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SEEDS of MYTH: EXOTIC DISEASE THEORY and DECONSTRUCTING the AUSTRALIAN NARRATIVE of INDIGENOUS DEPOPULATION

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Abstract

The theory that the rapid depopulation of Indigenous people post-colonisation was largely caused by European introduced or exotic disease to which Indigenous people had no immunity resonates through most narratives of the early years of colonisation. The question of whether this narrative is based on sound medical evidence or is better placed in the realm of myth is the subject of this paper. Here I contend, that introduced disease is little more than a convenient explanation of the rapid depopulation of Indigenous people in south eastern New South Wales during the nineteenth century, and one that allows the illusion of colonial ethnography to perpetuate a widespread belief that introduced diseases and immunity were the unfortunate, but unavoidable cause of most Indigenous population decline. But what is the evidence that these disease theories found in Australian history are anything more than Eurocentric constructions? An Indigenous approach to the topic, as undertaken in this paper, raises questions that are as yet without answers and which challenge conventional theoretical explanations.

Introduction

This paper is divided into two parts. The first part of this paper will discuss the use of exotic disease theory in ethnographic tradition in relation to accounts of the disappearance of Indigenous populations. This section will investigate how, and if, the merger of disease theory with accounts of violence, distorts the real impact of both violence and disease, and adds conjecture about the impact of violence and massacres as seen in the recent history wars. While having a variety of dispositions about the degree of colonial violence, murder and massacre, a number of prominent Australian contemporary historians including Richard Broome, Henry Reynolds and Keith Windshuttle show a united front when it comes to exotic disease theory. Although these historians vigorously debate the impact of violent imperial forces on Indigenous populations, exotic disease is far less contentious and readily accepted. It is an extraordinary consensus given the fact that there is no solid medical evidence to support exotic disease theory and the ethnographic records on this subject are highly contestable.

The second part of this paper presents the views of several leading Indigenous academics, including Marie Battiste, Linda Smith and Lester Rigney to explore the Eurocentric nature and construction of ethnographic tradition as an integral component of cognitive imperialism. These Indigenous academics challenge the exclusive domain of Eurocentric thought and knowledge and within this tradition I propose that a review of exotic disease theory in Australia is needed to query its role as a perhaps, inadvertent form of scientific racism. As it stands exotic disease theory might be considered as a Eurocentric ideological construct that preaches a cognitive imperialistic sermon of racial superiority. Finally, I suggest that in its current state exotic disease theory is in need of considerable refinement before it should be accepted as a component of pedagogy in Indigenous studies and education.

Part one: The use of exotic disease theory in Australian history

Exotic disease theory is the belief that Europeans and others unintentionally introduced diseases such as

smallpox, measles, influenza and syphilis with a result that large numbers of Indigenous people died because they had no immunity. Europeans did not succumb at the same rates because they had prior exposure which resulted in acquired immunity. The theory is used within the colonial narrative, as it is in other colonised states, to explain the rapid depopulation of Indigenous peoples in the face of European incursions into their country. While there is no doubt that some Indigenous peoples did indeed die from exposure to introduced diseases, it is the primacy of exotic disease theory over the alternative proposition of Indigenous population decline due to frontier and other colonial conflict and warfare, which is a central focus of this paper.

Australian historians have adopted a scientific principle to claim exotic disease killed Indigenous Australians without sound medical proof. Across the Australian colonial frontiers, wherever battles were fought between local and invader, in a struggle over lands and waterways, exotic disease and a lack of immunity are posited as a major factor in rapid declines of Indigenous populations. For example, Broome states:

> Despite the violence the Aborigines experienced and the compromises they were forced to make, the continuing impact of European diseases was the greatest problem resulting from European contact. Even before they laid eyes on the Europeans, the Aborigines felt the sting of European diseases previously unknown to them. Without any immunity to these new illnesses, the Aborigines died in great numbers (Broome, 1982, p. 58).

