

Austronesian Heroes or Genetically Alcoholics? Contrasting Taiwan Aboriginal Genetics in Austronesian Migrations Research versus Alcoholism Research

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I wrote the original version of this paper in 2005 for a graduate level social theory course at the University of Windsor. It contrasts journal article representations of Taiwan Aborigines in Austronesian migrations research on prehistoric settlement of the Pacific with genetics research on alcoholism. and then considers how these differing constructions of Taiwan Aboriginal peoples genes are utilized in Taiwanese nationalist discourses versus health discourses.

Central thesis statement

How is expert knowledge production a genetics research utilized in the settler governance of Aboriginal peoples? In approaching this paper, I want to take up the issue of biocolonialism, specifically how the emergent technologies of genetics research functions as technologies of colonial governance. This stands in sharp contrast to the arguments put forth in Nikolas Rose and Carlos Novas' article entitled "Genetic risk and the birth of the somatic individual" (2000) which argues for the emergence of an ideal somatic individual who is able to engage with the new genetics to create new forms of personhood:

But genetic risk does not imply resignation in the face of an implacable biological destiny: it induces new and active relations to oneself and one's future. In particular, it generates new forms of 'genetic responsibility', locating actually and potentially affected individuals within new communities of obligation and identification (Rose and Novas, 2000:485).

My point is not to refute the particular findings of Rose and Novas but rather that their claims must be qualified by class and power issues, particularly in the context of settler/Aboriginal power relations. Bruno Latour contends that our knowledge of genetics research relies upon and is inextricable from networks of elaborately equipped laboratories, scientific research infrastructure, government funding, and scientific discourses mobilized in the production circuits of such expert

knowledge accumulation (1987:146-176). Methodologically, the paper considers the parallels between the late 1800s camphor industry with recent alcoholism related and Austronesian related genetic research by utilizing Latour's concepts about accumulation circuits and acting at a distance in conjunction with organizational narrative analysis of journal articles and mass media accounts (Latour, 1987:222-224; Cooren, 2000). Based upon these findings, I argue that the concept of genetics research in this context constitutes or contributes to biocolonialism.

Theoretical section:

Utilizing a Gramscian conception of hegemony, Kenneth Mumby writes in reference to various studies of resistance in organizations, "In contrast to the dominance model, such resistance is not read as ultimately reproducing extant relations of power, but rather as involving productive acts that reconfigure the terrain of struggle" (Mumby, 1997). I consider that this is applicable to settler/Aboriginal power relations since settler governance of Aboriginal peoples must continually reproduce the hierarchical relations originally imposed under imperialism at a time when Aboriginal sovereignty is increasing being recognized in court decisions and international law (Moran, 2001:1013-1014). I also consider that the organizational properties of narratives play fundamental roles in the reproduction of settlers/Aboriginal power relations (Cooren, 2000:68-74). Now this displacement and dispossession of Aboriginal peoples creates a cultural quandary which is resolved in many instances through recourse to what I term the heroes-rescue-Aborigines organizational narrative. These stories help reproduce and legitimize the power relations between Aboriginal peoples. Greimas' universal narrative schema posits that every narrative can be divided into four phases of *manipulation*, *competence*, *performance*, and *sanction* (Cooren, 2000:71-74). Rose and Novas posit in their narrative a hero figure who was able to come to grips with his new threat of genetic risk and resolve. Analyzed in terms of this universal narrative schema:

Manipulation phase: the hero must quest to deal with the threat of genetic risk.

Competance phase: the hero engages in a series of sub narrative's to inform themselves of risk, go through crisis perhaps in which their own identity changes, and then is able to negotiate with the medical authorities and transform these authorities into allies in his struggle against this new genetic risk.

Performance phase: the hero is able to achieve this new subjectivity and he is transformed.

Sanction phase: the hero is now able.

Throughout their story Rose and Novas attempt to persuade readers that this heroic subjectivity was able to mobilize this genetic information as a new ally in negotiations with medical authorities. In the following opening paragraph of their conclusion, Rose and Nova are claiming performance of their quest.

We have argued that the critics of biological determinism, genetic reductionism, geneticism and the like have considerably oversimplified the shifts in forms of personhood associated with the rise of ideas and practices of genetic risk. We found little evidence that modern genetic biomedicine dreams of the reduction of the sick person to a passive body-machine that is merely to be the object of a dominating medical expertise (Rose and Novas, 2000:507).

What we see throughout Rose and Nova is an assumption of this able hero so their analysis misses the potentiality of someone else using Aboriginal genetic information to create a passified subjectivity through what I term the hero-rescues Aborigines narrative (Munsterhjelm, 2004). In the hero-rescues-Aborigines is a hierarchies structured narrative in which the adept settler hero proves his morality and the morality of Aboriginal/settler power relations by helping implicitly inept Aboriginal peoples. This narrative can be analyzed in terms of the universal narrative schema:

Manipulation Phase: the heroes receive a quest, in this case to help Aboriginal peoples with some problem caused by some reified threat internal or external such as cultural loss, "development", and "modernization" (Thompson, 1990:61-7). The hero by taking on a quest creates a fiduciary responsibility to the Aborigines (Cooren, 2000:74).

