

Darwinism and the nature of Māori

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Abstract: The Darwinian concept of ‘survival of the fittest’ has been used historically to explain and justify status inequalities between different ethnic populations; that the poor socio-economic status of Māori, for example, is due to the biological nature of Māori themselves. Recent research on ethnicity, genes and behaviour, especially the so-called ‘warrior gene’ and its apparent link to violence and Māori, has raised concerns that these discredited theories may be resurrected in a modern genetic guise. Paradoxically, Darwinian reasoning itself can be used to challenge such political interpretations of evolutionary theory. A broader perspective on Māori evolutionary history would emphasise sociality, entrepreneurship and the significance of environment, as well as indicating the socio-political costs and benefits of further genetic research.

Keywords: behaviour; Darwinism; evolutionary theory; genetics; Māori history; Māori violence; warrior genes.

Introduction

Charles Darwin spent a month in New Zealand (December, 1835) during *HMS Beagle*’s five-year voyage around the world, and he was not impressed with what he saw. While he compared the indigenous New Zealanders unfavourably with their fellow Polynesians in Tahiti, his greatest opprobrium was reserved for the “most worthless character” of many of the country’s newly arrived Europeans, “[whose] whole population is addicted to drunkenness & all kinds of vice” (Darwin & Keynes, 1988, p. 384). These Europeans, “the very refuse of society” according to Darwin, were a minority in New Zealand at the time. Fast forward 170-or-so years, however, and it is Māori who are a minority, and it is they who appear to be suffering most from the socially deleterious ‘vices’ identified by Darwin.

The reasons why Māori appear at the negative end of many modern social statistics (health, education, crime) are not obvious; as biochemist and Māori scholar Raumatī Hook notes in relation to the high rates of violent crime among Māori: “Some blame poverty and deprivation while others believe it stems from a century and a half of colonization” (2009, p. 1). However, Hook identifies another, more pernicious, explanation for the disparity between Māori and Pākehā (Europeans) in convictions for acts of violence: that this is due to the biological nature of Māori themselves. And explanations that emphasise ‘nature’ (or genes) over ‘nurture’ (or environment) as the root cause of dysfunctional social behaviour are inexorably linked to the name of the Englishman who spent Christmas 1835 in New Zealand’s Bay of Islands, Charles Darwin.

A quarter of a century after his brief visit to New Zealand, Darwin published his ground-breaking theory of evolution by natural selection. Dubbed ‘Darwin’s dangerous idea’ (e.g. Dennett, 1995), this theory immediately posed a challenge to religious explanations for the origin and meaning of life. Less obviously (at least to modern minds), Darwinism also threatened the established political order. As revolutionaries such as Karl Marx were quick to point out, it fatally weakened the belief that the social hierarchy, of the rich at the top and the poor at the bottom, had been fixed or ordained by God (Singer, 1999). However, Darwinism could also be interpreted in a manner that ran directly contrary to the beliefs of Marx and of other (less extreme) social reformers; that is, merely replacing a God-given social order with

one that was natural. According to this interpretation, the rich were rich and the poor were poor because the former were more fit to survive in the social struggle for existence.

The relevance to Māori and other indigenous peoples came when these social Darwinian concepts were extended to different human populations, as presaged in the sub-title of Darwin's (in)famous book *On the Origin of Species: The preservation of favoured races in the struggle for life* (1859). From this perspective, the European domination of the world in the 19th century could be explained in simple Darwinian terms: the peoples of Europe were the fittest or most favoured of the human races, in competition against which the less fit, less favoured, races were doomed to failure and eventual extinction. According to Darwin, contemporary Māori shared a similar view: "The New Zealander seems conscious of this...for he compares his future fate with that of the native rat now almost exterminated by the European rat" (Darwin, 1901, p. 297). Meanwhile, back in Europe, it seemed a short (but obvious) step to a belief in natural biological racial superiority and, ultimately, to the Master Race concept of Hitler's National Socialism.