On the battlefields of imperialism colonists may well have seen famine, malnutrition and disease. But these cannot be viewed in isolation from colonial violence, for they may well be an aftermath to war and dispossession, which render human beings susceptible to illness. As Pearce and Merletti (2006) reported in *The International Journal of Epidemiology*, there is evidence that the medical history of Indigenous populations, including Maori people has been seriously misrepresented:

> It is commonly assumed that this loss of life occurred primarily because of the arrival of infectious diseases to which the Maori had no natural immunity. However, a more careful analysis of the history of colonization throughout the Pacific reveals that the indigenous people mainly suffered major mortality from imported diseases when their land was taken thus disrupting their economic base, food supply and social networks (Pearce & Merletti, 2006, pp. 515-519).

Thus, the underlying premise of immunity as found in exotic disease theory in history is challenged by the impact of colonisation and subsequent alienation, malnutrition and dispossession of Maori lands and waterways through war. It is suggested that this same misconception could apply to the medical history of Australian Indigenous people indicating a need for further research. In its current state, exotic disease theory, I propose, serves an imperial purpose, one that has been used throughout the colonised world as a way of reducing colonising guilt, while at the same time, supporting views of Indigenous inferiority by the attachment of lack of immunity to Indigenous people. Australian historian Alison Palmer alludes to this idea when she writes:

> Colonised peoples were subjected to near annihilation by guns or diseases in a large number of instances – in the Americas, in the Caribbean, in Australia. In countries where exotic disease is perceived as a major cause of depopulation of Indigenous societies imperial powers are then excused of malicious intent (Palmer, 2000, p.191).

Thus, according to Palmer, in the face of irrefutable population decline, a jurisdiction rationale clearly exists for an imperialistic power to engage exotic disease theory as a preferred option to violent colonial militant force. In this way exotic disease is an escutcheon which is beneficial to the colonist by shielding liability on behalf of the imperial power as there is no deliberate intent to harm Indigenous people. Exotic disease is then seen as an act of nature whereby the inferior immunity of Indigenous people is the main problem, and at the same time allowing the imperial power to maintain moral credibility. Palmer states:

> In cases where the destruction of the population was caused by the spread of diseases against the Indigenes who have no immunity, such as smallpox and measles, it has been argued that genocide has not occurred because the deaths were not intended or planned (Palmer, 2000, pp. 36-37).

Ironically it is science, and not history, which is at the basis of exotic disease theory and immunity. The belief that a human being without exposure to a virus or bacteria is more susceptible to that disease than a human being with prior exposure is based on Eurocentric scientific theory (Oxford, 2007, pp. 359-361). Such a theory adds enormous strength to claims made by Australian historians who lack supporting medical evidence. This scientific platform allows writers such as Broome, Reynolds and Windshuttle to claim that "great numbers" of Indigenous people

must have died even though there is little evidence to support the theory. Does exotic disease theory function as a panacea as inferred by Palmer which deflects blame and responsibility away from the imperial coloniser?

Deconstructing exotic disease theory in Western history

Historians have long claimed that immune deficiency was a major factor in Indigenous depopulation. Nearly 60 years ago, Australian historian, Sir Archibald Grenfell Price (1950) informed readers that introduced diseases and immunity were a major cause of Indigenous depopulation, writing that "social diseases wrought much havoc amongst a people which seems to have been free of these scourges and which possessed no immunity" (Price, 1950, p. 119).

Given the atmosphere of violence and war that marked the colonial enterprise these records need to be critically analysed instead of being automatically accepted. Historians seldom acknowledge that such proof may reflect a conflict of interest whereby the colonist would have good reason to nominate disease over violent clashes to explain the disappearance of Indigenous populations that invariably accompanied the usurpation of their lands and waterways.