Competence phase: the hero sets out and through series of sub narrative's to complete the quest. This may include gaining allies, abilities, and overcoming the difficulties.

Performance Phase: the hero completes or fails in his quest.

Sanction Phase: the hero is positively or negatively sanctioned by Aborigines (or other senders) depending on his success or failure.

Thus within this narrative we have a way of organizing human and nonhuman actants to carry out a quest over time. In this way, narratives become important in organizing society. Now crucially, Aboriginal peoples subjectivity is constructed and constituted by their role within the narrative in which they are the recipients of help from the heroes. In this way, an internal coherency is created which resolves tensions between settlers and Aborigines by legitimizing their relations based upon a hierarchy of abilities in which the able settler heroes are able to help Aboriginal peoples who are implicitly inept. In this way, Aboriginal peoples are constituted as a group who is not capable of exercising full autonomy (Dean, 2002:48). These organizing properties of narratives are consistent with Law and Urry (2004) on the performative functions of social science in enacting power relations. It is also consistent with Dorothy Smith's work on texturally mediated relations argues that the particular context within which this research occurs involves relations that start and end well beyond that particular temporal/spatial context, in this case, colonial relations between settlers and Aboriginal peoples (Smith, D., 1999:75-6). Therefore, if my arguments are plausible, they must demonstrate Aboriginal peoples are being constituted as subjectivities by hero-rescue-Aborigines narratives rather than Aborigines constituting themselves as Rose and Novas' *somatic individual* hero figure would.

I would like to demonstrate how this works and why Rose and Novas argument must be qualified by analyzing how genetics research on Taiwan Aboriginal peoples is used to govern Aboriginal peoples at a distance. Latour conceptualizes science and capitalism as overdetermined:

“All of the distinctions one could wish to make between domains (economics, politics, science, technology, law) are less important than the unique movements that makes all these domains conspire towards the same goal: a cycle of accumulation that allows a point to become a *centre* by acting at a distance on many other points” (Latour, 1987: 222).

Latour analyzes the role of knowledge accumulation in the French colonial endeavour in the Pacific and asks “how to act at a distance upon unfamiliar events, places and people?” (Latour, 1987:223). In order to translate research into these bodies of knowledge, research must be *mobile*, that is it can be transported or transferred; *stable*, that is, it does not deteriorate or otherwise change form; and *combinable* with already centralized existing bodies of knowledge (Latour, 1987:223-4). By meeting these conditions, genetics research can become part of governing at a distance. Now what becomes important here is that experimental narratives become a way of organizing these circuits of accumulation, and are themselves set within a complex set of other institutional relations including funding agencies, ethics review boards, academic institutions, journals, and the whole array of other social relations within which the research takes place. This conception of overdetermination that Latour outlines accords in many regards with the observations of Edward Said:

"Neither imperialism nor colonialism is a simple act accumulation acquisition. Both are supported and perhaps even impelled by impressive ideological formations that include notions that certain territories and people require and beseech domination, as well as forms of knowledge affiliated with domination...(Said, 1993:9).

With its origins in earlier forms of imperialism, settler colonialism involves a complex set of governance practices meant to sustain relations of domination over lands and territories by maintaining hierarchies between settlers and Aboriginal peoples. Biocolonialism has emerged as a new type of governance in the last 20 years or so. One specific type of biocolonialism that has received considerable attention is *biopiracy* in which Aboriginal peoples knowledge and even genetic materials are appropriated without their consent within accumulation circuits. A well known example of this was the United States National Institute of Health’s attempt to obtain a patent on genetic materials from a man of the Hagahai people of Papua New Guinea (Smith, L.T., 1999:100). The case of Taiwan this includes many of the well over 10,000 samples of Aboriginal DNA that have used for genetics research, generally without Aboriginal consent (Liu Shao-hua, 2000; Taiwan Aboriginal News Magazine, 1999). Indeed, it is not even necessary anymore for researchers to ask Aboriginal

peoples since some samples and cell lines are available from the US government-sponsored NIGMS Human Genetic Cell Repository, which according to their web page states as its purpose:

By providing the resources for human genome research, the HUMAN GENETIC CELL REPOSITORY, sponsored by the National Institute of General Medical Sciences (NIGMS), supplies scientists with the materials for accelerating disease gene discovery. The resources available include highly-characterized, viable, and contaminant-free cell cultures and high quality, well-characterized DNA samples derived from these cultures, both subjected to rigorous quality control (Coriell Labs)

Again, the above passage is portrayed as a hero quest in which researchers quest to discover "disease genes". The above passage clearly demonstrates also how science can "dehumanize the humanness of genes" according to Aroha Mead (quoted in Smith, L.T., 1999:100). This dehumanizing is evident in the description of a sample from a Pangheh (Ami) Aboriginal man of eastern Taiwan:

Cell Line Characteristics

Repository Number: GM13609

Sample Description: AMI POPULATION

Sample Description: HUMAN VARIATION PANEL - ABORIGINAL TRIBE FROM TAIWAN (AMI)

DNA Sample: NA13609

Cell Type: B-Lymphocyte

Transformant: Epstein-Barr Virus

Tissue Type: Blood

Biopsy Source: Peripheral vein

Genus species: Homo sapiens

Common Name: human

Gender: Male

Ethnicity: Ami

Relation to Proband: proband

Remarks: Line JK2996A; adult from eastern Taiwan

Ordering: Price: \$85 (Coriell Labs, Cell Line Characteristics)

Biocolonial governance at its core involves governing through the creation and imposition of subjectivities on Aboriginal peoples, whether these are intellectual property rights such as patents, cell-line cultures or as subjects of research papers. There is no evidence of Rose and Nova's *somatic individual* here. Rather we have an accumulation processes in which involved Aboriginal genetic materials are being processed as part of accumulation circuits that create new subjectivities of Aboriginal peoples. This research has powerful implications for Aboriginal rights.

What becomes apparent in this brief treatment is that the type of organizational narratives and the subjectivities that organize human and nonhuman actants has powerful organizational capacities in organizing the circuits of accumulation and in reproducing hierarchies necessary for these circuits of accumulation. The particular subjectivities involved in genetics research inevitably position the researcher as a hero out to quest discovery whether it be about the origins of peoples in the Pacific or problems of alcoholism among Aboriginal peoples. Aboriginal peoples in these narratives are the subjects who are acted upon, rendered as passive blood samples that can then be investigated and compared to other blood samples from other Aboriginal peoples.

Taiwan in the World System

The Taiwanese state today is the cumulative result of nearly 400 years colonial efforts by a succession of Western, Chinese, and Japanese colonizers. Today, Taiwan is an American protectorate reliant on the US for weapons and diplomatic support. Fred Chiu of Hong Kong University that in the post-World War II period as a US protectorate, “If we say Taiwanese society as a whole has experienced a neocolonialistic appropriation at an international level, to the Aborigines this meant being subcolonized to the lowest strata via a process of "internal colonialism"” (Chiu, 1994:91). This neocolonial relation involves a hierarchy in which Taiwanese and Chinese settlers in Taiwan are the local intermediaries in the suppression of Aboriginal peoples. This position of Chinese settlers as the local intermediaries has historical predecessors in the role and relationships between Western merchants and Chinese compradors in the late 1800s camphor industry in Taiwan. In order to illustrate how local and international circuits of accumulations interact in the governance of Aboriginal peoples, I would like to consider this earlier example from the late 1800s in Taiwan. Through this historical detour, I hope to demonstrate how complex circuits of accumulation at both local and global reinforce and mutually sustain each other and by doing so govern Aboriginal peoples. In this situation, the colonized areas of Taiwan were under split Chinese-Western sovereignty, with Taiwan ports having been opened to Western business and naval vessels under the 1858 Treaty of Tianjin

(part of the Second Opium War)(Davidson, 1903:174). Western merchants, Chinese comprador business networks, and the Ching government, though frequently bickering over the spoils, cooperated and mutually benefited through the camphor industry related invasion of Aboriginal territories (Munsterhjelm, 2004:66-7). Western merchants were largely limited to the ports, and Chinese business networks were responsible for gathering of camphor while the Ching government received tax revenues and provided larger military forces when required against Aboriginal peoples.¹

The beginning of the typical camphor industry circuit of accumulation involved the armed invasion of Aboriginal territories by local clans, such as the Lins of Wufeng, who had gained some sort of a local monopoly from the Ching government (Barclay, 1999:85-6). These clans generally had their own powerful military formations, who were charged with the armed invasion and securing of Aboriginal territories within which the camphor trees grew, in effect imposing a set of social relations within which camphor extraction could occur in Aboriginal peoples' territories (Barclay, 1999:85-6). Aboriginal resistance to these invasions of their territories was intense, with frequent attacks on camphor workers and destruction of the stoves (Davidson, 1903:425). This was a business problem since, "...the expense of protection is very high, and the manufacturers are much handicapped by it" (Davidson, 1903:430). The next phase involved the extraction of camphor by workers. The extraction process involved first cutting up the trees into chips by hand using an adze (similar to an axe) and then distilling the chips to produce raw camphor (Davidson, 1903:424). In this way, a typical Chinese distilling unit, generally located within a mile of the chipping site, could distill some 270 pounds of camphor chips into about 5 pounds of camphor flakes each day (Davidson, 1903:423). The camphor flakes were then packed and transported to Western merchant houses in the treaty ports. Through this combination of military invasion, and chemical processing, the cam-