But surely any such repugnant socio-biological ideas died along with the Nazis? And what possible relevance have these discredited political interpretations of Darwinian theory to do with the social concerns and aspirations of modern Māori? A great deal, it would seem. Recent genetic research has, apparently, indicated a link between violence and criminality and the expression of a 'warrior gene' thought to be prevalent in the Māori population. In the words of Raumati Hook (2009):

This neo-Darwinian approach to human behaviour claims that because Māori evolved in a high-risk environment, survival favoured those mutations that contributed to his survival and hence the frequency of the 'warrior' gene in the Māori population became enhanced over those found in other races. (p. 1)

According to this 'warrior gene' hypothesis, Māori would appear inherently more violent than other ethnic groups. Moreover, Darwinian theory here provides a retrospective explanation for the high rates of violence in modern Māori communities; that it is the result, not of deprived social conditions, but rather of past natural selection for aggressive behaviour in an ancestral environment. While the 'warrior gene' hypothesis is a recent idea, the apparent implications of these concepts are not; that is, they appear remarkably similar to older social Darwinian ideas, resurrected in modern genetic guise.

Historical precedent highlights the manner in which simplistic evolutionary arguments can be used to answer complex social questions; that violence (or poverty or ill health) among indigenous peoples can be attributed simply to genes, thereby ignoring the socially deleterious consequences of impoverishment, deprivation or dispossession from land. Politically, however, Darwin's dangerous idea blends scientific evidence with philosophical argument. It does not follow that this is necessarily inimitable to the goals of social justice.

This discussion will assess Darwinian theory in relation to the concept of a violent Māori 'nature' and advance the thesis that, paradoxically, evolutionary theory can be used to counter (supposed) 'Darwinian' arguments about Māori and violence. A modern Darwinian perspective acknowledges the complexity of gene-environment interaction; that it is not a question of nature versus nurture, but rather nature via nurture (see, for example, Ridley, 2003). In this case, a fully developed evolutionary account of Māori, genes and behaviour would emphasise, not dismiss, the effects of environment. Thus, far from being a menace to Māori aspirations, Darwinism may be used to bolster political arguments for social justice. Of course, given the dubious history of social Darwinism, any political discussion of human evolution must proceed cautiously, most especially when, as here, it concerns possible racial differences in genes or behaviour. An appropriate context (and sufficient background), therefore, must first be provided for this discussion's thesis to carry weight.

Darwinian politics

Human populations or races differ physically, in skin colour, hair texture or facial features. One of the most contentious issues in human biology (indeed, perhaps in science and politics generally) is whether such differences go deeper than these observable physical characteristics—for example, to behaviour, or to cognitive abilities (e.g. Diamond, 2005; Flynn, 2008; Herrnstein & Murray, 1994; Kohn, 1995). A ‘consensus opinion’ (Kitcher, 2007; Mallon, 2006) holds that no meaningful differences exist between races, with those few researchers openly challenging this view (e.g. Rushton, 1997) subject to severe censure (e.g. Barash, 1995; Hacking, 2005). The ‘warrior gene’ hypothesis, premised on genetic and behavioural differences between Māori and non-Māori, presses directly on this scientific and political raw nerve.

In the social and political arena, moreover, Darwinism has come to be associated with right-wing or conservative beliefs. For example, that the present social order is a natural and unchangeable consequence of human evolutionary history. The understandable reaction of many of those concerned with social justice and equality, therefore, has been to simply ignore or reject any claims that Darwinism is politically relevant to humans (e.g. Rose & Rose, 2000). Unfortunately, this not only implicitly accepts that right-wing interpretations of Darwinism are correct, but it also allows those who hold reactionary political beliefs to claim that they have evolutionary science on their side. Given the recent explosion in human genetic research it is important that political interpretations of Darwinian theory are faced directly.

How does this relate to the apparent prevalence among Māori of a particular gene linked to violent behaviour? Any plausible evolutionary story to account for the high frequencies of a ‘warrior gene’ would assume that it conferred a selective advantage on ancestral Māori; adaptationist reasoning, for example, would suggest that this reflects a genetic adaptation to a violent or war-like ancestral environment. This evolutionary account becomes politically relevant if used to explain violence in modern Māori communities. For example, in the possible claim that, because Māori are by nature more violent than other ethnic groups, there appears little that can be done politically to ameliorate the socially harmful consequences. As captured in the title of Hook’s (2009) article, violence becomes part of “the disease of being Māori”.