The provenance of such reports also raise the question of the collaborative acceptance of such evidence at the time of their original making or in the later, usually repeated uses by generations of historians to construct the colonial narrative. For instance, Price relies on secondary sources by using earlier studies by Cleland and Hasluck to support his claims that the main cause of Indigenous depopulation was the fault of Indigenous people; their "vices", "idleness" and "immunity" not indiscriminate "slaughter" (Price, 1950, pp. 117-121). The endurance of this line of reasoning is evident 42 years later when Broome writes "possibly two thirds of deaths" were caused by "disease, malnutrition and alcoholism" while violence only causes "perhaps a twentieth of all deaths" (Broome, 1985, p. 61). Clearly, violence is viewed as a minor problem for Indigenous people.

Broome preserves ethnographic tradition by accepting early colonial testimonies from the frontiers of violent conflict, including memoirs and recollections of "squatters" to support his claims of exotic disease. In turn exotic disease is passed along the ethnographic grapevine from frontier colonist to academic historian; accepted without close medical scrutiny as historical fact in accounts of rapid Indigenous depopulation. Like Price, Broome relies on secondary sources such as Reynolds to make claims about the fate of Indigenous Australians (Broome, 1985, pp. 209-210).

Australian historians also absolve liability from the imperial power by speculating that exotic diseases such as smallpox were not of European origin. Price claims that exotic diseases, including leprosy and smallpox epidemics are introduced by Asian migrants:

> It is interesting that the most potent destroyer of Australian aboriginal life in the moving frontier days should owe its origin not to Europeans but to Asiatics ... the Asiatics also introduced the opium habit and scourges such as leprosy (Price, 1950, pp. 117-121).

Australian historian Judy Campbell maintains the ethnographic tradition with purporting suspicions that "smallpox" was introduced by Macassan traders following smallpox epidemics in Sumatra (Campbell, 2002, pp. 105, 216, 217). If these diseases are indeed of Asian origin then it would be thought that Europeans would have been as vulnerable as Indigenous people because of a lack of prior exposure.

It is rarely considered that endemic diseases pose a threat to European people and it is widely assumed that Australia is supposedly "free of such scourges", yet there is evidence of colonists coming to Australia, who immediately got sick. Ensign Abel Best wrote upon his arrival in Sydney on 28 October 1837, "I had only been in the colony a very short time when I was attacked by a species of cholera which was very prevalent at that time and which few escape who have recently arrived" (Taylor, 1966, pp. 146-147). English colonist, Surgeon Peter Cunningham arrived in the upper Hunter Valley in 1826 and witnessed an "epidemic influenza" which killed local and invader. The medical physician was of the belief that the illness may have originated from hot northerly winds:

> An epidemic influenza carried off a number of the old Europeans some years ago, and also not a few of the aborigines, while many of our younger individuals occasionally feel the effects of it to this day. It appeared at the time, or immediately in the rear, of a hot northern wind, the symptoms being violent headaches, cough, sneezing, and inflamed eyes; with a quick pulse, and other general febrile concomitants (Cunningham, 1966, p. 94).

If these are endemic diseases than according to scientific principles colonists would have been more severely affected than Indigenous people who had prior exposure to the contagion. Cognitive imperialism rejects such conceptualisations, which could be construed as lessening the superior status of the coloniser. Instead, a view of "immunulogically competent Europeans and immunologically naïve" Indigenous people is portrayed. Through exotic disease theory, Eurocentric views of superiority and inferiority are maintained, whereby the coloniser survives and the colonised perish (Anderson, 2005, p. 221).

Exotic disease, ethnographic tradition and consensus

The central premise of Indigenous death predominately caused by exotic disease is seldom disputed. While Broome might attach less weight to violence than Reynolds as a key factor in Indigenous depopulation, the two historians clearly agree that exotic disease was a major cause of depopulation. Reynolds gave a conservative estimate claiming that at least 20,000 Indigenous people were killed in "frontier" conflict in the nineteenth century (Reynolds, 1987, p. 53). Yet Reynold's states "Epidemic diseases were probably more lethal than punitive expeditions" (Reynolds, 1982, p. 125).

