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Discourses of disease: Representations of tuberculosis within New Zealand newspapers 2002–2004 ☆

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Abstract

This paper critically examines the ways that tuberculosis (TB) has been represented in the print media in New Zealand over recent years (2002–2004). Our broad contention is that, notwithstanding its biomedical reality, TB is socially constructed by, and through, human experience. Further, public health practitioners depend, to a large extent, on the media to alert the public to threats of disease and opportunities for protection. However, the messages conveyed are sometimes neither helpful nor accurate. In our analysis of TB coverage in three major daily newspapers in New Zealand, we enumerate and classify references to the disease, as well as undertake a discursive analysis of the revealed themes. Of the 366 texts we retrieved in the database search, we selected 120 for in-depth analysis. Our examination indicated the importance of bovine TB within the national consciousness, the stigmatised character of TB and the association between TB and immigrants. We observe that newspaper 'stories' in general, and commentaries by public health officials in particular, are invariably offered on a 'case by case' basis. We conclude that this specificity in time and place avoids more challenging discourses linking TB with deeply embedded determinants of health such as the strong link between TB and poverty.

Keywords: New Zealand; Tuberculosis; Media; Disease; Discourse; Public health; Newspapers

Introduction

While medical researchers benefit from the media publicising their work, public health practitioners frequently depend on the media to alert the public to threats of disease and opportunities for protection. Both forms of dissemination can result in the print media granting a prominence to medical matters that is seldom matched by the attention afforded to wider determinants of health (Friedman, 2004). In this regard, media focus on biomedical issues reflects societal preoccupations with allocation of the 'vast majority' of funding for health research to biomedical work, 'despite the fact that a complex interplay of factors influences vulnerability and resistance to disease' (Institute of Medicine, 2006, p. 18). In this paper, we focus

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on media representations of tuberculosis (TB) which continues to be one of the world's most formidable public health problems, despite the availability of effective treatment since the 1950s. Approximately one-third of the world's population is infected with the TB bacillus and an estimated 2,000,000 people die from the disease each year (WHO, 2005).

Using newspaper texts as a case study, we consider the way in which the media constitutes and transforms the public meaning and significance of TB. As part of a larger research project examining TB in New Zealand (Farmer, Herring, Littleton, & Park, 2007), this paper analyses representations and discourses of TB within the major daily newspapers in New Zealand's three largest cities. Given the highly politicised environment of infectious disease, we ask 'how is the New Zealand print media shaping discourse about TB, especially in terms of privileging biomedical domains and individualizing and racialising the disease?'

Like HIV and many other infectious diseases before it, TB is replete with meaning. The changing ways in which TB and people living with it have been portrayed in literature and news media have shaped the cultural meanings associated with this disease. These meanings, in turn, have the capacity to affect how TB is experienced (e.g. as a disease of the literati, or of the impoverished poor) (Bryder, 1988). As Lichtenstein (1996) commented in her review of AIDS iconography in the New Zealand media, stories about disease draw on pre-existing stereotypes, but can in turn reshape or challenge them. This view that disease shapes and is shaped by human experience draws from a constructionist premise that knowledge is socially constructed and shaped by wider cultural, temporal and political factors. Additionally, this view contends that language is not merely a neutral means of communication but performs ideological work.

We begin by reviewing the historical and contemporary status of TB in New Zealand. Second, we examine the role of the media in current society and its influence on discourses concerning public health issues and, in particular, diseases such as TB. Third, we describe the data collection and analytic approaches of the study. We report our findings first by way of topic counts, then in terms of discourses evident within these topical treatments. We close with a discussion that reflects on the presences and absences within print coverage of TB during our study period.

Tuberculosis in New Zealand

It is unlikely that TB existed in New Zealand before the arrival of Europeans in the 19th century (Miles, 1997), but it was indisputably endemic within both European and Maori populations by the second half of the 19th century. Indeed many settlers suffering from TB had come from Britain to the colony specifically in the hope that the latter's climate would cure them (Bryder, 1996). Once it was established that TB was an infectious disease (1882), attempts were made by the government to restrict the entry of those suffering from it, although this was implemented in a relatively haphazard way. Early 20th century measures to combat TB followed overseas models, particularly Britain. These measures were based on the belief that fresh air, good food, exercise and rest were effective preventive and curative agents against the disease. BCG vaccination was developed in France in 1921, but, like Britain, New Zealand did not adopt it until after the Second World War (Bryder, 1999).

Following the Second World War more interventionist methods became available to treat and prevent TB. These methods included mass miniature radiography for early detection, BCG vaccination, and effective drugs, starting with streptomycin, developed in 1943. The Department of Health set up a Division of Tuberculosis in 1943, indicating a more proactive approach. From the 1950s to 1960s, TB was declining and it was believed that the problem would soon be 'conquered'. In 1969, 44% of all TB notifications were among Pacific Island peoples (Bryder, 1991) and in the 1970s, the Director-General of Health identified a new problem—the excessive proportion of cases occurring in immigrant populations. Much debate followed as to whether migrants brought the disease with them, or contracted it here because of their poor living conditions. TB has long been known as a disease of poverty, and with the downturn in the New Zealand economy in the latter part of the 20th century, the incidence increased, particularly among lower socioeconomic groups, notably Maori and Pacific Island peoples, though rates remained far below the 1950s levels (Bryder, 1991).