However, this is not the only scientifically plausible account of Māori evolutionary history. We can also use adaptationist reasoning to ask: what environmental challenges would ancestral Māori have faced—and what genetic or cultural adaptations must have occurred—in the course of Polynesian expansion across the Pacific? Or more simply: what sort of ‘nature’ would these successful colonisers of the Pacific environment have had? They must have been resourceful, self-disciplined, open to new experience, courageous, adventurous and so on but, above all, they must have been intensely cooperative. Put another way, ancestral Māori simply cannot have been indiscriminately or innately violent or anti-social and we can be sure that the original Māori migrants to New Zealand were not selfishly aggressive individuals. How? Because they would never have succeeded if they had been. Certainly, along with all other human groups, ancestral Māori had the potential for violence, and, as the Māori warrior tradition indicates, this potential was often realized. What is overlooked here, however, is the cooperative underpinnings of human societies, even, or perhaps especially, warrior societies. (The British seamen aboard Darwin’s *Beagle* were also heirs to a warrior tradition, that of the Anglo-Saxons, Vikings and Normans. The violent warfare waged during the course of British history, however, is never ascribed to an aggressive ‘warrior gene’ or an inherently violent biological nature, peculiar to Britons. Indeed, apologists for British empire building would emphasise warfare as a means to peace, to the so-called ‘Pax Britannica’.)

Of course, in common with many attempts to reconstruct the course of human evolution, this account of Polynesian pre-history is speculative. And how would this emphasis on the sociality of ancestral Māori account for the apparent prevalence of a violence-linked gene among modern Māori? In the relevant genetic study (Lea & Chambers, 2007), the highest frequencies of the so-called ‘warrior gene’ were not found among Māori but, rather, among Chinese. In New Zealand, the Chinese are hardly a group stereotypically viewed as particularly violent. So what sort of convoluted evolutionary tale must be cobbled together to explain why Chinese have such high frequencies of the ‘warrior gene’? Indeed, does this not simply undermine the credibility of any evolutionary account? Suffice to say, there is no simple one-to-one mapping between gene and behaviour, with the so-called warrior gene being linked with a number of behaviours, including violence, risk-taking and alcohol dependence (Hook, 2009; Lea & Chambers, 2007). As suggested above, ancestral Polynesians must have been adventurous, more specifically, those spear-heading each new migration would likely have been psychologically less risk-averse than those choosing to stay behind. In an island-colonising ancestral environment, adventurous and/or risk-taking traits may often have proven advantageous and have been naturally selected for. In an economically deprived modern urban environment, however, these self-same characteristics may prove disadvantageous, especially if they are expressed in drug-taking, alcohol abuse or criminal behaviour. As this indicates, the social consequences of such traits, if any exist, are inexorably linked to environment.

Thus, even if the ‘warrior gene’ has an influence on behaviour, this is context dependent. In one environment, this genetic influence may have different consequences than in another; for example, in a commercial setting, stereotypically associated with Chinese in New Zealand, versus the economically deprived surroundings stereotypically associated with many Māori. (Indeed, if the original genetic investigations had focused on explaining the high frequencies of this gene among Chinese, it is unlikely that the sobriquet ‘warrior gene’ would have been used.) To put this into a political context, any argument that Māori are inherently violent, or that ameliorative social policies simply will not work, can be directly challenged by Darwinian reasoning. And indeed, whether the negative social outcomes of many modern Māori are the result solely of environment, or of a combination of environmental and genetic factors, if our political goal is to remedy this, then improving the social and economic conditions of Māori remains the priority. Far from being only a cause of alarm or disquiet, therefore, Darwinism can be used as an additional political weapon on behalf of oppressed or marginalized groups, such as Māori. Why, though, is the reverse often assumed?