Where are the medical reports, treatments, statistics, death certificates or primary sources to substantiate that exotic disease was responsible for the death of more than 20,000 Indigenous people in the nineteenth century? Neither, Broome or Reynolds provided any such evidence in their accounts.

Keith Windshuttle is perhaps the primary contemporary protagonist of exotic disease theory. While he vehemently challenges the impact of colonial violence proposed by historians such as Reynolds, there is no doubt that he supports exotic disease theory and its supposed impact on Indigenous people. In fact Windshuttle is prepared to write off the vast majority of Indigenous populations in Australia, New Zealand and the Pacific Islands when he writes, "The evidence for disease ... as the major cause of depopulation is compelling. The indigenous people had no resistance to the diseases that the British brought with them" (Windshuttle, 2003, pp. 374-375). This is an extraordinary claim considering Windshuttle denounces the medical knowledge of early colonial times, but simultaneously accepts evidence from such records as proof of exotic disease. Furthermore he presents no medical evidence to substantiate this belief and totally ignores any mitigating factors which may undermine Indigenous health such as violence, starvation, poisoning, alienation and dispossession.

Historians such as Reynolds and Windshuttle may disagree over the impact of violent militant imperialism, yet stand united in regard to exotic disease theory which is securely placed in Australian history. Recent academic debate, as seen in the history wars, appears to have done little to breach this consensus with Robert Murray writing an article titled "Disease: The Real Invader" in Australian journal *Quadrant*:

> The frontier conflict historians reviewed in the July-August *Quadrant* do not dispute the big picture – that illness, not settlers' guns and poison, was the big killer. In general, they would not claim that much more than about 10 per cent, on average, of indigenous inhabitants died in each region in conflict with white newcomers in the short period of a few years when violent frontier conditions applied (Murray, 2003, pp. 17-21).

According to this colonial narrative, Indigenous people have no prior exposure to "illness", including smallpox, and this is why they perish and colonists survive. Campbell and economic historian Noel Butlin promote similar viewpoints claiming that the population of the First Fleet were protected against smallpox. Campbell suggests "... by the time they came to Australia, they had control over it ... Most were immune after recovering from it in childhood or having been variolated" (Campbell, 2002, ix). Butlin also supports this view when he writes, "... the one virus from which they were protected was smallpox" (Butlin, 1983, p. 24).

Australian historian Malcolm Prentis (2008) follows suit in a recent history publication in which he states "disease was by far the biggest killer of Aboriginal people"; a claim based on the works of Butlin (1983) and Campbell (2003). Again, secondary ethnographic sources form the basis of opinion. And finally, Murray sums up the colonial narrative:

> When smallpox is endemic, as in much of Europe and Asia, people build up over time a fair resistance to it, including by catching a minor version in childhood. This is one reason why no British colonist caught smallpox in 1789, whereas the Aborigines did (Murray, 2003, pp. 17-21).

These writers fail to acknowledge the reality of smallpox major variole by suggesting this deadly virus would not have imposed a grave threat to the First Fleet population. Smallpox was an indiscriminate slayer of human life throughout the eighteenth and nineteenth centuries regardless of status, class, race, colour, denomination or creed. Edward Jenner invented a supposed smallpox vaccination in 1796, but this was not available to the First Fleet population. And even if it was available the prophylactic properties of the vaccine are highly disputable. In the 1830s grave doubts were expressed by colonists in other British colonies, including South Africa, who held grave fears towards not only smallpox, but also the vaccination and its effectiveness. Keith Brown writes:

> The vaccine imported from England and Mauritius "had never once succeeded." They bitterly complained that several native-born youths who were supposed to have been successfully vaccinated in the colony, contracted smallpox soon after their arrival in Europe (Brown, 1937, pp. 28-29).

