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An Anthropological Study of TB and Biomedical Strategies for TB Control

**Keywords**
tuberculosis, epidemiology, TB control programs, Western biomedicine, Canada, First Nations

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The recent re-emergence of tuberculosis cases in various parts of the developed world has been viewed by many as the resurrection of a demon of the past - the rebirth of a disease believed to have been vanquished by the all-powerful curatives of modern medicine. The discovery of efficacious TB drugs in the early 1940s and 1950s led to the widespread closure of TB sanatoria in developed countries, spurring the belief (in both lay individuals and medical professionals alike) that tuberculosis could be eliminated once and for all, like other devastating diseases such as polio and smallpox. However, the optimism of the 1950s has been seriously challenged by a global upsurge in TB case findings which has steadily increased since the 1980s. The increasing number of TB cases worldwide has led both those in the academic and medical community to ask the question: “Why does tuberculosis continue to threaten the lives of millions of people around the world, when a cure for the bacteria which causes the disease has been found?”

Tuberculosis continues to be the leading cause of death of adult men and women - a fact that has spurred the World Health Organization (WHO) to rightfully declare the rampant transmission of TB as a global health emergency.
In an effort to reduce TB morbidity and mortality, the WHO has recommended a standardized strategy for TB control to eradicate the spread of the disease on a global scale. Known as the DOTS strategy for TB control, the WHO strategy consists of five key elements. Of these components, it is the practice of Direct Observation Therapy (DOT), a form of treatment based on the supervised patient ingestion of TB drugs which has received the most publicized attention and merit as a means of eradicating tuberculosis on a global scale (WHO 1997).

The emphasis on directly observed therapy as the most efficacious component of TB control programs has presented a number of problems in the field of TB research. The application of a strictly biomedical approach to the prevention and treatment of disease is a function of the ideology and principles of the capitalist system, which places great emphasis on the superiority of Western medical knowledge and biotechnology as the panaceas to human misery. Current TB elimination initiatives, including the exaltation of short-term chemotherapy as the “be all and end all” of TB control may be problematized at both a theoretical and a methodological level. From a theoretical standpoint, medical anthropologists view the pronounced emphasis on pharmacological solutions to disease as a lucid example of biomedical as a hegemonic force in the world system—where the dominant paradigm for the conceptualization, diagnosis and treatment of disease accords authority to medical practitioners and biomedical interventions, to the exclusion of pluralistic medical systems. The priority and pre-eminence of biological phenomena and explanations in the Western medical paradigm is also viewed as a subversive means of de-politicizing health and illness. By focusing exclusively on quantitative biological measures of “health” (i.e., the pathogenesis, etiology, and epidemiology of disease), and by directing focus on the bacterium itself, biomedical discourse and the space within which it is articulated precludes serious discussion and debate on the underlying political and socio-economic forces that affect one’s health and well-being. Meanwhile, the application of a generic TB strategy as a universal guideline for TB control hinders the creation and implementation of population specific, culturally-appropriate, socially and politically-contextualized health policies and initiatives on an international, national, and regional level.

At the methodological level, mounting studies on DOTS as a sole course of action in the treatment of TB have called the efficacy of DOTS-centered strategies into question. Emphasis on one strategy goes against the multiple components recommended by the WHO strategy. The publicized success of DOT as an exclusive course of action provides a false view of its efficacy, as the implementation of many DOT initiatives have necessarily included parallel strategies that have been identified as working in concert in successful TB control programs.

In light of these emerging critiques, this study strives to approach the study of tuberculosis from an anthropological perspective. The goal of this paper is threefold: 1) to acquaint the reader with current global initiatives designed to control the dissemination of TB; 2) to offer a synthesis of critiques from both biomedical researchers and social scientists on the underlying weaknesses and failures of current TB elimination strategies; and 3) to situate and interpret the shortcomings of the various elements that constitute TB control strategies within the dominant Western biomedical paradigm. A preliminary framework for analysis based on the principles of “critical medical anthropology” shall be used as an example of how alternative theoretical approaches can shed light on the number of converging variables that contribute to the differential distribution of the disease within populations. Finally, the current strategy for the eradication of tuberculosis in Canadian Aboriginal populations shall be elicited as a case example to illustrate how the dismissal of structural violence and historical contingency represent major shortcomings of controlling TB in First Nations populations.

