Changing genes: Science and being Māori

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Abstract: This commentary follows tangential lines of reason stimulated by Hook's thought-provoking paper, "Warrior genes" and the disease of being Māori (2009), to question the ethical responsibilities of scientists to the public in modern society.

Keywords: ethics; ethnicity; genetics; scientific responsibility

Hook poses a somewhat tongue-in-cheek but insightful question: Is being Māori just another disease? It reminded me of an application I reviewed as part of an ethics committee where the clinical research team planned to give growth hormone to children that were significantly small for their age, although not technically 'little people'. I posed the question to the researchers: What are the risks of being short? The researchers provided a list of known outcomes for 'short' people. Significantly, all of the risks were social ones (eg. lower education achievement, lower income). At the time the proposal was approved but driving home after the meeting I thought to myself: Could the social problems affecting Māori (which were one and the same as those for short people) be fixed by a medical intervention? While the answer to this seems astoundingly simple, it is also blindingly obvious that the logic underpinning many research projects treats this as a serious possibility. Hook's simple question strikes at the heart of the intersection between ethics and ethnicity, science and social justice, genetics and the environment. He also brings to the fore a dilemma facing modern science: how do increasingly technical and abstract sciences communicate with the public in ways that are easily understood without being misconstrued by those with mischievous intent.

It is somewhat ironic that the greater involvement of Māori in research and focus on measuring ethnic disparities, with a view to highlighting inequalities, has provided fertile ground for those engaging in population genetic research to frame studies and the results in relation to ethnic groups. At face value this seems like a reasonable approach, useful methodologically to identify gene function and in step with traditional population health approaches to research. However, it is also evident that the logic of gene discovery lends itself to deterministic explanations and criticism of eugenic tendencies. Despite continuing assertions by scientists that genes form only part of the picture and that environmental factors have a much greater influence on, in particular, social outcomes, judging from the so-called 'warrior gene' affair our ability as a society to engage in the nature/nurture debate continues to be coloured by deep seated prejudice, if not racism. It was lost on many commentators that no gene can be ethnically ascribed, that is belonging to all members of one ethnic grouping and none of any other.

While the framing of the 'warrior gene' as a 'Māori gene' was a media action, the creation of an association and causal link was the responsibility of the researchers, an action which Hook challenges by following the logic of the proposition and exploring its implications. Despite the availability of vast amounts of scientific information, the opportunities for the public to engage in scientific debate are limited. 'Joe Public' is easily confused by the complexity, the specificity and the inconsistency surrounding scientific findings. As such, controversial findings tend to either be accepted or dismissed depending on whether they align with the persons prevailing views. Indeed, a study by Lynch, Bevan, Achter, Harris, & Condit (2008) on the effect of multiple exposure to messages about genetics and its impact on racial and genetic discrimination showed that while the overall level of racism didn't increase, the ability of those with racist views to justify them using scientific rationale did.

It is interesting and somewhat disturbing to note that MAOA variants continue to be researched in scientific circles and reported as the 'warrior gene' by the media. Two reports on the 'warrior gene' have been released this year. A study involving researchers from Brown University, Princeton University, University of California, Santa Barbara, London School of Economics and the University of Edinburgh, synthesized work in psychology and behavioral economics and found that individuals with the so-called 'warrior gene' display higher levels of aggression in response to provocation (Brown University, 2009). Media reports also quoted biosocial criminologist Kevin M. Beaver of Florida State University who stated:

> While gangs typically have been regarded as a sociological phenomenon, our investigation shows that variants of a specific MAOA gene play a significant role…Previous research has linked low-activity MAOA variants to a wide range of antisocial, even violent, behaviour, but our study confirms that these variants can predict gang membership (Florida State University, 2009, ¶ 4-5)

It begs the question, what possible actions can be taken as a result of this knowledge?

Hook articulates his concern about the stories that science tells and how the values implicit in them become embedded in the minds of the general public. As a non-scientist member of a crown research institute that works with scientists on a regular basis I often struggle to understand the science and have to engage in conversations in relation to the purpose of the scientific project. Mead (2007) has also questioned the purpose and framing of genetic research and expresses a desire for geneticists to begin searching for something positive, like the Polynesian excellence gene. The identification of genetic defects, initially health and potentially social, inevitably requires their elimination and the avenue for this to occur is already in existence. The use of pre-implantation genetic diagnosis (PGD) is on the rise, driven by increasing numbers of people using IVF and the identification of more and more genetic disorders. It may be possible to screen and remove some 'genetic defects' from the gene pool but for the vast majority of health and social conditions it will be an exercise in futility, likely to increase levels of dysfunction in society rather than reduce them.

Hook hints at colonisation as an alternative explanation for the differences in social outcomes for Māori. It is pointless disputing either the effects of colonisation or its role in problematising Māori and other indigenous peoples. Associations and causal links for various disparities are well articulated and will continue to be illustrated by researchers counting, analysing, extrapolating and framing data to add new chapters to this on-going saga. Translating these stories into action is the perennial challenge. Too often the 'identification of disparity' becomes the 'explanation for disparity' rather than the impetus for change. And it is change that is required, a change in focus, a change in mindset, and most importantly a change of heart.

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