Has anyone investigated if any of the First Fleet population or early British colonists returned to England and died from smallpox? It is suggested this

maybe a worthwhile exercise as far as determining if indeed the colonists are protected from this universal killer of human beings. Countless thousands of Europeans, including many English people died from smallpox during the eighteenth and nineteenth centuries. In fact smallpox wrought havoc among global populations until it was declared eradicated in 1978 by the World Health Organisation (WHO, 2001).

The history waters tend to become even further muddied because as stated there is rarely any precision about how many people were killed by disease and even which diseases are responsible or comparative numbers in colonial violence. The alleged smallpox epidemic which strangely only strikes Indigenous people at Sydney in 1789 is arguably a gross exaggeration whereby historians inform readers based on secondary sources that fifty percent of the Indigenous population perished. This figure is meaningless because the total population is unknown; in other words half of what number? (Prentis, 2008, pp. 67-68). Furthermore this speculative data gives the impression that vast numbers of Indigenous people must have died when this may not be the case.

According to First Fleet officials such as David Collins there were "many who recovered from it" and only three Indigenous deaths are witnessed at the penal colony (Collins, 1975, pp. 496, 497). In fact, Governor Arthur Phillip sent an apologetic letter to Sir Joseph Banks in England because he could not supply a specimen of an Indigenous head as the "natives burnt the bodies" of those who died from illness countering any claims Indigenous people deserted their families and fled (Phillip, 1787-1792, 1794-1796).

The lack of debate around exotic disease theory stands in stark contrast to the ongoing inter-historian critique of methodologies and sources in relation to the violence component of depopulation theory. For example, historian Bain Atwood is critical of Windshuttle for his lack of supporting evidence, "research process" and dependence on "assumptions" regarding violence and depopulation. Yet he does not seem to admonish assumptions made of exotic disease, as found in secondary sources such as Reynolds and Broome, with the same intensity.

Attwood supports the violent component of depopulation theory proposed by Reynolds, ultimately joining the exotic disease accord when he writes "there can be no question that introduced diseases were the main killers of Indigenous people. This was made clear in early academic studies" (Atwood, 2005, pp. 144-145). Yet a few paragraphs later Attwood states that knowledge of the "patterns of disease ... still remains quite sketchy" (Attwood, 2005, pp. 144-145). What is clear is that ethnographic tradition is being preserved unchallenged. Australian historians share a commonality that exotic diseases were the major cause of depopulation. A state of gratuitous concurrence is reached with exotic disease by historians who are otherwise diametrically opposed over violence. Where is the evidence of exotic disease?

This consensus by historians, who use each other and each other's citing of the same few sources to make broad claims about Indigenous deaths needs to be challenged. It seems evident in the writing of Australian academic history, and specifically Aboriginal medical history, that sound medical verification or proof is not a requirement, but it is acceptable practice to make claims about immunity as a key factor in Indigenous depopulation based on secondary sources.

Part two: A history of racial difference: Origins of exotic disease theory

Cognitive imperialism is defined as a form of psychological dominance whereby the knowledge of the imperial power is imposed onto the colonised group. From an Indigenous perspective, exotic disease theory can be deconstructed as an integral component of cognitive imperialism whose main purpose is to reinforce notions of imperial superiority and Indigenous inferiority. Without a subordinate group to impose their superior values and beliefs the imperial power has no need for a rationale which justifies not only the use of military force, but also cultural destruction and dispossession.

In 1788, Governor Arthur Phillip carried a mandate from the imperial power to civilise Indigenous people by imposing their own knowledge, values and beliefs which is ultimately used to justify military force and subsequent dominance over Indigenous Australians (Gilchrist & Murray, 1971, pp. 7-9). From early colonial institutions such as the Native Institution at Parramatta under Macquarie's rule in 1814, it is proposed that there has been a sustained effort by the imperial power to subjugate Indigenous people to Eurocentric values and knowledge.