On a global level, TB occupies the ranks of other diseases such as dysentery and malaria, commonly categorized as “neglected diseases”—a term loosely used to describe pathological conditions which despite their continued virulence, transmission, and devastating effects on the morbidity and mortality of large populations on a large scale, continue to be underrepresented as a major health concern in public health policies, campaigns and the mainstream media. The absence of sufficient discourse and successful intervention strategies with respect to these diseases has been attributed to the prevalence of diseases such as TB among impoverished and disenfranchised urban and rural populations. However, contrary to representations...
of TB as a health problem of underdeveloped countries, there is growing evidence of the “re-emergence” of tuberculosis in highly industrialized societies. Global interdependency, rapid transportation, expanding trade, economic disparities and changing social and cultural patterns have all been identified as factors which have influenced the epidemiology of TB, making tuberculosis epidemics in any country a serious global health concern (Squire and Wilkinson 1998:469). The synergy of tuberculosis and HIV co-infection has introduced a new wave of the disease, affecting populations as diverse as African rural communities, prison populations and the urban homeless of industrialized nations.

**Direct Observation Therapy (DOT)**

The control of tuberculosis is a leading public health priority worldwide. WHO declared tuberculosis a global health emergency in 1993 and launched the Directly Observed Therapy Supervision Program (DOTS) for TB control (WHO 1988). There are five basic elements of the WHO TB control strategy: 1) government commitment to TB control; 2) passive case finding and diagnosis with smear microscopy; 3) standard, short-course chemotherapy with direct observation of the treatment (DOT); 4) continuous and reliable supply of quality drugs; and 5) an efficient recording and reporting system (WHO 1988).

Directly observed therapy (DOT) plays an important role in the WHO TB eradication strategy, and has been heralded as a new breakthrough in tuberculosis control. However, as astutely observed by Squire and Wilkinson (1998) DOT is a method “as old as TB chemotherapy itself”, emerging at a time when TB therapy evolved from treatment based upon long-term institutionalization, to one based upon more flexible, patient-centered care (Squire and Wilkinson 1998:469). With the implementation of ambulatory therapy, there also arose the problem of patient adherence to treatment; an issue which continues to challenge TB elimination strategies to the present day. The very issue of patient non-compliance and the consequences which can result from incomplete treatment regimens (mainly the dissemination of the disease from infected patients and the drug resistance that results from the premature cessation of TB chemotherapy), in addition to the difficulties associated with controlling tuberculosis among HIV-infected persons, and the rapid increase in the number of cases, especially in metropolitan areas led to the creation of directly observed therapy as a form of medical intervention. Yet, the question remains: is DOT a truly efficacious means of eradicating TB? Evaluation of DOTS strategies in the last few years from those within the medical community as well as scholars of social medicine seems to point to the contrary.

**Critiques of Current TB Eradication Initiatives**

Since its implementation in the early 1990s, there has been a great deal of debate over the efficacy of TB control strategies. One major criticism of the DOTS strategy is that it is based upon the “control of the patient”. The emphasis on patient adherence and compliance, in addition to other authoritarian and often punitive measures (such as enforced detention of non-compliers) are beginning to shed light on the ethical and socio-political issues entwined in the DOTS debate. Gostin’s review of TB statutes in 50 states during a time of national concern over rising TB case findings in the US draws attention to some of the ethical issues related to TB control. Improving respect for TB patients and implementing individualized plans of treatment that are reinforced by adequate support structures are two courses of action that can lead to the creation of more humane and successful TB control strategies (Gostin 1993). Gostin’s sentiments are echoed in recommendations made by health care professionals, who agree that a healthy infrastructure, and not increased control of patient behaviour is necessary for successful TB control initiatives.

It has also come to the attention of several medical researchers that despite DOTS reputation as a successful means of treating TB and impeding the disease’s dissemination, it should not be seen as a sole method of treating the disease, as it represents (more often than not) one component of successful TB programs. As observed by Bloch et al. (1994) in their analysis of the TB trend between 1993 and 1995, TB successes were most likely to be the result of multiple components acting in concert to support and enable patients to complete therapy.