A form of the disease that has long been a problem for animal and human health is bovine TB. Introduced and now feral animals such as possums, goats and ferrets provide reservoirs for the disease. Although still a concern for the pastoral industry, herd testing, pasteurisation of milk and good animal

management practices mean that very few cases of bovine TB now occur in humans (Das, Baker, Venugopal, & McAllister, 2006).

The rate of TB notifications has not decreased in New Zealand since 1987 and indeed has increased slightly in the last few years, reaching a plateau at approximately 10–12 per 100,000. (Ministry of Health, 2006). This situation parallels developments elsewhere (Porter & Ogden, 1998). However, this rate of disease masks large internal differences that are revealed in the statistics when examining them by ethnicity. The 2003 incidence per 100,000 was: New Zealand European (Pakeha) 1.6; Maori 10.5; Pacific Islands 51.9 and 'other' ethnicities 82.1. These marked differences in incidence reflect social inequality, with TB rates being 60% higher in the most deprived than in the least deprived areas (Auckland Healthcare, 2000). There are also major regional differences in rates throughout New Zealand with the highest concentrations in the greater Auckland region (population 1.4 million, 2006).

TB is a notifiable disease in New Zealand and for every notified case it is estimated that approximately 10 people have TB infection, with only one-third of notifications being New Zealand-born people. Multi-drug resistant (MDR) TB and co-infection with HIV are relatively small problems in New Zealand. Thomas and Ellis-Pegler (1997) reviewed all the cases of HIV co-infection seen at Auckland Hospital in the 11 years preceding their study and demonstrated that co-infection remains a minor feature of the epidemiology of TB. However, in a more recent publication Thomas and Ellis-Pegler (2006) confirm these continuing low rates of both HIV co-infection and MDR TB in New Zealand, but point out that with increased rates of HIV in Asia and some parts of the Pacific which have a high prevalence of TB infection, co-infected population groups as well as those with MDR TB may well become more numerous in New Zealand in the future.

Recent New Zealand research reveals that there are social, cultural, political and economic, as well as medical, dimensions of TB that pose public health challenges. Contrary to public perception, TB rates are not solely attributable to immigration (Park & Littleton, 2007). Studies of outbreaks demonstrate that infections pass along the lines of social networks in which people live (within and beyond the immediate and extended family) (Calder et al., 2000; De Zoysa, Shoemack, Vaughan, & Vaughan, 2000; Hill & Calder, 2000), and, in the right circumstances, infection can be transmitted even during relatively brief contacts (de Zoysa et al., 2000; cf. Klovdahl et al., 2001). The attitudes and beliefs of those infected as well as their families and their communities influence treatment-seeking. In addition, socio-economic aspects of their daily lives (e.g. mobility, unemployment) affect the ease of their treatment-seeking and their accessibility to control measures. A key source of knowledge about TB among the general population is the print media. We now turn to consider its role in the field of public health.

Discourses of disease: the media and public health

Peoples' perceptions of health issues are not only shaped by their direct experiences and the impressions received from others but also by media accounts (Cassell, 1998). This is especially so when attention is turned to diseases such as TB which are experienced by relatively few people but which are potent signifiers (e.g. through the deployment of tropes such as 'third world diseases'). Potentially, at least, the media constitutes an important vehicle through which to convey the messages embedded in health policy documents (Hayes et al., 2007). We build on earlier studies of the portrayal of health and health care issues in the media (Joseph & Kearns, 1999; Seale, 2004) and use newspaper reports to focus on coverage of TB. We acknowledge that these discourses may contrast with those obtained from, for example, interviews with clinicians, nurses, patients and family members working with TB and reviews of the academic literature (e.g. Farmer et al., 2007).

In using the term 'discourse', we acknowledge the diversity of meanings attached to it (Hay, 2005). Nonetheless, we follow Lupton (1992) in regarding discourse as a set of ideas or a patterned way of thinking which can be discerned within texts and identified within wider social structures. A discourse analytic approach regards language and meaning as social constructs. Using this approach to interpret media reports builds on the idea that readers are 'active agents' co-creating meaning with the writer. By considering the context and intended audience of news texts researchers are concerned about the effects of the media on what people may do or think. Thus, there is an acknowledgment that there is power within texts that have their sources beyond the texts themselves. The discourses that are

constituted and circulated by newspapers can be regarded as functioning to produce what Foucault (1980) calls particular understandings about the world that are accepted as 'truth' (Waitt, 2005). In the course of promulgating such 'truths' the media as a collective and commercial institution is implicated in 'governing populations'. In other words, the power of the media can (directly or indirectly) influence the conduct of its audiences (Rose, 1990).

Lupton's (1992) challenge that discourse analysis was under-utilized in public health has been partially addressed by a number of more recent studies. Four themes have been raised by this work. First, coverage tends to be predominantly conservative, giving greater voice to elite rather than less powerful groups, and to men rather than women (Lupton, 1995). Second, the media tends to individualise illness rather than place it in its broader socio-economic and political contexts (Lupton, 1995). Third, the need for medical management and a related theme of fear is common (e.g. Shoebridge & Steed, 1999). Fourth, efforts to counterbalance claims contesting medical power (e.g. anti-immunisation) frequently involve reframing the underlying ideological appeals (Leask & Chapman, 1998). Our research asks whether Lupton's findings are born out in newspaper treatment of TB in New Zealand during our study period.