¹ Western imports into Taiwan consisted mostly of opium. For example, 1583 piculs (210,406 pounds) of opium were imported at Tamshui in 1882 accounting for 62% of the value of all net foreign imports (Lin, Huang, Ang, vol. 2, 1997:588-9). The British Maritimes customs official Henry J. Fisher wrote in the 1882 Tanshui Trade Report that: "An excellent authority says 45 percent, men and 3 percent, women-- in the towns 70 percent, men--smoke opium. The best informed Chinese say one-third adult men smoke. This is probably correct...." (Lin, Huang, Ang, vol. 2, 1997:582).

phor tree on Aboriginal territories was rendered *mobile, stable* (at least relatively), and *combinable*. In this first accumulation cycle the Chinese business networks were vital, however once the camphor arrived at the treaty ports having *performed* their quest to profit from Western demand and the Chinese business networks received their payment (positive sanction), their roles ended. The next set of accumulation circuits were Western centered.²

This next set of accumulation circuits were driven by the demand (sender of another quest of accumulation) for camphor, which was used in medical, celluloid, and later smokeless explosives. Camphor was used in the production of various types of skin rubs for the relief of arthritis, as well as the manufacture of mothballs (Davidson, 1903:398). During the 1860s, celluloid the first mass produced plastic was invented which helped increase camphor demand (americanplasticscouncil.org). The invention of smokeless gunpowder in the late 1880s transformed camphor into a strategic material (Gardella, 1999:173). Therefore, these technological advances and the rise of Western industrialization greatly increased demand that, through these intersecting and mutually reinforcing local and global circuits of accumulation, intensified the colonization of Aboriginal territories.³

The circuits of accumulation of Aboriginal genetics research reflect Taiwan's position today as an advanced capitalist settler state and as a semi-sovereign American protectorate. Within Taiwan, genetics research related constitution of Aboriginal subjectivities are situated within a larger set of settler state and settler civil society discourses involved in governing of Aboriginal peoples, including various health discourses and in the national Taiwanese identity state project (Rose, 1999:123, 168-9). The narratives of Aboriginal discourses invariably emphasize “helping” Aborig-

² The tea industry was also an important force in the invasions of Aboriginal territories. In 1893, 3.6 million pounds of camphor worth 596,608 Haikwan Taels and tea exports of 21.89 million pounds worth 4,050,980 Haikwan Taels from Tamshui accounted for over 96 percent of the value of exports (Lin, Huang, Ang, Vol. 2, 1997:1013). British Commissioner of Customs, Walter Lay, in the 1880 “Tanshui Trade Report” described the relationship between tea cultivation and invasion of Aboriginal territories: “As fast as fresh territory is conquered from the savages, it is devoted to Tea... Such industry has been displayed by the Chinese in the cultivation of Tea during the last few years that whilst in 1865 our total export was 180,824 lbs., it now amounts to over 12 million lbs. a year, and there is every probability of this figure even being exceeded” (Lin, Huang, Ang, vol. 1, 1997:451).

³ During the early Japanese colonization (1895-1945) camphor and opium revenue provided 18 percent of colonial government revenues during the period 1900 to 1907 or 22.8 million yen of 125.5 million yen in this period from camphor (12.84 million yen) and selling opium (10.02 million yen) (Ka, 1995:53-55).

ines for the hero-rescues-Aborigines organizational narrative is a central and defining feature of settler/Aboriginal discourses (for examples see Huang, 2002; Debbie Wu, 2003; Su, 2003). This is clear in headlines such as ,“Aboriginal newborns get medical checkups for free” which begins “In a bid to help Aborigines fight against rare diseases, the Taiwan Foundation for Rare Disorders has begun offering free checkups for Aboriginal newborns for more than 20 metabolic disorders” (Taiwan Government Information Office, 2003). Other examples of headlines include “Research group hopes to improve Aboriginal health” (Huang, 2002a), “Aborigine health issues need work, group says” (Su, 2003), “DOH [Department of Health] program aims to improve aboriginal health.” (Hsu, 2000). In a manner typical of governmentality, there is an emphasis on statistics, which are wielded in support of government interventions such as improving health care facilities and programs to reduce the life expectancy gap of 8-10 years between Aborigines and Settlers or reduce rates of alcohol related diseases and alcoholism in general (Su, 2003; Rose, 1999:113-4). Though staying within the boundaries of Aboriginal health discourses, the Atayal Aboriginal legislator, May Chin, rejected genetic discourses in her criticism of government policies:

“Often times, people like to blame Aborigines' short life span on their [lifestyles],” Chin said, “or by saying that there's something in the Aborigines' genes that cause them to have shorter life span than that of the general public. But all such ideas are not true,” she said. “It all rests on the fact that the government has not been taking good care of Aborigines with adequate medical services” (Huang, 2002b).