**Co-Interventions in DOTS programs**

New insights into the heterogeneous, multi-factoral and multifaceted aspects of DOT-centered programs have become available in the last few years from within the very medical community which exalted it. One such critique comes from Volmink et al. (2000) who
appropriately highlight the importance of program components such as incentives, outreach efforts, and attention to individual patients’ issues. In their review of published reports on directly observed therapy programs, the authors observed that the programs consisted in fact of more than the recommended five elements of the WHO strategy. Additional “co-interventions” included: incentives, tracing defaulters, legal sanctions, patient-centered approaches, staff motivation, supervision, and additional external funding. In one study of the effectiveness of a community-based DOTS program in a Bangladesh village (Barnhorn & Adriaanse 1992:297), interventions offered to patients in addition to direct observation included contracts, free drug education, monetary incentives, and other services from health workers (e.g. immunizations, improvements in water and sanitation, family planning). Monetary incentives, supervision, and profits from the sale of TB drugs were among the incentives offered to staff in charge of supervising the DOTS program, while external funding, improved records, community education about tuberculosis and strengthening of diagnostic services monitoring were but a few of the additional factors influencing the success of the particular DOTS program in that region. In highlighting these important co-interventions in DOT programs, the authors wish to underscore the fact that directly observed therapy cannot be viewed as a successful course of TB intervention in and of itself. This being said, Volmink et al. bring attention to the fact that the World Health Organization ought to be more explicit in describing and differentiating the efficacy of the DOTS strategy (which consists of the WHO’s five major recommendations for TB control) and the DOT strategy of supervised patient drug ingestion (Volmink et al. 2000).

Studies such as those of Volmink represent an increasing reflexivity toward research by those in the biomedical field. Although promising, medical researchers and practitioners still have a long way to go in the area of critically assessing the efficacy of biomedical interventions in disease control. The most important step toward a more reflexive process of scientific research needs to begin with a reassessment of the very tools utilized for the collection of data. The universal applicability and accuracy of randomized control trials (RCT) for example, is a topic that continues to be debated in the scientific sphere.

Yet, despite recent acknowledgment of the limitations of the RCT for measuring the success of medical interventions, this methodological tool continues to be utilized as the main method of gathering statistically significant quantitative data. Secondly, medical practitioners still need to come to terms with the fact that there is no ‘golden standard’ by which to measure patient adherence to anti-tuberculosis drugs.

An accurate view of the success of DOTS programs and other initiatives can only be attained by considering the host of context-specific factors that shape and influence both the strategy that is implemented and the course of action taken by the actors involved. To achieve this alternative “standpoint”, it is necessary to move beyond the theory and praxis of the biomedical paradigm. This of course is not an evocation for the dismissal or abandonment of the knowledge accrued through the teachings and methods of Western medicine. It is rather a commentary on the need to shift the emphasis from the bacterium and its prescribed chemical curative, to analyses which focus on the socioeconomic factors and social behavioural and cultural elements; important variables which inevitably influence one’s decision-making and course of action with regards to health-seeking behaviour and adherence to treatment. The first step in this type of critique involves identifying the hegemonic aspects of biomedicine, and how they relate to the area of TB prevention and treatment.

The Hegemony of Biomedicine

A useful definition of biomedicine is given by Hahn (1983) who describes the biomedical field as one which distinguishes itself from other healing systems “by virtue of its exclusive focus on human physiology, and more specifically, human pathophysiology when diagnosing and treating illness (Singer & Baer 1995:14). By adopting a biological reductionist position in the area of health care diagnosis and delivery, and promoting the dichotomy of mind and body in classic Cartesian fashion, biomedicine may be viewed as a system that is more concerned with diseased bodies than with the health and well-being of individuals (Singer & Baer 1995:16). A defining feature of the Western medical model is the process of medicalization, a term used to describe the “absorption of a wide social arena of behaviour under the jurisdiction of the medical role” (Singer & Baer 1995:16). This process is evidenced by the endless list of pathological terminology used to designate and
categorize a wide array of “new” conditions and behaviours (Singer & Baer 1995:16). The motives for the perpetuation of the medicalization process may be viewed as emerging from the economic advantages that come from the diagnosis of new diseases and prescriptions of new drugs and the increase social control that this process accords to health care professionals over social behaviour (Singer & Baer 1995:18). The increasing medicalization of life events exemplifies biomedicine’s attempt to “transform a problem which occurs at the level of social structure into an administrative problem which comes under the jurisdiction of medical control” (Singer & Baer 1995:18).

To understand the underlying factors which contribute to the pre-eminence and far-reaching tentacles of biomedicine, it is necessary to identify the political underpinnings that have shaped the theory and praxis of Western (allopathic) medicine. The history of allopathic medicine and its dominance in the world system is intimately connected to the emergence of industrial capitalism and the ruling capitalist class which it was created to serve.