Precedents to our work on media coverage of an infectious disease include Wallis and Nerlich (2005) who examine the metaphorical framings of the UK media's coverage of Severe Acute Respiratory Syndrome (SARS) through analysis reports of the disease within five major national newspapers during 2003 and the analysis of an outbreak of TB in Leicester, by Bell, Brown, and Faire (2006). The latter authors claim the media to be a key vehicle through which society's myths are told and retold. In particular, they identify diasporic communities as connecting the city to the world beyond. Their focus on the connections between disease, nation and identity in a multicultural urban context clearly has applicability to our work in New Zealand, whose larger cities increasingly demonstrate aspects of transnationalism (Friesen, Murphy, & Kearns, 2005).

The foregoing studies show that public health 'problems' involve not only concern for the exposure of populations to biomedical risks, but also concern for managing social risks such as fear, apathy and misinformation. Speculatively, therefore, there is risk inherent in the dissemination of information about a disease like TB. We now turn to the methods we employed to address the question: 'how is the New Zealand print media shaping discourse about TB, especially in terms of privileging biomedical domains and individualizing and racialising the disease?'

Method

Data collection

In order to consider discourses and representations of TB, we undertook a textual analysis of entries in key newspapers. To ensure comprehensive coverage of TB issues, newspapers covering New Zealand's three largest cities (Auckland, Wellington and Christchurch) were selected (the *New Zealand Herald (NZH)*, the *Dominion Post (DP)* and *The Press (TP)*, respectively). The *New Zealand Herald* is Auckland-based (circulation approx. 200,000; weekly readership: 1 million) (APN, 2006). The *Dominion Post* emerged from the merger of the capital Wellington's two daily newspapers, The *Dominion* and The *Evening Post* in 2002 (circulation: approx. 98,000; weekly readership: 255,000) (Fairfax New Zealand Ltd., 2006a). *The Press* is the most widely read newspaper in the South Island (circulation approx. 91,000; readership: 234,000 (weekly) (Fairfax New Zealand Ltd., 2006b). Unlike the print media in larger countries (e.g. see Seale, Boden, Wiliams, Lowe, & Steinberg, 2007) the New Zealand newspaper market is relatively unsegmented and so our focus on the major daily newspaper in each city guaranteed we were accessing the major source of print information.

Using the Newstext database [http://io.knowledge-basket.co.nz], we conducted a search for articles containing the words 'TB' or 'Tuberculosis' between 1/1/02 and 31/12/04 in the three newspapers. This date range was selected in order to provide a wide-ranging overview of TB representations within the media, concurrent with other studies in the larger research project. A large number of articles was identified and each was read and categorised. The initial classification was made by the first author, with the third author independently reading the articles and confirming the classification. Articles predominantly concerned single subjects. It was unusual, for example, for bovine TB articles to mention human health risks. The few that did so devoted only a single sentence or clause to

the subject. The area where there was more overlap was in TB rates, cases and immigration. For example, a report on a case often provided information about TB rates as part of the context. However, there was no doubt expressed by the two readers about the main subject of the article which was usually reinforced by titles and other sub-editorial attention such as paragraphing and sub-headings.

Articles were excluded from the sample for two reasons. Firstly, syndicated articles discussing international TB issues were excluded, as our study sought to consider discourses within the New Zealand context. Second, articles with fleeting mention of TB were also excluded. Examples of such exclusions are obituaries where the individual had TB. Table 1 depicts the number of articles retrieved and subsequently included within the sample once the foregoing exclusions had been made. Some articles in the three 'dailies' were variants of the same 'story', syndicated by Associated Press. We retain these items in the overall count for each newspaper, as local choices are made to run or not to run such stories.

Analysis of the texts was undertaken on several levels. Texts were categorised by topic and quantified, indicating the frequency with which particular aspects of TB were addressed. Structural and stylistic factors, such as authorship and voice, were also considered.

The second level of analysis involved an in-depth exploration of statements made about TB and the themes that emerged. Particular attention was paid to the ways in which TB and those people experiencing TB were described and characterised, what Lichtenstein (1996) referred to as the iconography of disease. The frequency with which certain words, phrases and linguistic devices such as stereotypes and use of comparatives were used was recorded and incorporated into the analysis. In light of the ideological power of discourses (Barnes & Duncan, 1992), particular attention was paid to the way in which certain aspects of knowledge about TB were naturalised.

Finally, in the few cases where the information allowed, the way in which an incident or piece of information became news and was disseminated (or not) through these leading newspapers to the different regions of New Zealand was studied.

Table 1
Number of newspaper texts concerning TB retrieved in database search

	Total 'hits'	Excluded	Analysed
NZ Herald	109	66	43
Dominion	109	67	42
The Press	148	113	35
Total	366	246	120

Results

Of the sample of 366 texts retrieved in the database search, 120 were selected for further in-depth analysis. This sub-set was further divided into topic clusters summarised in Table 2.