Research done in the 1950s found Aboriginal alcoholism rates of 1.1 to 1.6 percent but now, for example, there are rates claimed from 17 to 20 percent (vs. 1.5 percent among settlers) to as high as 55 percent (Rin and Lin, 1962:138; Lu, 1996:420; Cheng et al, 2004:185). Therefore we have a massive increase in only four decades. This massive increase despite the massive disruption of Aboriginal society and social institutions by colonialism is blamed on Aborigines in settler stereotypes. Isak Afo, a Pangceh (Ami) Aboriginal intellectual writes:

In Taiwan, the structure of political parties, the state and the country's ethnic mix combine to form a duplicate of colonial relations. This takes the form of internal repression -- an internal colonialism in fact. In accordance with the strategy of orientalism, and relying on the electronic and print media, the myths of the Other

are created and perpetuated. In Taiwan, the myth of the Aboriginal drinking culture is presently the most popular and pernicious of these (Afo, 2000). Afo further argues that these power relations involve a repetition of negative stereotypes that is important to the settler repression of Aboriginal peoples. This repression is evident in a persistent pattern of dichotomization between stereotypes of settlers and Aboriginal peoples:

The colonial myth-makers have characterized the Aborigines of Taiwan as "inherently lazy," "unproductive," "hooked on booze" and "lawless," or else as "good at singing and dancing" and "natural born athletes." The colonizers meanwhile see themselves as "benevolent and generous," "active and assertive" and "disciplined." The media repeats these stereotypes, with superficial understanding (Afo, 2000).

Afo's critique clearly places alcoholism within colonial relations between settlers and Aboriginal peoples and Taiwan. If we accept this argument and Latour's concepts on circuits of accumulation than clearly alcoholism related genetics information in this context cannot be neutral. Therefore, Rose and Nova's *somatic individual*, is not likely to be found in such context.

Alcoholism Research Papers Analysis

Latour's argument that the context within which DNA knowledge is inseparable from that information makes it necessary therefore to consider how this larger social context gets removed from alcoholism research. Know it is this latter narrative that we will find utilized in the organizational narratives of genetics research. For it is not Aboriginal peoples who transformed their subjectivity but rather in accordance with their subordinate situation it is to settler modern heroes who seek to understand the Aborigines' genetics and potentially be able to help the Aborigines with this new knowledge. Organizationally, the narrative structure of alcoholism research, at least as reflected in the papers, involves a set of filters, translations, and transformations of the social context through which Aboriginal peoples becomes *mobile*, *stable*, and *combinable*. The structure of a typical alcoholism research paper is highly stylized and follows a fairly standard narrative schema.

Manipulation phase: the research question and its relevance to ongoing debates within the field are defined. Of the eight articles on alcoholism that I analyzed, there is a shared assumption that

alcoholism is caused by some combination of heredity and environment so their quests were valid (Thomasson et al, 1994:640; Chen C.H. et al, 1996:488, Lu et al, 1996:419; Chen et al, 1997:703; Chen et al, 2001: 187; Osier et al, 1999:1147).⁴ The Austronesian genetics research papers all attempt to situate themselves within the ongoing debates (Wei, 1999:333-4; Tajima et al, 2003:24; Lin M. et al, 2000:1; Shaw, 1999:51-2).

Competence phase: this consists of three new major subnarratives.

Sub narrative one: Various ways are used to get samples. The Chen et al alcoholism paper utilized local health authorities to gather subjects (Chen et al, 1997:704). Thomasson et al merely says they enrolled local Atayal from three small villages (Thomasson et al, 1994:641). In the case of alcoholism, the subjects are classified according to specific interpretations of DSM diagnostic criteria for alcoholism (for example DSM-III, III-R or IV). The DSM criteria deployed in the field allow the creation of the alcoholic vs. nonalcoholic subjectivities according to an internationally acceptable set of procedural/diagnostic narratives.⁵ Austronesian related research involved a slightly different classification procedural narratives with subjects being asked whether there has been any mixture with other groups. For example, Wei et al states, “The selection criteria included no intertribal marriage being recalled for at least three generations” (Wei et al, 1999:334). Blood samples are taken and now become equivalent to the Aboriginal subjects. This is a form of translation which is also necessary for the blood sample now represents that Aboriginal subjects. The samples have been rendered *stable* through refrigeration, mobile due to their small size and

⁴ Three papers concern alleles (variants of genes) involved in the processing and metabolization of alcohol aldehyde dehydrogenase (ALDH) and alcohol dehydrogenase (ADH) (Thomasson et al, 1994; Chen W.J. et al, 1997; Osier et al, 1999). In these papers, these alleles are considered significant because they are related to flushing reactions to alcohol (turning red faced and feeling uncomfortable) so these alleles are considered by the researchers to offer a protective function against alcoholism. Three papers (Chen et al, 1996; Lu et al, 1996; Chen et al 2001) deal with dopamine D2 receptor DRD2 gene since it is theorized that pleasurable response caused by alcohol consumption may associated with release of dopamine while drinking (Lu, 1996:419). One paper dealt with the relationship of a neurotransmitter, Gamma-aminobutyric acid (GABA), with alcoholism. The final paper considered a particular cytochrome P4502E1 genotypes’ potential role in protecting against alcohol related cirrhosis of the liver (Carr, 1996).