It is emphasised that while Indigenous people have traditionally been excluded from the "research academy" they are systematically encouraged to assimilate to the values and beliefs of the imperial power. Values, beliefs, perceptions and ideals of the imperial power are assimilated into the conscience of the subordinate group through imperial education systems. It can be argued that cognitive imperialism underpins the values and beliefs found in exotic disease theory.

The Indigenous person learns from a Eurocentric knowledge base that they are more susceptible to exotic disease than the coloniser. The dominant view of the coloniser reinforces ethnocentric beliefs of superiority by emphasising the weak immunity of Indigenous people. This fundamental relationship between the coloniser and colonised is a key to understanding why exotic disease theory has been embedded in ethnographic tradition, without the need for solid medical proof or Indigenous consultation (Battiste, 1996).

The endurance of exotic disease theory over many years by several generations of non-Indigenous historians is reflective of greater inequities existing in Australian colonial society. The Indigenous "voice" is seldom heard and colonial education systems, including universities have shown a tradition of embedding a Eurocentric knowledge base, exclusive of Indigenous consultation. Rigney identifies the exclusive nature and history of academic research in Australia. Indigenous people have been exiled from such institutions until very recent times:

> The cultural assumptions throughout the dominant epistemologies in Australia are oblivious of Indigenous traditions and concerns. The research academy and its epistemologies have been constructed essentially for and by non-Indigenous Australians. Indigenous Australians have been excluded from all facets of research (Rigney, 1997, p. 8).

Within the "research academy" it is evident that despite its meagre show of proof exotic disease theory has not been seriously questioned. It proceeds as a cultural assumption of cognitive imperialism which is delivered through education systems by supposed experts and has become cliché in many historical accounts. Battiste describes this channel of cognitive imperialist knowledge as a "Eurocentric canon" which delivers the values and beliefs of the imperial power (Battiste, 1996, p. 225). Exotic disease theory is propelled from a Eurocentric history canon which is based on scientific principles without scientific or medical evidence and in reality is little more than vague ethnographic historical interpretation. Smith outlines the construction process of Eurocentric knowledge when she writes:

> This collective memory of imperialism has been perpetuated through the ways in which knowledge about Indigenous peoples was collected, classified and then represented in various ways back to the West, back to those who have been colonized (Smith, 1999, pp. 1-2).

The "collective memory of imperialism" referred to by Smith is not just in the past but lives with the present. Throughout the colonial hegemony the primary ethnographic records evolve into secondary ethnographic records. However the "collective memory of imperialism" does not rest here, for these secondary sources are then utilised by successive generations of historians who then produce tertiary ethnographic records which form an established imperial pathway of ethnographic tradition. Rigney identifies the essence of ethnographic data and construction when he writes, "Explorers, medical practitioners, intellectuals, travellers and voyeurs who observed from a distance, all played a role in the scientific scrutiny of Indigenous peoples" (Rigney, 1997, p. 1).

The laissez faire approach by historians in relation to exotic disease theory and Indigenous Australians which is currently in situ has a high chance of leading to false conclusions. Non-medically minded historians are seen as experts on the medical history of Indigenous peoples and present evidence of exotic disease that would not be accepted by any principles of modern science. As Battiste states, "Given the assumed normality of the dominators' values and identity, the dominators construct the differences of the dominated as inferior and negative" (Battiste, 1996, p. 228).

Similar opinion is found in African-American studies. Rutledge argues that science has been used for many years to distinguish the superior qualities of the coloniser:

> Science has often been used as a justification to propose, project, and enact racist social policies. The philosophical and political underpinnings of ideas associated with racial superiority and inferiority were first given scientific legitimacy and credence with the publication of Charles Darwin's (1859) revolutionary book, The Origin of Species (Rutledge, 1995, pp. 243-252).

If exotic disease theories are accepted without questioning, it is easy to explain why alleged smallpox epidemics only impacted on Indigenous people. The mantle of cognitive imperialism assumes ownership and control over all things superior including disease and immunity. As stated earlier, it rarely considered that colonists are in danger from endemic disease. Most importantly, it is from this imperial knowledge base that Indigenous people learn that their ancestors died from disease because they had inferior immune systems to the coloniser. Thus, notions of inferiority are also reinforced in the Indigenous psyche.