Table 2 indicates that the issue receiving the greatest coverage was bovine TB. Twenty-one articles covered bovine TB control measures in cattle and deer herds, while the role of possums in transmission was also frequently discussed ($n = 13$). Anxiety about the effects on the ecosystem and human health of 1080 poison (monofluroacetate), which is used to control possums, was an important theme. Other topics within this category include coverage of four bovine TB outbreaks throughout the country, vaccine developments and analysis of bovine TB rates. Newspaper coverage of this issue tended to focus predominantly on the perspectives of industry regulators, bovine TB control funding bodies and the activities and experiences of farmers.

The second most frequent topic area was coverage of human TB cases that occurred during the sample period. Cases occurred throughout the country and included locations across both islands and in major cities (e.g. Wellington) as well as in predominantly rural regions (e.g. Northland). Significantly, cases tended to be reported by occupation and residency status. While other individual characteristics of those with TB were left unmentioned, occupational status tended to be emphasised, and, in many cases,

Table 2
Topic clusters and number of articles about TB

Topic area	Number of articles
Bovine TB	52 (43.3%)
TB cases	38 (31.6%)
TB and immigration	12 (10.0%)
TB rates	7 (5.8%)
TB research	5 (4.2%)
Miscellaneous	6 (5.0%)
Total	120

formed the sole basis of identification within the headline. Occupations included dental therapist, student, meat worker, nurse and mill worker. The greatest coverage was afforded to cases in which the individual was working within a health care setting. Within this category the voice of public health officials tended to dominate, either reassuring readers about the nature of the TB cases or urging greater action.

The third most frequent type of article discussing TB was related to immigration. This category is highly influenced by political discourses operating at the time of publication and tended to focus on changes in health screening/testing requirements for immigrants entering New Zealand. Other issues included concern over the comprehensiveness of health screening for asylum seekers, concern over Asian students and the general prevalence of TB among 'migrants'. These 'stories' were generally assembled by political reporters and Members of Parliament tended to be the most frequent contributors of commentary.

Other topic areas encountered included the increase in TB rates based on data releases from the Ministry of Health and Environmental Science & Research (ESR), a government research agency. These articles tended to focus on the numbers of notifications and included a warning about the implications of a 'return' of TB to historic levels.

The final category included articles covering scientific research on TB for improved vaccines ($n = 1$), improved treatment ($n = 2$) and a 'cure' ($n = 2$). These articles all featured New Zealand-based biomedical scientists and researchers, and most likely emanated from press releases issued by universities and research organisations. In a similar vein to the findings of Bell et al. (2006) these articles tended to be optimistic in tone in comparison to the sobering reality of increasing TB rates and a return to the 'dark' past. Several miscellaneous topics occurred only once within the 3-year sample frame. These included a case of MDR TB, changing TB treatment guidelines, ethnic disparities in TB rates, and housing and TB.

Emergent themes and their context

Bovine TB

In order to understand the media coverage of bovine TB, it is necessary to provide some background information on this form of the disease. Following the discovery of the tubercle bacillus (or *Mycobacterium tuberculosis*) in 1882 it was recognised that there were two major forms of the disease—human and bovine. In the early 20th century only about 2% of pulmonary TB was caused by bovine infection, but 30% of non-pulmonary infection was caused by consuming infected meat or milk. The latter assumed greater importance as it was primarily associated with infection of children and infants. Affecting the bones and joints, it was the major form of crippling of children, and in 1930s in New Zealand up to 400 children were hospitalised each year with bovine TB (Bryder, 2003). Like other Western countries, New Zealand sought to eradicate bovine TB. In 1951 compulsory tuberculin-testing of all dairy herds was instituted, together with the eradication of positive reactors and pasteurisation of milk supplies to urban areas. Despite these efforts, the problem never entirely disappeared, at least partly because of the cost involved to the producers, and the issue continued to exercise minds within the dairy and meat industries. New Zealand was not alone. In 2004, the British Department of the Environment, Food and Rural declared bovine TB to be 'the largest threat facing us at the moment'; Britain was in danger, they believed, of losing its bovine TB free status (Waddington, 2006). As a major public health issue, it remained a potential rather than actual threat.

New Zealand shared these concerns. The articles studied here show that the major concerns in relation to bovine TB were not the effect on the local population or the nation's children, but rather on New Zealand's reputation as a high-quality agricultural exporter. As one reporter wrote, 'at stake [was] the right for New Zealand to call itself free of the disease and enhance its clean green image in overseas markets' (*DP* 14/10/03). Bovine TB issues received the greatest exposure within *The Press*, which is unsurprising given the largely rural nature of the South Island of New Zealand. In the 21st century bovine TB remains an important issue. This is undoubtedly due to New Zealand's agricultural heritage and the ongoing significance of the sector as one of the nation's leading export earners.

A number of articles focused on the potential economic impacts of bovine TB for the agricultural sector (e.g. 'TB in cattle may hit region's trade' (*DP* 23/9/04)). Another in the *New Zealand Herald* documented how an outbreak of TB closed down a Northland deer farm requiring the slaughter of over 1100 animals and that 'the outbreak could have

threatened Northland's TB free status and slashed tens of millions of dollars from the $1.2 billion a year the region makes from dairy and beef' (*NZH* 3/8.04).