⁵ DSM-III-R fits well with these studies since it is a mixture of social and physical diagnostic criteria which also cites studies on the intergenerational transmission of alcoholism dependents found in adoption studies that “...suggests genetics influence the disorder” (APA, 1987: 174-5).

transportable to laboratories in Taiwan urban centers or abroad. In this way, the Aborigines in what were once sovereign Aboriginal territories become *stable* and *mobile* and ready for the next subnarrative.

Subnarrative Two: Once in a laboratory there occur another set of transformations in which the blood samples are genetically tested, this set of sub-narratives involve preparation, processing, production of numerical data, interpretation, and finally statistical tests. In the preparation phase, the samples are processed according to further standardized testing procedural narratives using various allies including specialized machines, chemical agents, and testing kits. The processing allows for the transformation of the genetic materials into numerical data content that can be analyzed using various other machines. At this point interpretation can take place, which allow for the production of statistics, which are then tested for significance at certain internationally acceptable levels. In the case of Aboriginal alcoholism research, this involves testing for the correlation between alcoholism and different alleles (gene variants) such as the DRD2, and ALDH (see footnote 4). In the case of Austronesian research, these focused upon certain various genetic materials including mitochondrial DNA polymorphisms (Tajima et al, 2003), HLA variants (Liu, 2000), and the Y-Chromosome (Wei, 1999).

With the completion of these experimental sub-narratives, it is time for the discussion phase. The discussion phase is analogous to the climatic scenes of a movie as the experimenters seek rhetorically to situate their research within the established field through either association or disassociation and thereby claiming to have successfully *performed* their quest and thereby be worthy of positive *sanction* for having advanced scientific knowledge.

These data demonstrate that, in addition to the recognized environmental factors such as economic pressures, employment rates, cultural, religious, and familial practice with respect to alcohol, allelic differences at the ADH2 and ALDH2 loci influenced one's alcohol drinking behavior and risk for alcoholism (Thomasson et al, 1994:642). Other alcohol papers just restate the main finding (for example, Chen, 1997:708) but others added that there may be other potential genetic factors that needed to be explored (for example, Carr,

1996:45; Osier, 1999:1156). Among the Austronesian papers, for example Tajima et al claim that their results indicate a much earlier date for occupancy of Taiwan by Aboriginal peoples of around 11,000–26,000 years ago which is much earlier than the 4000 to 6000 years suggested by some prominent Austronesian research (Tajima, 2003:32). Lin et al grandly states that its HLA research might mean that “Taiwan might also be on the route of ancient migrations, of the prehistoric Mongoloid dispersals, between the tropics and the Asian continent, and even the American continent, which most likely took place along the coastal low land which is under the sea today” (Lin, 2001:8). For the Aboriginal participants this means being identified through the subjectivity imposed upon them by the organizational narratives. In the case of alcoholism related research means being labeled as potentially genetically dysfunctional or not. Similarly, this may result in them being further classified in relation to other Austronesian (another classification) groups.

When compared to the late 1800s camphor industry, the accumulation circuits for Taiwan Aboriginal genetic materials involve a similar pattern initial classification (a form of processing) and gathering of Taiwanese Aboriginal genetic materials by various combinations of local Chinese settler networks including the Presbyterian Church, Taiwan universities, research institutes such as Academia Sinica, and health care system (Lin Mei-jung, 1999). Now Aboriginal materials may be processed directly into scientific knowledge in Taiwan with this scientific knowledge then being exported to Western Journal's for international dissemination or the Aboriginal genetic materials may be processed in Western research settings and then sent on to journals for dissemination.

Unlike the earlier camphor production, Taiwanese settlers are more likely to participate in the latter stages of academic production, something that reflects Taiwan's greater integration into the international capitalist accumulation circuits. For example, Lin et al (2000) involved a mix of Taiwanese and Japanese researchers while Wei et al (1999) were all Taiwanese (Wei et al, 1999). Participation at this high-level internationally gives Taiwanese academic's considerable clout domestically. Similarly, this knowledge having been validated through Western scientific journals

gains as strong degree of credibility.

In Taiwan, genetics experts are generally affiliated with settler government or settler civil society research institutions such as National Taiwan University (Wei, 1999:333), Academia Sinica (Cheng et al, 2004:184), the national Buddhist charity affiliated Tzu Chi Hospital and Medical College (Shaw, 1999:51), or the Presbyterian Church's Mackay Memorial Hospitals (Lin, M et al, 2000:1). Latour's argument is that such DNA research is inseparable from institutional settings and this appears to be evident in the public role of these experts. The governing function of this information is not only in its production but also in its subsequent use as justification for the hierarchies of settler/Aboriginal power relations. As such, these experts become important mediators between expert knowledge and its application to Aboriginal policy and its general support of hierarchies of settler/Aboriginal power relations through the mass media. In the next sections, I would like to first take up how alcoholism related genetics research reenters mass media debate in Taiwan and then consider its role in the Austronesian cultural zone state project.