Philanthropic organizations, like the Carnegie and Rockefeller foundations represent institutions that played a major role in shaping the priorities and practice of modern medicine by allocating resources to research projects that conformed to an accepted Western scientific paradigm (i.e. the germ theory of disease), promoted biotechnological solutions to health problems, and which conferred either political and/or economic advantages to the funding agencies involved (Singer & Baer 1995:20). As noted by Brown (1979) the medical profession discovered an ideology which was “compatible with the world view that was politically and economically useful to the capitalist class, and the emerging managerial and professional stratum” (Singer & Baer 1995:20). Marxist critiques of the biomedical system point to the underlying economic agenda of its proponents, which is based on improving the working class’s economic productivity. Biomedical theories of disease phenomena correspond to the principle and objectives of the capitalist social system by promoting a reductionist and mechanistic view of individuals. Referred to as medical hegemony, this defining characteristic of the Western biomedical model reflects the ideological machine which facilitates and supports the process of medicalization and promotes the reproduction of social hierarchies that maintain disparate distributions of power and resources in the political, economic and social spheres (Singer & Baer 1995:20).

The term “medical hegemony” is based on Antonio Gramsci’s articulation of the power of the ruling class’s ideology over the existing social system. The concept is an extension of Marx and Engel’s observation that “the ideas of the ruling class are in every age the ruling ideas”, and is used in referring directly to the process by which capitalist assumptions, attitudes and values come to permeate medical diagnosis and treatment (Singer & Baer 1995:20). Upon closer examination, one can discern a number of capitalist beliefs, values and principles embedded in the biomedical paradigm. These include: a strong emphasis on self-reliance, individualism, pragmatism, emotional detachment, maintaining the mind/body dichotomy, the upholding of stratified social classes and permeation of economic opportunism (Singer & Baer 1995:20).

Having outlined the basic features of Western biomedicine, one can proceed to identify the features of medical hegemony in TB eradication initiatives. Critical medical anthropology represents one theoretical framework which may be used to identify the hegemonic aspects of allopathic medical strategies. Singer & Baer (1995:12) have operationalized the critical medical anthropology theoretical perspective as one which “understands health issues within the context of encompassing political and economic forces that pattern human relationships, shape social behaviour, conditional collective experiences, re-order local ecologies, and situate cultural meanings, including forces of institutional, national and global scale. The emergence of critical medical anthropology reflects both the turn toward politico-economic approaches in anthropology in general, as well as an effort to engage and extend the political economy of health approach.”

This theoretical orientation may be seen as emerging in response to the increasing fragmentation in the sub-discipline of medical anthropology in general. Ongoing debates in the
sub-field over theoretical, ideological and methodological issues are diverse, but for the sake of simplicity, may be taxonomized into roughly three schools of thought. On one side of the debate, are those who call for a more thorough integration with biomedicine, which prevails as the golden standard in the discourse on health and illness. Diametrically opposed to this view are those who admonish the increasing medicalization of medical anthropology and the expansion of biomedical authority and jurisdiction over other aspects of social life and the continuing incorporation of Western medical assumptions in anthropological inquiry (Singer & Baer 1995:12). Seen as a more radical approach, this “interpretive” calls for the creation of a new phenomenology which allows for the study of sufferers experience “independent of the biomedical categorizations of illness” (Singer & Baer 1995:13).

Critical medical anthropology takes biomedicine as its starting point in its attempt to “understand the power relations, dynamic processes and systemic structures that shape and control the dominant medical system and to assess the implication of such control” (Singer & Baer 1995:12-13).

**Medical Hegemony in TB Control and its Implications**

**DOT: One recommendation out of many?**

The assortment of challenges posed by the implementation of DOTS on a global level may be seen as stemming from both methodological and theoretical concerns/problems. Over-emphasis on directly observed therapy has eclipsed the breadth of components initially recommended by the WHO. These include government commitment to TB control in the form of financial and institutional support, passive case finding and diagnosis which requires an infrastructure that can support laboratory-based diagnosis by trained personnel, a continuous and reliable supply of TB drugs in order to ensure an uninterrupted supply of TB medication, and a standardized reporting and recording system (which includes a registry of smear and culture positives which can be used to chart the demographics and resistance patterns of new cases) (WHO 1997).

Together, the aforementioned components along with directly observed therapy represent a strategy for TB detection, treatment and control that is based on substantial financial and political commitment to program development. National support for the implementation of “successful” TB control programs necessitates the allocation of substantial resources for technical support, the training of health care workers and support staff, and the building of infrastructure to accommodate the administration of treatment at the regional and national level. The WHO five-pronged strategy represents the ideal exemplar of health promotion initiatives. In reality however, these types of recommendations are rarely followed to the letter. This is especially the case in developing countries where the technical and human resources needed to implement a systematic national TB strategy are in short supply. More often than not, the poorest countries experiencing the highest rates of TB morbidity and mortality are those which have the least access to consistent supplies of high-quality TB drugs. Meanwhile, the goal of detecting passive cases of TB also necessitates a great deal of financial resources and technical support. Being able to compile a systematic record of TB patients is also predicated on a sedentary model of human residential patterns. Such being the case, this type of database excludes those who live on the margins of society, for example, nomadic people and the urban homeless, both of which cannot be traceable to a permanent address. It is also worth mentioning that the efficacy of the WHO TB control model is based primarily on studies of this system in politically stable, Western societies.