The big mistake for Indigenous researchers is that like their non-Indigenous counterparts they gullibly accept the philosophy and indoctrinations of exotic disease theory and carry on ethnographic tradition without close scrutiny. Rigney warns of the dangers of internalising "colonial hegemony" whereby the Indigenous researcher forsakes the knowledge and beliefs of their traditional culture and adopts the knowledge, beliefs and values of the coloniser without close scrutiny. Furthermore, Indigenous researchers need to be extra vigilant because they are "accountable to not only their institutions, but also their communities" (Rigney, 1997, p. 7).

Indigenous medical history and refined methodology

A more sophisticated approach to Indigenous medical history is needed than is currently evident, which

pays greater attention to the epidemiology of disease. The diagnosis, causes, distribution and control of diseases require careful evaluation and ethnographic records should be viewed with a discerning eye from a medical perspective. Experts in medical history like Cox (1993) suggest that writing an accurate medical history stipulates a solid medical data base as opposed to vague ethnographic assessment and non-medical interpretation.

Cox advises that writing a quality medical history necessitates consultation of a wide range of potential sources of evidence. These sources range from forensic evidence such as osteological assessment of skeletal remains to medical records including death certificates, which provide names, age, date and cause of death signed by a medical officer (Cox, 1993, pp. 71-79). If scientific principles constitute a basis for historical interpretation than the rules of science should be applied because at it stands exotic disease is little more than an enduring ethnographic consensus without support medical data or even knowing if the disease reports mentioned in early colonial despatches are indeed accurate.

A diagnosis made by eighteenth and nineteenth century medical physicians based on signs and symptoms is insufficient to quantify identification of a virus or bacteria. In fact, it was not until research conducted by late nineteenth century scientists, such as Martinus Beijerinck and Dmitri Ivanovsky, that virology emerged as a medical science. And another 40 years would pass, before the advent of electron microscopes and fine filament glass lenses, which allowed medical scientists to make their first observations and differentiations of the virus world (Chasin, 2005, p. 1).

According to a medical criteria set by the World Health Organisation, the First Fleet doctors would have lacked adequate technology to make an accurate diagnosis of smallpox (WHO, 2002). Given the state of medical training, knowledge and technology at the time, physicians such as Surgeon John White relied on external observation of a patient's signs and symptoms. A definite, differential diagnosis under such medical limitations is extremely difficult (White, 1971, pp. 122-123).

These deficiencies in diagnostic technology are applicable to any diseases used in Australian history, whereby a eighteenth or nineteenth century diagnosis has been solely based on signs and symptoms. In fact, the same fundamental flaw is applicable to any Western histories which make definitive conclusions about the exactness of a virus or bacterial infection based on anecdotal evidence before the 1930s. Finally, one more unfortunate consideration which needs to be made when evaluating disease on violent colonial frontiers is the use of poisons which could easily be mistaken for disease.

Conclusion

This paper does not dismiss the underlying principles of science which intimate that immunity and disease could be a significant factor in human depopulation. This paper does not deny that disease was not a significant factor in Indigenous depopulation in the nineteenth century, as it was in colonial society, but the epidemiology remains highly questionable. What it does question is the use of exotic disease theory in historical accounts as an explanation of Indigenous depopulation without sound medical evidence. Exotic disease theory is in need of a more refined methodological approach. I would suggest invasion should be researched in the genre of military history and exotic disease theory as medical history. There is a great need for Indigenous Australians to take up the challenge to write history that challenges the assumptions and presumptions of non-Indigenous historians and the use of a regional or community history focus is particularly relevant in this type of study. Indigenous community and family memories are long.

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References

Anderson, W. (2005). *The cultivation of whiteness, science, health and racial destiny in Australia*. Carlton, VIC: Melbourne University Press.