An example of Aboriginal alcoholism related genetics research reentering related academic areas, occurred in a 2004 American Medical Association's *Archives of General Psychiatry* article entitled "A 4-Year Longitudinal Study on Risk Factors for Alcoholism" among Taiwan Aborigines:

The findings in this study suggest that early identification and treatment of anxiety disorders may prevent alcoholism and its possible psychiatric complications, including depressive disorders, among subjects with genetic vulnerability to alcohol metabolizing enzymes and with sociocultural risk factors for alcoholism. In addition, as specific protective genetic markers against alcoholism identified molecular genetics and genetic epidemiological measures may be used to identify specific environmental targets for primary prevention, particularly among the genetically vulnerable (Cheng et al, 2004:190).

In short, alcoholism research becomes development of this subjectivity of the "genetically vulnerable", who must be identified by the government or civil society so they can be helped not to become alcoholics. Following the hero-rescues-Aborigines organizational narrative, able-bodied settler heroes rescue the "asymptomatically ill" (Lemke, 2004:556) Aborigines who may be unable to deal with the threats of alcohol under conditions of social stress. This stands as a very

dramatically different type of subjectivity of Aboriginal peoples to that of the *somatic individual* optimistically described by Rose and Novas (2000). One of this *Archives of General Psychiatry* article's authors, Cheng Tai-an, is a researcher at the Taiwan Government's top research institute, Academia Sinica. A November 2003, *Taipei Times* newspaper article about a conference on Aboriginal alcoholism describes Cheng as an "Academia Sinica researcher who has been studying about Aboriginal culture for more than 16 years." Cheng is then quoted as advocating government intervention to stop Aboriginal alcoholism: "He said that since drinking was a collective activity in the settlements, if the government really wanted to end alcoholism in the [Aboriginal] settlements, the workers should seek to treat all alcoholics in the settlements together at one time" (Debbie Wu, 2003).

Such expert opinions are then picked up on by settler civil society and government. For example, another participant at the aforementioned November 2003 Aboriginal alcoholism conference, Hank Du, director of the influential NGO, World Vision Taiwan, called for research into "physical [read genetic], psychological and social" aspects of Aboriginal alcoholism (Debbie Wu, 2003). The Taiwan Government has published articles citing genetic factors in Aboriginal alcoholism. In the June 2002 issue of the Taiwan Government's *Sinorama* Magazine, a researcher Chen Chiao-chi is cited regarding the alleged protective functions of particular ADH and ALDH alleles among Taiwan settlers, "In this context, it is worth noting that the high incidence of alcoholism among Taiwan's aboriginal people, similar to the incidence among people of European ancestry, is due to the fact that aboriginal people, like Europeans, lack this "protective mechanism""(Chang Chiung-fang, 2002). Chen Chiao-chi was cited again in November 2004 Taiwan Central News Agency article, saying that "foreign academic studies have confirmed correlation between alcoholism and heredity." Later the article said that, "The ratio [of alcoholism] among aborigines has surged to 20 percent or 30 percent by now, compared to 2 percent or 3 percent among people of other ethnic origins" (Sophia Wu, 2003). Another example, a 1998

Taiwan Central News Agency article quoted a Kaohsiung Medical College professor, “Most of Taiwan's aboriginal residents are genetically predisposed to alcoholism, the medical professor said... To effectively resolve the problem” the medical professor, “recommended establishing special hospitals to treat alcoholism and training medical personnel to help people stay on the wagon” (Hsu, 1998). What becomes clear in this is that Aboriginal alcoholism related genetics research is clearly inextricable from the context of settler/Aboriginal power relations in which it was originally constituted and which through the circuits of international accumulation it returns to Taiwan and acts at a distance in the governance of Aborigines by settlers.

The conception of Taiwan Aborigines is Austronesian dates originally to linguistics work done in the 1960s (Stainton, 1999:37). Speculations about the origins of Taiwan Aborigines date back to late 1800s when Westerners such as George Leslie Mackay (1896:266-7) engaged in speculation about the origins of the Aborigines. The present day interest in Austronesian linkages dates to 1991 article by the Australian linguist Peter Bellwood in *Scientific American* which claimed based upon an analysis of the Austronesian languages that Taiwan was likely origins of these Austronesian language group since of the 10 families of Austronesian languages nine were found in Taiwan exclusively while the other family had mutated into some 1100 other languages over time (Stainton, 1999:37-8; Diamond, 2000:709). This is led to a widespread debates based upon linguistic, archaeological, and genetic knowledge over the settlement by humans of the Pacific with Jared Diamond (2000:709-710) arguing for a “freight train” (an interesting metaphor over water) out of Taiwan across the Pacific while others have argued for various types, including a "slow boat" (Oppenheimer and Richardson, 2001:166-7).