To date, it has no not been tested in societies where “social structures are fragile and fragmented as a result of political instability and/or economic collapse” (Squire & Wilkinson 1998:481). In these specific contexts, TB control is made all the more challenging because of the destruction or inefficiency of existing health infrastructure and the increased level of infection due to malnutrition and sub-standard living conditions. Thus, it is important when evaluating TB control programs, to consider the fact that the DOTS strategy represents more than a model for the supervised ingestion of drugs. Acknowledging this fact leads us to think about the financial and technical demands of properly implementing the five components of the WHO system and evaluating if this paradigm is really applicable and accessible to all nations, particularly those in greatest need and at greatest risk.
Pandora’s Apothecary: of “smoking guns” and “magic bullets”

In the war against infectious diseases biomedicine, armed with its arsenal of chemical curatives has left an enduring legacy on the state and quality of human health particularly in the last century. Super bugs, intelligent, virulent and rapidly mutating and evolving strains of pathogens have spurred the need for super drugs or “magic bullets” as they are euphemistically referred to by their critics. In turn, this pharmacologically-centered approach to health and healing has made way for an ever-growing apothecary of synthesized panaceas to form the ultimate biochemical offensive in the ongoing battle between human against disease. From an anthropological perspective, the conflict of “man versus the elements” may conceptually be viewed as one of many “acts” in the ever-evolving narrative of culture (represented by controlled biotechnological innovation) versus the baneful ills of uncontrollable nature (epitomized by the disease pathogen). Enveloped in and inherently a part of this predominantly Western medical paradigm exists the biochemical Pandora’s box wherein each prescribed capsule and concoction is encapsulated with the ideology of 20th century medicine— that is, the authority and capacity of positivist, scientifically-based and empirically-derived means of alleviating (if not curing) any and all visible and quantifiable symptoms of dis-ease. And yet, like the fabled Pandora’s box itself, which was at once both a gift (for containing the world’s ills) and a curse (on account of its inability to indefinitely do so), the methodological interventions prescribed and proscribed within a biomedical framework of health care and health promotion have a history of invoking as much trauma as they have healing. This is evidenced by the high number of iatrogenic and nosocomial deaths, and our dependence on biochemical “quick fixes” as temporary antidotes to an ever-growing list of “pathologized” life events and conditions. Emphasis on biochemical solutions for social diseases reflects the capitalist-informed agenda of de-politicizing health. Identifying disease phenomena as conditions that result from disturbances occurring exclusively at the biological level precludes any discussion of the social, economic and political factors that directly affect health status.

A new wave of sensationalism directed at increasing our chemico-dependency has surfaced in the area of TB control. Termed the “new social disease” by Paul Farmer, the publicized emergence of “new” multi-resistant strains of tuberculosis have re-framed the conceptualization of TB and reintroduced a biochemical emphasis in the fight against TB in the last decade. The discourse surrounding the emergence of highly resistant strains of the tuberculosis bacterium across the globe present this problem as one rooted in biology, specifically, the evolution of a more virulent form of bacterium which has become resistant to our current assortment of TB drugs. In turn, this type of discourse is utilized by biomedical practitioners and pharmaceutical companies who see the creation of a new super-drug or “magic bullet” as the only logical solution to control the increase in TB infection around the world. What is ironic about this type of argument is the fact that in many cases, increases in TB can be traced back to the drugs themselves. The emergence of resistant TB strains is often caused by immunity resulting from the inconsistent administration of TB drugs, and thus cannot be assumed to be exclusively reflective of the “natural” evolution of a more virulent strain of the disease.

Poor access to sufficient supplies of TB drugs in developing countries is not a new problem. From tuberculosis and malaria, to the treatment of AIDS, the issue of inadequate drug supplies has always problematized both preventative and curative international health initiatives. Proven treatment programs like DOTS require large quantities of high-quality drugs, with especially expensive therapies for drug resistant strains. Multinational drug companies are among the most lucrative of business enterprises, and they have shown no interest in making their products available to the hundreds of millions of people infected with the TB bacillus who are too poor to pay for the drug treatment. Intellectual property protection, in the form of patents on essential drugs, and the continued debates on differential pricing, financing, supply, selection and distribution in addition to the political and economic implications of parallel import of generic drugs represents a network of drug-related issues that continue to problematize the implementation of a TB program that can ensure access to essential drugs to the poor in developing countries.