A major culprit was identified. The possum is a marsupial introduced from Australia in 1837 to provide fur. It is not only responsible for consuming an estimated 20,000 tonnes of vegetation every night across the nation, but also for harbouring and transmitting diseases such as bovine TB (*TP* 21/12/02). Over the study period, considerable debate emerged over the use of aerially spread 1080 poison as a mechanism for curbing the possum population and hence, incidence of TB in cattle and dairy stock. One-third of all articles on bovine TB addressed this issue and covered the viewpoints of various stakeholders (e.g. Department of Conservation, the Animal Health Board), concerned farmers, and, to a lesser degree, the views of environmentalists concerned at the ecological impacts of the poison. Rather than TB being depicted as a serious threat to the health of humans, the target of concern is the use of 1080 and its effects on the ecosystem.

TB infectiousness and stigma

Those suffering from TB have long been marginalised and stigmatised. While 'consumption' was romanticised in the 19th century (Dubos & Dubos, 1953), once its infectiousness was recognised this image changed. By the early 20th century, it was generally believed that the TB germ was harboured in environments of dirt and squalor, in the homes of the poor from which it could spread to their more respectable (middle-class) neighbours. In Britain, the National Association of the Prevention of Tuberculosis declared that 'the beautiful and rich receive it from the unbeautiful poor' (Bryder, 1988, p. 20). By the 21st century the concern had shifted from the 'poor' (although marginalised groups such as the homeless and those with AIDS were still implicated) to the role played by Third World populations in harbouring the disease which threatens to 'explode' into the developed world (Dormandy, 1999). Articles in New Zealand papers stressed the potential for TB to similarly have an impact beyond otherwise marginalised populations, with words such as 'alert' or 'scare' commonly used, reflecting such latent fears.

While TB is a treatable disease, newspaper coverage tended to accentuate its stigma and infectiousness, reinforcing longstanding discourses of fear and contagion (Craddock, 1995). This trend was particularly evident in the language used to describe individual TB cases that occurred throughout 2002–2004. The disease itself was invariably and aptly described as being an infectious or communicable disease. However, it was often labelled a 'third-world disease' and as being potentially fatal, deadly or lethal (e.g. 'deadly infectious disease' was used to describe MDR TB, even when only one of the commonly used drugs was not effective on the strain (*DP* 21/6/04)). This reporting emphasises the degree to which TB continues to be associated with fear and alarm. On the other hand, some press releases from District Health Boards are calming in tone. For example, the Hutt DHB stressed that a sudden jump in TB cases in a particular month was nothing to worry about as most cases were neither pulmonary nor infectious (*DP* 20/12/04).

Immigrants were considered the major source of transferring the disease. Locally, however, they were not the only culprits. Those in certain occupations, whether immigrants or not, were identified as more dangerous to the community through their interaction with the public. Indicative headlines include: 'Lincoln student TB scare' (*NZH* 9/10/03), 'Nurse with TB causes alert' (*DP* 5/7/02), 'TB fears over Asian students' (*TP* 31/10/02), 'Kids' dental worker has TB (*DP* 5/8/03), and 'Hospital professional has TB' (*DP* 20/2/02).

The greatest coverage tended to occur in situations where the person had extensive daily contact with others—dental therapist ($n = 8$), student ($n = 6$), mill worker ($n = 6$), hospital worker ($n = 4$) and nurse ($n = 3$). Yet there are differences in the ways these cases were described. Health workers who contracted the disease were particularly newsworthy, perhaps in part because these 'cases' pose a particular risk and should otherwise be healthy, and strong and not be harbingers of disease. Moreover, they should have personal responsibility and the self-control to remove themselves from the public sphere in face of the dangers they represented.

The foregoing view was particularly evident in the case of the school dental therapist who was diagnosed with TB after visiting a doctor for an unrelated matter. This situation was constructed as particularly alarming, perhaps in part due to the 'vulnerable' status of the children within the work environment. Representatives of hospital management were then cited as believing that their annual staff screening systems were adequate and that, even though this person's test was 10 months away, the

TB would have been picked up 'as soon as symptoms appeared' (*DP* 6/8/03). This was, in fact, very unlikely; it was commonly recognised that doctors who rarely saw TB were not good at identifying its symptoms. Nevertheless, one health official stated reassuringly that it was most unlikely that any children were exposed to the illness. The article then outlined the number of contacts the dental worker had within the two schools and the process public health officials were following in terms of offering information to parents, skin tests and X-rays or medicine if necessary. The school principal stated that there was no panic in the school and praised health officials' handling of the issue. Yet an article the following day entitled 'TB fear spurs dad to bar dental care for son' (*DP* 7/8/03) described the action of one parent as removing his son from dental services after discovering that the therapist concerned had not worn a mask on several occasions while treating children. Subsequent articles mentioned the occurrence of skin tests, while 3 weeks later an article entitled 'TB tests on school children allay fears' (*DP* 21/10/03) reported that it was unlikely that any children had developed the illness through their contact with the dental worker. The article concluded by simply stating 'The worker is no longer on Hutt Hospital staff'.