Darwin and tales of Tangata Whenua (People of the Land)

Māori have had a long association with the founder of modern evolutionary theory, Charles Darwin. We can trace aspects of the current ‘warrior gene’ controversy to his *Beagle* diary, where, for example, he comments: “I should think in no part of the world a more war-like race of inhabitants could be found than the [Māori] New Zealanders” (Darwin & Keynes, 1988, pp. 382–383). Later, in *The descent of man* (1871), Darwin used the alarming decline in the contemporary Māori population to argue that changed conditions of life (climatic change or increased competition) would affect humans in a manner analogous to that of other animal species. For 19th century Māori, such changed conditions included exposure to European diseases and socially harmful ‘vices’, such as alcohol and tobacco. These factors, in Darwin’s view, would eventually lead to the extinction of the Māori people. Contemporary Pākehā New Zealanders were of the like opinion that “The Māori [race] has lost heart and abandoned hope...It is sick unto death, and it is already potentially dead” (King, 2003, p. 257).

Of course, as the eventual revival of the Māori population and the on-going Māori cultural renaissance clearly demonstrates, Darwin and his contemporaries were wrong about the fate of Tangata Whenua. Nevertheless, this illustrates one strand of historical reporting of Māori,

in which the focus was on social “decadence” (as Darwin termed it): ill-health, high mortality or loss of cultural cohesion. As some commentators have pointed out (e.g. Chant, 2009), this particular bias continues today. Māori are often of interest to the mainstream media, for example, in relation to the same negative issues highlighted by Darwin—violence or alcohol abuse or social dysfunction. Given the generally pessimistic aspect of this kind of historical discussion, and the seemingly negative slant of much popular modern reporting of Māori affairs, we should examine carefully the sources of information about a subject as controversial as the posited ‘warrior gene’. It is instructive, therefore, to look at how the ‘warrior gene’ issue has been presented in the news media. According to a recent newswire account, neo-Darwinian researchers have expressed “their radical belief that Māori were genetically wired to commit acts of brutality” (MacLean, 2009). This news story continues by reporting how this belief has since been “debunked by science”, that is, by Raumatī Hook’s (2009) analysis. Of course, that such a belief is incorrect is equally obvious to non-scientific observers. The simple fact that the majority of Māori are not criminally violent belies any claim that they are ‘genetically wired’ for aggression. And indeed, the historical example of the Parihaka movement, the non-violent Māori resistance to European land confiscations in the Taranaki region (Tohu Kakahi, 2009), makes the same point. Such a movement would be unlikely for a people who were genetically programmed to act violently.

These neo-Darwinian beliefs are clearly ludicrous, and we must ask, who are these researchers, making such absurd (and, arguably, unethical) claims? MacLean’s (2009) news article, released by Australian Associated Press, emphasises the controversy but (tellingly) not the details. Subsequent media reports, though, do name names: “Three years ago, researchers Rod Lea and Geoffrey Chambers said high criminality among Māori was due to the monoamine oxidase, or ‘warrior’, gene” (Chapman, 2009; Scientist debunks ‘warrior gene’, 2009). However, given the media’s apparent tendency towards sensationalism and over-simplification, should we not be initially wary of this account? Most especially as it concerns popular media reporting of Māori and violence. This caution appears well founded when we examine statements given by the epidemiologists at the centre of the controversy, Rod Lea and Geoffrey Chambers. In a paper in the *New Zealand Medical Journal*, Lea and Chambers (2007) claim that much of the controversy surrounding media reports of a ‘warrior gene’, linked to risk-taking, aggression and criminality in Māori, “was unjustified because it stemmed from a combination of misquotes and misunderstandings printed in the original article released by the Australian Press Association” (p. 1).

In their paper, Lea and Chambers indicate that their research did not involve investigations of aggression traits in Māori or other ethnic populations. Rather, their stated concern was with the health impacts of tobacco and alcohol dependence and, specifically, with the possible influence of genetic factors on tobacco and alcohol use, and how this may relate to the design of more effective treatment regimes. How, then, has this benign-seeming area of research become linked with neo-Darwinian (and with genetic determinist) beliefs about the inherently violent nature of Māori?