Attwood, B. (2005). *Telling the truth about Aboriginal history*. Crows Nest, NSW: Allen and Unwin.

Battiste, M. (1996). Indigenous knowledge and research: Enabling the Autumn seed. In *Contemporary issues in Aboriginal and Torres Strait Islander studies 6: Proceedings of the Sixth National Conference, Jumbunna CAISER*. Sydney, NSW: University of Technology Sydney.

Broome, R. (1985). *Aboriginal Australians, black response to white dominance 1788-1980* (2nd ed.). North Sydney, NSW: Allen and Unwin.

Butlin, N. (1983). *Our original aggression*. Sydney, NSW: Allen and Unwin.

Chasin, S. (2005). *The discovery of viruses from science and its times*. Retrieved 22 May 2009, from http://www.bookrags.com/research/the-discovery-of-viruses-scit-0512/.

Collins, D. (1975). *An account of the English colony of New South Wales, with Remarks on the dispositions, customs, manners, etc, of the native Inhabitants of that country*). Sydney, NSW: Published in association with the Royal Australian Historical Society by A. H. & A. W. Reed.

Cox, M. (1993). *Epidemics and skeletal populations: Problems and limitations*. London: University of London.

Cunningham, P. (1966). *Two years in the colony of New South Wales*. Sydney, NSW: Royal Australian Historical Society and Angus and Robertson.

Gilchrist, J. T., & Murray, W. J. (1971). *Eye witness select documents from Australia's Past*. Adelaide, SA: Rigby Limited.

Murray, R. (2003). Disease: The real invader. *Quadrant Magazine*, *47*(10). Retrieved 22 May 2009, from www.accessmylibrary.com/coms2/summary_0286-19546059_ITM.

Oxford. (2007). *Concise Colour Medical Dictionary* (4th ed.). Oxford: Oxford University Press.

Palmer, A. (2000). *Colonial genocide*. Adelaide, SA: Crawford House Publishing,

Pearce, N., & Merletti, F. (2006). Complexity, simplicity and epidemiology. *The International Journal of Epidemiology*, *35*(3), 423-426.

Phillip, A. (1787-1792, 1794-1796). *Letters, with related papers and journal extract, received by Banks from A. Phillip, Series 37.15*. Sydney, NSW: State Library of New South Wales.

Prentis, M. (2008). *A concise companion to Aboriginal history*. Dural Delivery Centre, NSW: Rosenburg Publishing.

Price, A. G. (1950). *White settlers and native peoples, A historical study of racial contacts between English-speaking whites and Aboriginal peoples in the United States, Australia and New Zealand*. Melbourne, VIC: University Press Cambridge.

Reynolds, H. (1982). *The other side of the frontier*. Ringwood, VIC: Penguin Books.

Reynolds, H. (1987). *Frontier*. Sydney, NSW: Penguin Books.

Rigney, L. I. (1997, July). *Internationalisation of an anti-cultural critique of research methodology and its principles*. Paper presented to Higher Education Research and Development Society of Australasia Annual International Conference, Adelaide, South Australia.

Rutledge, D. (1995). Social Darwinism, scientific racism and the metaphysics of race. *Journal of Negro Education*, *64*(3), 243-252.

Smith, L. T. (1999). *Decolonising methodologies: Research and Indigenous people*. Dunedin, New Zealand: University of Otago Press.

Taylor, N. M. (1966). *The journal of Ensign Best 1837-1843*. A Turnbull Library Monograph. New Zealand: Government Printer.

White, J. (1971). *Journal of a voyage in New South Wales*. New York, NY: Arno Press & The New York Times.

Windshuttle, K. (2003). *The fabrication of Australian history*. Sydney, NSW: Macleay Press.

World Health Organisation (WHO). (2001). *Fact sheet on smallpox*. Retrieved 22 May 2009, from, www.who.int/emc/diseases/smallpox/factsheet.html -2001.

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