One trend observable within newspaper reports on individual cases is the multiple positions occupied by public health officials. In nearly all instances of individual TB cases, the views of public health officials are extensively reported. At times, comments by health officials essentially minimised the 'infectiousness' of the disease, suggesting that it was unlikely to have been transmitted. In the case of the dental worker, medical officer of health (MoH) Annette Nesdale said that 'In the very unlikely event that any child has been directly exposed to the TB bacteria, they will not be infectious at this stage and therefore could not pass the TB bacteria on to other people' (*DP* 5/8/03) while in the case of a Dunedin nurse who contracted the disease, the district health board chief executive Dr. Bill Adams stated 'Early … TB, which I gather this is, is not very infectious at all. It's only in the later stages it is, so in the early stages it's not an issue for other people' (*NZH* 4/7/02). In another case, a primary school child was reported as being diagnosed with the disease, with the MoH for Wellington saying 'though the disease was airborne, the risk of children being infected was 'pretty small' (*DP* 21/10/02). The reasons for trying to reassure readers and minimise the infectiousness of the disease are understandable. However, these responses serve to send mixed messages about the disease and contrast with comments made by the Ministry of Health exhorting people to be vigilant regarding the symptoms of the disease (e.g. *NZH* 23/2/02) and a number of articles warning people not to be complacent in light of TBs resurgence in New Zealand (e.g. 'Dreaded TB on rise again'—*DP* 28/6/04, and 'Rise in TB cases alarms health officials—*NZH* 23/3/04). Exhorting people to be vigilant regarding the symptoms of the disease in the face of a possible rising incidence suggests that the emphasis rested on individual responsibility for checking the disease; its infectiousness was downplayed by the health officials though not by the press generally.

Another position taken by public health officials is to educate readers about the nature of the disease. This tended to involve description of symptoms (e.g. persistent coughing, weight loss and night sweats) and description of the contact tracing process for the individual cases that occurred. This was followed by reassurances that the disease is treatable (e.g. 'It [TB] can be fully treated …') (*DP* 26/10/02) and not as stigmatised as it once was ('… people should realise that it's not surrounded with the total dread that it was' (*DP* 26/10/02)).

At other times, the contact tracing activities of public health officials were described, and framed in terms of trying to 'pursue' and 'track' those possibly infected with TB. Examples include, 'Public Health South staff are tracing and testing up to 60 people for pulmonary TB …' (*NZH* 8/7/03) after a notification in Invercargill and 'Thirty five New Zealand children are being tracked down after potentially being exposed to TB …' (*NZH* 4/12/02) following a notification in a holiday resort in Australia. Yet, on one occasion this activity was reported as seemingly resented by a health official who commented in the context of three separate notifications of TB cases in international students in Canterbury: 'There is other work our officers can be doing rather than chasing TB cases around' (*TP* 23/12/03).

Immigrants

Coverage of TB issues within New Zealand newspapers frequently implicated immigrants as the source of the 'TB problem'. Keeping disease outside national borders is an issue which has exercised the minds of public health and immigration officials

since the late 19th century, in New Zealand as in other countries such as Australia and the United States (Bashford, 2004; Bryder, 1996). A number of articles described efforts by New Zealand immigration officials to 'harden the borders' and increase medical testing and policing of migrants entering the country. This includes screening migrants from 'high-risk' countries for TB (*DP* 29/1/04). The basis for tightening the medical screening procedures tended to be framed in terms of economic costs of treating such cases (e.g. 'The government is expected to announce tougher medical screening of migrant groups at risk of TB, AIDS and other expensive-to-treat diseases' (*DP* 21/1/04)). The then Immigration Minister, Lianne Dalziel justified this move by stating 'A country is entitled in determining whether people are eligible for residence or not to undertake—and I know it might sound harsh—a costs-benefit analysis … if there are going to be significant costs' (*DP* 29/1/04). The proposed shift, enacted in 2005, from compulsory TB screening only for people intending to stay for 2 years or more, to all those coming for 6 months or more was repeatedly endorsed and supported by public health officials (*NZH* 29/1/04). This focus on economic assessment of costs ignores data which reveals that defensive border screening only picks up a small proportion of all TB cases in overseas born individuals who develop TB in New Zealand (Das et al., 2006), yet border screening is seen as the primary mechanism to deal with TB in immigrants. The main reason why border screening is only a small part of the answer is because few migrants enter the country with active TB.