Genes and behaviour

Where does the association between Māori and the so-called ‘warrior gene’ originate? In brief, certain genes, monoamine oxidases (MAOs), have been linked to various behaviours, “ranging from anxiety and panic disorder to aggression and violence” (Hook, 2009, p. 2). Due to the apparent link with aggressive behaviour, a form of these MAO genes, MAO-A, was dubbed the ‘warrior gene’ by a scientific journalist who, according to Hook, “was speaking not so much as a scientist, but as a populariser of dry-as-dust science for the masses” (Hook, 2009, p. 2). The term ‘warrior gene’, therefore, is non-scientific shorthand for (an aspect of) the complex genetic processes that may influence a range of behaviours, including aggression. In Hook’s view, ‘warrior gene’ is inappropriate because the exact nature of different forms of

MAOs, and the relationships between these and aggressive behaviour, remain unclear. Nevertheless, because MAO-A has also been associated with tobacco and alcohol dependence, it is of interest to epidemiologists.

With respect to gene-frequency variation between ethnic sub-populations in New Zealand, Lea and Chambers (2007) report a frequency of the relevant form of MAO-A among Māori males that is almost twice that of Europeans. They also note, but do not address, the even higher frequencies among Chinese research subjects. Given the apparent higher frequency among Māori, they ask: “Can this information be utilised for developing more appropriate treatments (e.g. smoking and drinking cessation) and lead to better health outcomes for Māori?” (p. 3). At this point, it would appear that the ensuing controversy was misplaced. That is, that Lea and Chambers’ interest in the ethnic variation of this particular gene, and the possible health consequences seems analogous to ethnic differences such as susceptibility to solar melanoma; to the fact that paler skinned Europeans are more likely to develop skin cancer. In either case, taking ethnic variation into account appears merely sensible.

Perhaps unwisely, Lea and Chambers (2007) adopt the term ‘warrior gene’ in their discussion and in providing an evolutionary explanation for the apparent higher frequency of the relevant alleles in Māori, they suggest:

[T]he MAO-A gene may have conferred some selective advantage during the canoe voyages and inter-tribal wars that occurred during the Polynesian migrations and may have influenced the development of a substantial and sophisticated culture in Aotearoa (New Zealand). (pp. 3–4)

While Lea and Chambers deny that their self-styled ‘warrior gene hypothesis’ provides scientific support for biological explanations of anti-social behaviour, it does imply that Māori have evolved in a manner that makes them genetically (and behaviourally) different from Pākehā New Zealanders. It is here, with the further implication that Māori are in some way inherently or innately more violent than non-Māori, that the concerns raised by Hook appear most pertinent. And it is also here that we may provide an alternative Darwinian approach to evolved genetic difference.

Māori and Pākehā: genes and germs

We can ask a basic question: are Māori genetically different from non-Māori? To the extent that genes influence physical development, skin pigmentation, bone structure, nose shape and so on, the answer is obviously ‘yes’, although this must be qualified by the fact there has been much genetic mixing between Māori and non-Māori over the last 200 or so years. Plausible evolutionary stories can, of course, be provided to explain the physical variation between Māori and other ethnic groups; that the difference in skin pigmentation, say, is the result of different levels of solar radiation in each group’s ancestral environment. One obvious consequence of this particular physical difference is the enhanced susceptibility of many Pākehā (whose ancestral environment was the less sunny northern latitudes of Europe) to melanoma.

However, a far more significant genetic difference between Māori and Pākehā was evident (if not clearly understood) in Darwin’s time—the susceptibility of Māori to European diseases. Why was this so? According to bio-geographer Jared Diamond (2005), the major cause of death for Europeans for the last several thousand years was infectious diseases, endemic in densely populated societies. Thus there has been strong selective pressure for genetic changes in body chemistry to increase immunity to disease in European populations, but not in less dense indigenous populations, such as in pre-contact New Zealand. The effects of these basic genetic differences were catastrophic for indigenous peoples. Diamond, for example,

estimates that perhaps 90 percent of the indigenous population of America was wiped out by diseases introduced from Europe, considerably ‘facilitating’ subsequent European conquest and colonisation. Similarly, the horrendous death toll from influenza in Samoa in 1918, in which over 20 percent of the population succumbed within months, illustrates the devastating impact of introduced disease on those with no evolved immunity (Influenza hits Samoa, 2009).

