple gain scores obsolete?" Applied Psychological Measurement **20**(1): 59-69.

Williams, S. (1987). Goffman, interactionism, and the management of stigma in everyday life. Sociological theory and medical sociology. G. Scambler. London, Tavistock Publications: 134-164.

Wilson, L. (1990). "The historical decline of tuberculosis in Europe and America: its causes and significance." The Journal of the History of Medicine and Allied Sciences **45**: 366-396.

Witte, K. (1994). "The manipulative nature of health communication research: ethical issues and guidelines." American Behavioral Scientist **38**(2): 285-293.

Wolski, K., F. Martinez, et al. (1995). Risk factors associated with delayed diagnosis of tuberculosis in Cali, Colombia. The Lancet Conference 1995: The Challenge of Tuberculosis, Washington, D.C., The Lancet Ltd. London.

World Bank (1993). Investing in health: World Development Report. New York, Oxford University Press.

World Bank (1996). From plan to market: World Development Report. New York, Oxford

University Press.

World Bank (1997). The state in a changing world: World Development Report. New York, Oxford University Press.

World Bank Human Development Department (1997). HDDFlash Issue No. 14, March 3, 1997; Electronic Newsletter and archiving Service on human development issues; http://hco/html/hcovp/phnflash/contents.html.

Yepes, F. (1990). La salud en Colombia: hallazgos y recomendaciones. Bogota, Departamento Nacional de Planeacion Ministerio de Salud.

Zeller, R. (1993). Combining qualitative and quantitative techniques to develop cultural sensitive measures. Methodological Issues in AIDS Behavioural Research. D. Ostrow and R. Kessler. New York, Plenum Press: 95-115.

Zimbardo, P. and M. Leippe (1991). The psychology of attitude change and social influence. New York, McGrawHill.

BIBL. LONDIN.