Critics of the current problem of drug accessibility often point to poorly structured, ineffectively organized and insufficiently funded national health systems as the source of inequality in health care. However, the emphasis on
institutional and organizational failure may be seen as yet another means of dismissing the root of the problem, which is rooted in the political and economic disparities existing in many countries and the political and economic structures that reproduce and sustain these differences. Thus, it would seem that the goal of curbing the development of multi-drug resistant TB strains and controlling the rapid increase in TB cases lies not in the formulation of a new "magic bullet", or even in the authorization of generic "clone" drugs in the global market, but in the identification and dissolution of deeply-rooted political and economic inequalities existing in highly stratified societies that contribute to the poor health status of the poor and disenfranchised.

Health = economic productivity model

Like other biomedical initiatives to improve health, the capitalist ethos colours both the research design and methodology of studies into the efficacy of TB eradication programs. The underlying paradigm for assessing such initiatives is similar to the "disease hinders development model" made popular during the 1950's when internationally-funded malaria eradication strategies were at their peak. "Progress", "productivity" and other development-oriented terminology still proliferate the literature on TB control strategies. The conflation of health and productivity is most often seen in biomedical studies assessing the efficacy of DOTS infrastructure and initiatives. In short, the efficacy of the program is measured in terms of the productivity of the population indexed by number of days of work lost and number of trips to the physician. The criticism of this type of measurement is that quality of life cannot be extrapolated solely from quantitative, monetary-based measurements alone such as the GNP and per capita income used by economists. This would entail consideration of other important indices of health and standard of living, such as family life and cohesion, sense of well-being, patient satisfaction, frequency of illness relapse, community health indicators, to name just a few.

The irresponsible and the ignorant: the politics of adherence behaviour

The increasing number of critiques of TB programs by social scientists has turned emphasis to the behavioural aspects of individual health-seeking strategies. Although this may be viewed as another integral step of understanding disease beyond the biomedical paradigm, it presents its own set of challenges. The study of patient adherence to treatment is premised on the belief that there are certain "patterns of behaviour" adopted by treatment "non-compliers". In reality, however there is no proven set of defining traits of patients who do not complete their TB treatment. Several authors (Farmer 2001; Sumartojo 1990) have taken issue with the study of patient adherence behaviour. On the most fundamental level, the terms "compliance" and "adherence" are value-loaded in an interesting way. On the one hand, the word "compliance" has "the unfortunate connotation that the patient is docile and subservient to the provider" (Farmer 2001:226). However, on the other hand, the notions of compliance and adherence over-exaggerate the patient's agency, suggesting that all patients possess the ability to comply- or refuse to comply with anti-tuberculosis strategies. Exaggerated agency is illustrated by patients who are counseled to eat good food, drink clean water, and sleep in uncrowded living condition. Meanwhile, it is the lack of these very factors (deriving from wont and poverty) that make one ill in the first place (Farmer 2001). Patient non-compliance is often used by medical practitioners and governmental agencies to explain program failure, which in turn, allows for the dismissal and denial of the structural barriers that lead to the failure of treatment (Farmer 2001:227).

Those who identify patient ignorance as the source of patient non-adherence advocate TB education for TB patients. Disease education is positive in that it empowers the patient by demystifying the biological aspects of their disease and allows for informed consent with respect to treatment on the part of the patient. However, these strategies are often underscored by a tone of paternalism and promote the infantilism of patients. Meanwhile, there are those who identify patient irresponsibility as the source of TB infection, resorting to victim blaming- a common verbalized persecution of the poor based upon class-informed stereotypes. Negative and unsympathetic responses from the medical and lay community has facilitated the implementation of punitive measures against TB treatment non-complier. From "panoptic" models of treatment such as DOT therapy, to legal sanctions and incarceration, tuberculosis control serves as an exemplar of power, punishment and discipline in the arena of health negotiated along class lines.
A double-edged sword: culture as an index to health behaviour