One group of migrants specifically mentioned was asylum seekers. An article titled 'Asylum seekers sidestep health checks' (*DP* 12/9/02) reported on debates in Parliament the previous day, the anniversary of '9/11'. It was reported that these people are allowed to stay in New Zealand despite the fact that some fail health tests. According to the article, the September 11 anniversary had been marked ''with an Opposition attack on an 'uncontrolled immigration and refugee system' said to make New Zealand vulnerable to both disease and crime''. Another article, 'Health alert on asylum seekers' (*NZH* 23/8/02), describes the high burden of disease, including TB, amongst asylum seekers. Elsewhere, in an article titled 'Immigrants a strain' (*DP* 30/8/02), the Hon. Winston Peters accused the Immigration Minister of endangering New Zealanders' health by exposing them to 'third world' disease brought to New Zealand by refugees and asylum seekers. He claimed that refugees and asylum seekers were 'bringing HIV, TB, rubella and infectious skin diseases to New Zealand with them' (*DP* 30/8/02). He made similar allegations in Parliament on 3 September that year (*Hansard*, 'Questions to Ministers' 3/9/2002). Exactly 1 year later in 'Questions for Oral Answer', he asked the Prime Minister if she had confidence in her Ministers of Immigration and Health, when they were allowing ''hundreds of people with Third World diseases, including TB cases … ['to clog up wards' …] and how can that be a responsible way of defending the health of the New Zealand people?'' (*Hansard*, Week 35-2003). This time, however, his statements in Parliament were not broadcast widely in the print media. These texts reveal the extent to which different migrants are seen as being more 'diseased' than others. Asylum seekers are possibly imagined as the least desirable of all migrants and are thus repeatedly identified and targeted for increased policing and surveillance, and, at worst, refused entry. In these stories, it is not the economic costs but the danger to health of New Zealanders that is stressed. This contrast in the media attention given to Mr Peters' statements in 2002 and 2003 also shows the variable degree to which statements and allegations made by public figures are translated into print media items, pointing to the active role of the media in creating news.

In the single article identified that dealt with drug resistant (MDR) TB in New Zealand, this condition is described as growing concern in the country occurring because patients are not taking their medicines properly or not completing the course of medicines. Yet later in the article, it is stated that MDR TB rates are 'extraordinarily low in New Zealand and most cases were imported—brought in by immigrants infected overseas' (*DP* 21/6/04). In an article on the increasing number of TB cases in the Auckland area, the Auckland District Health Board 'said the increase in cases had occurred among two groups, recent migrants and Pacific Islanders' (*NZH* 24/3/04).

One particularly striking case was that of an Indonesian man with TB who, according to the article, was '… responsible for infecting up to 20 people with TB [and] is an overstayer who is now being *hunted* by the Immigration Department' (emphasis added) (*NZH* 20/11/03). The article describes how he failed to declare his illness upon

arriving in New Zealand and had provided 'bogus' details to hospital staff when being treated.

One group repeatedly identified in terms of immigrant TB is foreign students studying in New Zealand. Yet within this category, some students, most notably Asian students, are targeted more than others (e.g. 'TB fears over Asian students'—*TP* 31/10/02). In one situation it is reported, 'Canterbury health authorities have renewed calls for tougher TB screening of foreign students *after yet another* student has been found with the disease' (Press 13/12/03) (emphasis added). This is interesting given that it is reported that in the Canterbury area only 10% of TB notifications are for foreign students (*TP* 10/10/03). While this case occurred before compulsory screening was introduced, it highlights the extent to which foreign students are associated with TB in New Zealand. In another article reporting on the same case, the MoH Dr. Brieseman stated that 'Health screening of students before they entered the country would help health authorities pick up and treat cases of TB before they were found in the community and save a lot of work. I don't think it's a risk of spreading it around. It's about how much work it takes for us to deal with it—contact tracking, that kind of thing' (*TP* 13/12/03). This quote justifies screening not in terms of preventing the spread of disease but reducing the workload of stretched health workers. A quote from the president of the local University Students Association concurs with Dr. Brieseman saying that 'It's a time bomb waiting to happen—what other illnesses and diseases are they bringing in?' and 'we have to protect our own domestic students' (*TP* 10/12/03).

Biomedicine and science

In stark contrast to repeated warnings over rising TB rates in New Zealand, the gloomy prospect of the return of a 'disease from the past' and alarmist coverage of individual TB cases as 'outbreaks', one theme that emerged was the role of scientific research in New Zealand offering hope for a cure for TB. While migrants are blamed as the cause behind much of the TB, New Zealanders were strongly associated with this scientific quest. Headlines such as 'Graduate at forefront of global TB battle' (*DP* 10/8/04), 'Auckland student finds clue in mission to wipe out TB' (*NZH* 8/9/03), 'Kiwis make TB discovery' (*NZH* 20/2/03) describe the scientific endeavours of researchers throughout the country in finding a cure.

These articles were markedly different from the others in our dataset. They were full of optimism and hope that '… scientific breakthrough marked the dawn of a new therapeutic age' (Bell et al., 2006). At times, TB was framed in terms of the language of war—as a battle, which only scientific progress and discovery could combat, invoking notions of triumphalism. This framing is not new. Since the bacteriological revolution of the 19th century, germs had been described as the enemy which attacked the body which must summon its defenses against the invasion. Scientific medicine was responsible for the 'conquest' of the disease (see for example, Waksman, 1965). Military metaphors were not confined to TB but used to describe other modern public health 'campaigns' such as against cancer, polio and AIDS (Lerner, 2001; Sontag, 1978).