In New Zealand, according to Darwin, new diseases were one of the main causes of the “notorious” decline in the Māori population in the 19th century. He quotes estimates of an almost 20 percent decrease in the decade before 1858, and a further 33 percent fall in the Māori population in the following 10 or so years (1901, p. 286–288). The social dislocation wrought by this rapid population decrease must have been equally devastating, by analogy with the better reported influenza pandemic in Samoa, those most susceptible to these diseases were Kaumatua, tribal elders whose experience and leadership was more likely to have been lost at precisely the time it was most needed. This, in turn, suggests that a good starting point for any ‘genetic’ explanation for observed social inequalities between Māori and non-Māori in modern New Zealand should be with the historical consequences of evolved resistance to disease. Initially, however, this may seem an odd argument to make, that is, if we ask, “Why are rates of crime (or poverty or ill-health) higher in Māori communities?”, the answer, “Because pre-contact Māori had no evolved resistance to European diseases” appears, at best, only marginally relevant. To justify this position, therefore, we must turn to the thesis presented in Jared Diamond’s Pulitzer prize-winning book *Guns, germs and steel* (2005).

Muskets and disease

Diamond attempts to explain why some peoples or ‘races’ appear to have fared better over the course of history than other peoples (why, for example, the British colonised Māori New Zealand, rather than the reverse). He explicitly rejects the (racist) ideas that have been associated with social Darwinism—that certain races are biologically ‘superior’ to other races. Importantly, Diamond argues that unless a detailed and convincing explanation for the “glaring, persistent differences in peoples’ status” is provided most people will continue to suspect that (racist) biological explanations for these status inequalities are correct after all (2005, p. 25). Such biological explanations for status inequalities can be insidious. For example, if presented with Hook’s suggestion that poverty, deprivation and the impact of colonisation can explain high levels of violence among Māori, a racist can always provide a genetic determinist response, for example by answering: “Yes, but it is biology/genetics that causes the deprivation and poverty, and allowed Māori to be colonised, in the first place.” Diamond’s desire to give a convincing alternative explanation for the initial causes of status inequalities is, therefore, particularly relevant to the ‘warrior gene’ issue.

Diamond (2005) summarises his argument about the causes of today’s racial inequalities in a single sentence: “History followed different courses for different peoples because of differences among peoples’ environments, not because of biological differences among peoples themselves” (p. 25). His thesis, then, directly contradicts the pernicious political arguments that could arise from the warrior gene concept—that the disadvantaged social environment of many Māori (compared with other New Zealanders) is a direct result of Māori biology. Diamond’s alternative ‘science of human history’ emphasises the long-term historical, environmental and ecological influences on the development of modern human societies. To understand the fatal impact of Europeans on Māori (rather than the reverse), for example, we need to first understand why these two societies differed so markedly in respect of disease resistance and technology. According to Diamond, the ecology of Eurasia, most especially, the presence of domesticable plant and animal species not found elsewhere, allowed large and sedentary human populations to develop. These large populations, in turn, provided a breeding ground for diseases, to which Europeans eventually evolved partial

immunity. Diamond provides similar ecological–historical explanations for why technological developments occurred more especially in Eurasia. Agriculture allowed for larger populations and greater division of labour, which in turn facilitated technological innovations. Furthermore, just as diseases spread more easily across the Eurasian landmass, so too did ideas and technology. The upshot of these historical processes was that, by the 16th century, Europeans—provisioned by an agricultural system that originated in the Middle East, armed with gunpowder invented in China, and resistant to diseases that had swept Eurasia for millennia—were in a position to launch themselves onto an unsuspecting world.