Diametrically opposed to biological reductionist accounts of disease, social scientists and anthropologists in particular have attempted to emphasize the often overlooked cultural beliefs, value and world views which inform both the phenomenological aspects of patient's conceptualization of disease and the associated behaviours adopted to cope with their condition. The downside of this form of analysis is the appropriation of the notion and word "culture" to varying degrees by those in different fields, making the definition of the term "fuzzy" and even more difficult to operationalize and contextualize. Taking cultural factors into consideration is recommended by all who promote the creation of culturally-sensitive and appropriate health care. However, overemphasis of cultural aspects of patient health-seeking behaviour can also result in the perpetuation of existing injustices and inequalities. In his seminal work Infections and Injustices: The Modern Plagues (2001) Paul Farmer articulates the danger of over-emphasizing cultural aspects, particularly when looking for answers to patterns of health behaviour. In referring to the conflation of structural violence and the "cultural exotic”, Farmer wishes to remind us how easily practices that have been identified as differing between cultures can easily degenerate into racial stereotypes, prejudices and discrimination. When "culture" (with a capital “C”) is used as a window dressing to add the sense of depth to research, it is most often simultaneously used as a smoke screen to rationalize program failures as the inevitable result of cultural incommensurability, rather than being seen as resulting from material constraints rooted in political and economic inequality.

The politics of language- the “re-emergence” of TB

Although the biomedical tactic of avoiding the politicization of disease is not new, the discursive means elicited to perpetuate the avoidance of the political and economic underpinnings of disease has taken a new turn. The phrase the “re-emergence” of TB insinuates the return of a disease once conquered, and relegated to the annals of medical history. In reality, TB has never ceased to plague the poor, marginalized and disenfranchised of both developed and developing worlds. Also interesting is the “otherness” of TB. Tuberculosis is seen as disease of the “other”, that finds its way into countries and nations via the travel routes and trespass of immigrants, refugees and transients, who come from populations where the disease is “endemic”. These assumptions are heavily imbued with the notion of biological determinism, in which “vulnerable” populations are reified as groups who are “predisposed” to illness to a certain degree. As lucidly articulated by Waldram et al. (1995:263):

“Racial susceptibility to specific diseases was but one aspect of the supposition that humankind could be classified into biologically distinct units on the basis of fundamental, observable, heritable characteristics. The inability to mount an effective immune response to particular diseases was one of the features thought to distinguish ‘primitive’ from ‘civilized’ races.”

Re-visiting such discourse from our colonial past can provide us with stark examples of how arguments founded on existing biological variation can quickly be manipulated to support the propaganda of scientific racism.

TB and historical contingency

Anthropological interpretations of disease share in common the emphasis placed on the importance of situating and examining disease phenomena within their social, political, economic and cultural context. In his analysis of the health status of present-day Haitians, Paul Farmer reminds us that it is also important to consider both present-day structural constraints and historical contingency when interpreting the health of a particular population. In a similar fashion, Mary Ellen Kelm (1998) addresses the effects of colonization on aboriginal bodies and ideological constructions of disease. Both of these studies share the similar goal of identifying the effects of colonial history, marginalization, isolation, segregation and forced cultural assimilation on the disease history of populations groups. The influences of racism and notions of modernization, progress and development are also imperative when trying to interpret the
epidemiology of disease in indigenous populations. Both authors provide convincing arguments to support the view that diseases must not be viewed as isolated, discrete or discontinuous events. Rather, disease events should be viewed as biological manifestations of continuing social and political inequalities.

**TB in Aboriginal Populations**

The impetus to devise and implement a "new" national TB eradication strategy in Canada has resulted from the rise in TB infections in aboriginal communities as a result of the growing number of patients with HIV/AIDS-TB co-infection and the emerging resistance to TB drugs such as rifampin. Initiated in 1992 the “National Tuberculosis Elimination Strategy for Aboriginal Peoples of Canada” is the result of the collaboration of several agencies, including the first Nations and Inuit Health Branch (FNIHB) of Health Canada, the Centre for Infectious Disease Prevention and Control (CIDPC) of Health Canada and the Assembly of First Nations (AFN) (Health Canada 1999). The resolute goal of the strategy is the reduction of the incidence of TB in Aboriginal populations to 1 per 100,000 by the year 2010. Clinical Management, a TB registry and a controlled system for TB drug supply and dispersal are among the key components of TB control in the strategy representing initiatives that are centralized at the regional level (Health Canada 1999). Beyond these centralized implementations, decentralized strategies have been initiated through the delivery of primary health care services in First Nations communities. Constituting the backbone of the TB eradication strategy at the regional level include six key courses of action: 1) Case finding and case holding which involves the detection of active TB cases in a given community, to ensure a proper course of treatment for all patients and the maintenance of a central registry with records of treatment outcomes and follow-ups; 2) contact tracing and directly observed treatment of latent TB (LTBI); 3) surveillance at the community, regional and national levels; 4) Bacille Calmette-Guerin (BCG) immunization in communities where the use of the vaccine has been recommended; 5) health education and training; and finally 6) active research (Health Canada 1999:5). Despite these recent initiatives, a summary of the report published in 1999 concludes that although the rates of TB infection have experienced an over all decline, the strategy’s target goal of containing the incidence of TB to 1 per 100,000 is not expected to be attained by the projected date of 2010. The Aboriginal TB eradication strategy is modeled in the biomedical paradigm of disease. As such, important political, economic and social health determinants (i.e. poverty, marginalization, racism ...etc) are given little or no consideration. In addition, cultural diversity is denied through the homogenization of aboriginal groups, reminiscent of the Pan-Indian culture model of the early nineteenth century. What is most interesting, however is the omission of an important time in aboriginal Canadian history- the introduction of residential schools in Canada.