Discussion

Our analysis of coverage of TB in the three major New Zealand newspapers has revealed clear patterns. First, each of the newspapers included roughly the same number of TB-related articles over the study period. Thus, although it is evident of late that most cases of TB arise in Auckland, the disease appears to be of national concern. To a large extent, this nation-wide trend is skewed by the high level of interest in bovine TB which, in turn, is reflective of pastoral agriculture's enduring place within the nation's economy and culture. We identified 43% of coverage devoted to this animal variant which has little actual, though much potential, health consequence to humans. These stories speak to New Zealand's economic vulnerability as a nation dependent on trade and the way that loss of TB-free status would impact upon the economy. The finger is justifiably pointed at the possum, an introduced marsupial which is not only a reservoir of TB (and therefore a constant threat to domestic herds of cattle and deer), but also is a threat to native forests and orchards. Like the 'domestic students' of concern to the student president quoted earlier, domestic animals and other resources also have to be protected from 'diseased' migrants, whether they are possums (which make herds vulnerable to infection) or recent migrants (whose active pulmonary TB potentially infects fellow students and might contribute to the downturn of the multi-million dollar market in international education).

To this extent, our study has resonances with the work of Bell et al. (2006) who analysed 'the return' of TB to Leicester, UK. As in their study, we see TB in New Zealand as having become emblematic of the 'otherness' associated with less welcome aspects of transnationalism, given that for some politicians (and journalists), the very presence of members of diasporic communities challenges, if not destabilises, a sense of nation and identity. Indeed, as Curtis (2004, p. 241) states,

> the populations most at risk of tuberculosis are those which are frequently disadvantaged and socially excluded. Responses by society to the disease often reflect the social relations between, on the one hand, these groups at risk and, on the other hand, the more affluent and powerful social groups with greater control over the collective resources of society that might be used to combat the disease.

In light of our analysis, we might reinterpret Curtis's observation to see the 'collective resources' that can be deployed in favour of 'powerful groups' as including the print media itself. For it is through a reporting that lends disproportionate focus on the economic threat of animal TB and the social threat of the migrant 'other' that TB becomes recast as a disease of 'Other' places and peoples, rather than one replete with potential to reappear within close and familiar contexts. By way of example, one noteworthy story (*DP* 31/03/03) in our dataset concerned a New Zealand born European who was surprised to find that he had TB and who was illustrated by a photograph of doctor and patient in Hanoi. Another factual piece contributed by a GP about TB in New Zealand was illustrated by a different Vietnamese man recovering from a lung operation for TB, apparently (*DP* 28/6/04). In these instances, although the reporter and contributor were writing about domestic TB, somewhere within the editorial process TB became associated with 'foreigners' who were, in this instance, neither migrants nor intending migrants, but presumably chosen because they represented 'the other'. In such conflations with Otherness in the media, a further layer of irony exists with most TB among so-called 'others' developing *after* (and sometimes decades after) their arrival (Das et al., 2006). Were this insight to be shared with the public, then it would be more possible for people to understand the way in which latent TB combined with poverty and overcrowding might lead to active TB. Instead, the impression is created of active TB disease striding over the nation's borders or being 'brought in' by migrants.

The potential for TB to reappear is connected to broader determinants of health than the media coverage of biomedical 'quests' for solutions admits. Indeed, a noticeable exclusion in our study findings was coverage of the strong link between poverty and TB. This finding concurs with recent Canadian research that reveals a stark difference in focus between the determinants of health status identified in policy statements and the stories in newspapers, which overwhelmingly focus on issues of health *care* (Hayes et al., 2007). While the link with migrants was made, the fact that many such people experience considerable difficulties securing housing and employment was absent from accounts. With the exception of one short article on housing, there was no reporting on the links between socio-economic determinants of health and TB. Indeed, the *experience* of the disease in general was missing, even in the more discursive 'Weekend Review' sections of these newspapers. This situation arguably reflects the stigma of TB. Unless some celebrity were to contract it (as has been the case in the past with, for example, author Katherine Mansfield), we can presume it would not be worthy of a 'feature' article. However, we need to add a qualification. While the surveyed articles which addressed TB directly did not dwell on poverty, many articles on the issue of poverty *per se* (and particularly child poverty), referred to TB in passing along with other diseases of the poor (Bryder, 2003).

Conclusion

We have argued that in times and places where relatively few people have direct contact with a disease like TB, the news media play a central role in shaping its construction. A key strength of our paper has been the comprehensiveness of our survey. The limited number of widely read daily newspapers in New Zealand's main centres allowed us the opportunity to undertake a comprehensive counting and classification exercise. This approach enabled us to identify trends that would not be evident in casual or less sustained observation.

In light of the recent epidemiology of TB in New Zealand, we can respond to our research question ('how is TB represented in the New Zealand print media?') in a word: partially. The disease's animal variant is given a prominence which may lull

a newspaper readership into minimising the importance of TB of human origin. The quest for biomedical 'breakthroughs' is emphasised over efforts to redress the socio-economic conditions. Further, the associations between TB and broader determinants of health such as housing and income are largely overlooked. Of arguably greater concern is a somewhat misplaced sense of risk to the general population and a focus on the 'otherness' of those acquiring TB which threatens to exacerbate processes of social distancing.

Our use of discourse analysis has demanded that we grant attention to the socio-cultural and political context in which the text and talk about TB occur. Our study period coincided with an unprecedented period of public and political anxiety about levels of immigration and the rate of change within New Zealand society in general. It is such a context, we claim, that sets the conditions for construction of TB as a 'fearful' and 'foreign' disease. As long as public health officials are called upon to comment on a 'case by case' basis, their observations will be sufficiently specific in time and place as to avoid the more challenging discourse linking disease with deeply embedded determinants of health.

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