Diamond’s science of human history approach can, therefore, be applied to the initial causes of present-day status inequalities in New Zealand. For example, to return to Darwin, the death toll from newly introduced European diseases would have exacerbated other major contributors to the 19th century Māori population collapse—drunkenness, violence, decreased fertility and “the extraordinary mortality of the young children” (1901, p. 287). A vicious circle would have been created. Susceptibility to new diseases led to rapid population decline, which had a deleterious impact on social cohesion (especially as Kaumatua were among those most likely to die). Loss of social cohesion made Māori populations more susceptible to European vices (such as alcohol and tobacco), and less able to deal with the consequences of these and of other concomitant social ills, such as violence. This, in turn, led to higher mortality (especially among children) and greater susceptibility to disease, which then fed back into the cycle of population decline, and its ruinous consequences. In addition, Māori were still coping with the effects of another European introduction—the flintlock musket. The direct result of the ensuing decades-long ‘Musket Wars’, which peaked in the years immediately prior to Darwin’s own visit in 1835, was an estimated 20,000 Māori killed, with many tribes displaced and some smaller ones wiped out (King, 2003, chapter 10). Moreover, as the inter-tribal arms race escalated, the need for tradable goods rapidly eroded traditional ways of life: “Those who wanted or needed to fight, for attack or anticipated defence, had to be involved for long periods in harvesting flax or producing pigs or potatoes [for trade]” (King, 2003, p. 135). By the second half of the 19th century, therefore, Māori were still coming to terms with the social changes caused by new technologies and new cultural practices, at the very time that the fatal impact of disease was becoming most acute.

It is in relation to this period that Darwin began describing the decline of Māori in terms of survival of the fittest. Here, he was attempting to explain from an evolutionary perspective the obvious fact that indigenous peoples all over the world were faring badly in comparison with Europeans. To later social Darwinists, of course, survival of the fittest became synonymous with inherent human superiority and inferiority. This is a mode of thinking that may potentially be revitalised in the concept of a ‘warrior gene’. However, from the perspective of Diamond’s science of human history, and aside from certain human groups having a different body chemistry than others, the different outcomes for indigenes and Europeans has nothing to do with evolved ‘fitness’ and everything to do with the historical processes that began with the development of agriculture in central Eurasia over 10,000 years ago.

Genomes, history and environment

A science of human history approach also warrants a closer examination of the historical environmental circumstances of Māori. At the time of contact with Europeans, Māori had successfully colonised the most isolated large landmass in the world. The Māori genome, in other words, was an evolutionary success; the very fact that Māori were living and reproducing in New Zealand, expanding from perhaps 100 original colonists to an estimated 100,000 by the 17th century (King, 2003, p. 49), demonstrates this fact. Moreover, the Māori genome was one that allowed, through the intermediary of culture, a remarkable degree of adaptability. In the centuries following the founding migration(s) to New Zealand, Māori had adjusted from the tropical environment of their ancestral home, through the resource-rich

‘moa-hunter’ period, to diversification and intensification of resource extraction as initial food sources became exhausted (King, 2003). But this was not the full extent of their adaptability. For tens of thousands of years Māori and their Polynesian ancestors and, before that, the ancestral human groups passing through Asia and out into the Pacific, had been stone-age peoples. Yet within a few years of contact between stone-age Māori and ‘steam and steel’-age Europeans, Māori were exploiting and adopting new technologies and new patterns of life.

The rapidity with which Māori adapted must be emphasised. James Cook made the first European landfall in New Zealand in late 1769, and the first temporary European communities were not established until the 1790s. By this time, however, (culturally stone-age) Māori were already engaging in commercial activities, joining European ships’ companies and voyaging to Australia and beyond. As historian Michael King points out, Māori quickly proved themselves “capable and competitive entrepreneurs” (2003, p. 127). The Ngapuhi chief Hongi Hika (described in Darwin’s journal as “Shongi”) illustrates the enterprise of this period’s Māori. Hongi was born into a society that had been in a stone age for as long as human beings had existed. By the 1820s, however, he was voyaging to the most technologically advanced nation in the world, Britain, and meeting its ruler, George IV. While overseas, he assisted British academics in compiling a grammar of Māori, traded successfully in Australia for muskets, and, upon his return to New Zealand, supervised agricultural projects (King, 2003, pp. 136–137). Yet, while Hongi Hika perhaps exemplifies the Māori entrepreneurial spirit of the time, he is best remembered as a warrior. Did Hongi have the ‘warrior gene’? And if so, what aspects of his behaviour did it influence?