Although the dissemination of TB in aboriginal communities is traced back to the arrival of Europeans in the “New World”, framing the epidemiological history of TB in the “deep past” precludes the examination of equally important health-related events in the “recent past”. The residential school experience constitutes an important part of the aboriginal history of health and disease. One of the most important reports on the living conditions and environment of residential schools comes to us from general medical attendant, Dr. Peter Bryce. Bryce’s report, published in 1908 describes the dilapidated state of a series of residential and industrial schools in the Canadian prairies, and reports on the alarmingly high levels of TB morbidity and mortality of residential school students. In her chapter on residential schools, Kelm describes equally disturbing trends. A department survey of schools in 1939 estimated that at least 5% of all residential schools students in BC were suffering from active TB (Kelm 1998:67). A study conducted just a year later concluded that 70% of all Aboriginal children in residential schools reacted positively to the tuberculin test (Kelm 1998:67). Kelm’s chapter provides a succinct summary of the various health determinants that facilitated the origin and spread of TB in these environments. These included: malnutrition, sub-standard living conditions, the consumption of milk from cows infected with the TB bacillus, stringent working conditions and the enrolment of children already suffering from a wide array of illnesses (Kelm 1998:66-67). Although historical descriptions of TB are insightful, they fail to give us a holistic view of the legacy of the disease. What has hitherto been overlooked is the legacy of TB in Canadian residential schools, and how these experiences relate to current prevalence of TB in Aboriginal populations. Both authors provide convincing arguments to support the view that diseases must not be viewed as isolated, discrete or discontinuous events. Rather, disease events should be viewed as biological manifestations of continuing social and political inequalities.
populations, who are still 10 times more likely to contract TB than non-aboriginal Canadians (Health Canada 1999). How did the residential school experience affect both the biological constitution and the ideological illness constructions of aboriginal people? How did residential schools function as both loci and vectors of TB? What implications would an understanding of the residential school experience and TB have on present TB control initiatives? These are questions that warrant analysis if TB is to be controlled in Aboriginal populations.

The stronghold of the Western biomedical paradigm on the conceptualization and interpretation of health and well-being has presented an unresolved quandary in both the spheres of academia and public health. Consensus on the efficacy of biomedical theory and praxis, in turn serves to support and legitimize the formulation of generic, homogenized health care policies which are characterized by a uniformity of objectives, rationale and procedure to form models which are presumably universal in their applicability and projected efficacy.

This essay has attempted to show how the hegemony of the biomedical paradigm in TB control strategies has precluded consideration of important health determinants emerging from the political, economic and social spheres by deconstructing current TB initiatives, primarily the WHO’s DOTS strategy. The application of theoretical models such as critical medical anthropology can be used to offer both critiques of the existing features of TB strategies and counter-critiques of existing commentary on the status and efficacy of TB control initiatives. The importance of historical contingency on the health of populations was illustrated by a case example that looked at residential schools as the locus of physiological and psychological disease processes. If one important point can be extracted from this reflection on the legacy of a disease, it would be that our ethnocentric assumptions regarding the superiority of Western medicine continue to permeate health strategies and delivery, to the detriment of non-Western populations. If the efficacy, or rather inefficacy of current TB strategies is any clue, it becomes obvious that motivations that drive Western medicine’s private vices and public virtues in the realm of health are quickly making what Haig-Brown (1998) has coined “victims of benevolence” of those who our strategies are meant to help and not harm.

Works Cited


Health Canada 1999 Tuberculosis in First Nations Communities. Report Published by Authority of the Minister of Health, Ottawa.