Whatever evolutionary processes Māori had gone through to reach New Zealand and to adapt to the changed and changing environment of their new home, these also allowed Māori to exploit the new opportunities provided by the arrival of European technology. Thus, if a ‘warrior gene’ had been selected to ensure ancestral Māori survival in the Pacific, it also helped Māori in this new post-contact environment, at least, until the full impact of disease and other deleterious ‘imports’ began to be felt. How would history have been different if large numbers of European colonists had not come to settle in New Zealand after 1840? What if Māori had remained a majority in the country long after the dislocation of the musket wars had lessened, and as new food sources (particularly potatoes) allowed Māori groups to expand into territories that had previously only been occupied seasonally? What if contact with Europeans had been sufficient to allow Māori to acquire some immunity to disease, without the ‘notorious’ population decline, and the subsequent weakening of social bonds? Māori had already shown themselves to be adaptable entrepreneurs; how would this entrepreneurial ability have developed if Māori had remained a majority in New Zealand? What would Māori New Zealand have looked like in 1900 or 2000?

Of course, this was not what happened. For Māori, the influx of increasingly large numbers of European settlers coincided with disease and population decline, the adoption of European vices and habits, and the concomitant deterioration in social cohesion. But this ‘what if...?’ speculation does indicate that any genetic or biological explanations for the causes of Māori social inequality need not be politically pernicious. The Māori genome, which had successfully overcome the challenges faced in colonising the Pacific Islands and New Zealand and, in the initial contact with the technologically more advanced Europeans, had one crucial weakness, a lack of evolved immunity to disease. The rest, as the saying goes, is history. Yet if modern Māori carry the ‘warrior gene’, so would the early 19th century Māori ‘entrepreneurs’ and, if the evolutionary story is to be believed, so would the ultra-social, ultra-resourceful ancestral Polynesian migrants to New Zealand. In each case, however, the manner in which the gene influenced behaviour would have been determined by its environment. The fact that today, the ‘warrior gene’ supposedly confers disadvantage on one sub-population in New Zealand (Māori) but not another (Chinese) demonstrates the overwhelming importance of this environment.

Conclusion

The question of biological or genetic differences between human populations, beyond obvious physical diversity, is one of the most fraught in modern social and political discourse. The 'warrior gene' hypothesis, premised on possible evolved behavioural differences between Māori and non-Māori, touches directly on this wider controversy. At issue politically is how the concept of genetic difference is interpreted. If the idea of evolved genetic difference is treated in a manner akin to how it has been historically, then it is a cause for alarm for minority groups such as Māori. One possible socio-political consequence, should the simplistic notion of a 'warrior gene' become established in the public mind, is an erosion of confidence in the benefits of remedial social policies. If enough people come to believe that Māori are inherently and ineluctably violent, for example, then political support for ameliorative social policies would diminish. Why waste taxpayer dollars on a problem that cannot be fixed?

A more developed Darwinian argument, however, can be used to counter naive beliefs that humans are 'genetically wired' to behave in one way or another. Given an evolutionary perspective, some genetic difference between ethnic populations is only to be expected. Acknowledging this possibility does not mean we must accept the egregious political arguments of social Darwinian history. The environment in which the genome develops, and in which any genetic influence is expressed, is of paramount importance. For the past 160 years, Māori have been marginalised. The resultant deprived environment, then, is the one in which possible genetic influences have been and are being expressed. A political Darwinian perspective can emphasise the need to improve this environment. Ignoring Darwin's dangerous idea may do a disservice to Māori; taking on Darwinism may have the opposite effect.

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Author Notes

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