Now interestingly, these findings were picked up by Taiwan Aboriginal intellectuals and popularized such that by the end of 1992 Bellwood's map had been reprinted in a number of Aboriginal publications (Stainton, 1999:37-8). The reason for this was that it allowed Aborigines to challenge the government's official ideology that Taiwan was part of China (Stainton, 1999:40-1).

However, within two years the Austronesian discourse began to be incorporated into an emergent set of state projects. Aboriginal identity had been mobilized by Taiwanese settler nationalists since the early 1980s as part of their construction of a unique Taiwanese identity in order to challenge one China ideologies (Hsiau, 2000:161). In 1994, following his so-called "golf course diplomacy" tour of Southeast Asia, Taiwan President Lee Teng-hui made his first public announcement of the "Go South" policy. This government policy was intended to attempt to stem the accelerating flow of Taiwanese overseas investment into China by shifting it southwards away from China and the political economic threats that this increasing integration between Taiwan and China represented (Chiu, 2000:135-6). The Austronesian cultural zone was adapted as part of an attempt to shift Taiwanese investment away from China and towards the South including the Philippines, Indonesia upon any Micronesia and the Pacific. Academics who were told that they had a important role to play in this by constructing a discursive historical cultural basis for this state projects which generally uncritically and even enthusiastically accepted (Chiu, 2000:135-6). For example, Taiwan was to become a center of Southeast Asian research (Chiu, 2000:136). The timing of this also has to do with the consolidation and convergence of political power between Lee Teng-hui's Taiwan Center faction of the Kuomintang (Lee having earlier marginalized the remaining mainlander factions) with the Taiwan centred Democratic Progressive Party (Chiu, 2000:104). Despite early resistance uses of the Austronesian identity concepts by Aboriginal intellectuals, the Austronesian concepts were eventually incorporated into this heavily funded state identity project.

In this State identity project, Aboriginal identity including their DNA are subjugated to goal of constructing a unique Taiwanese national identity and to serve Taiwan diplomatically. This was evident in a Taiwan Government News report on the opening ceremony of the Taiwan Government organized and sponsored 2002 "Assembly of Austronesian Leaders", which stated that, "The territory defined by the language group stretches from Easter Island to Madagascar and from New Zealand to the northern tip of Taiwan. It covers nearly one-third of the globe and represents a

population of nearly 300 million people.” Through this Austronesian subjectivity, Aborigines provide the linkage which is the basis of the claims that Taiwan is part of something very big, even potentially the Austronesian homeland, rather than just 23 million out of China's 1.3 billion.

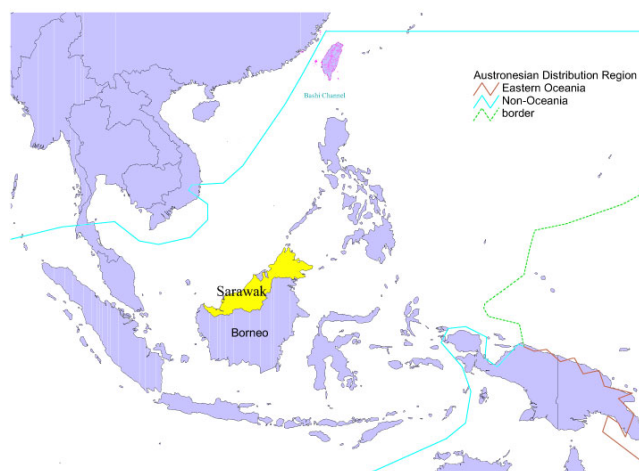


Figure.2 Austronesian Distribution Region ---Southeast Asia

Image: This map of Taiwan comes from the UC Berkeley Austronesian mapping project which is funded in part by the Shung Ye Museum of Formosan Aborigines which is in turn funded by a wealthy Taiwanese settler industrialist turned philanthropist (ECAI Austronesian project website; Munsterhjelm, 2004).



On the centre left, Taiwan President Chen Sui-bian, dressed as Rukai Aboriginal chief, along with other leaders opens the 2002 Assembly of Austronesian Leaders (2002 Assembly of Austronesian Leaders)

The same article then continues:

“A DNA analysis conducted by Mackay Memorial Hospital provided evidence of a genetic relationship between Taiwan's aboriginal peoples and peoples of Austronesian descent from other areas of the Asia-Pacific.” The article then commented on the opening ceremony speech by President Chen Sui-bian:

President Chen Shui-bian cited the nation's academic studies of Austronesian peoples, languages and cultures as well as recent efforts to preserve indigenous cultural assets. Chen expressed his desire to open the lines of communication with other Asia-Pacific countries, adding that the "go south" investment policy that the government is currently touting would further expand Taiwan's cooperation with other countries that share a common Austronesian ancestry.

In effect, we have a sweeping reaffirmation by the Chen Sui-bian administration of his predecessor Lee Teng-hui's earlier policies of linking Austronesian research with the “Go South” investment policies. Austronesian identity functions as part of Taiwan overseas capital accumulation circuits and diplomacy.

The most recent diplomatic use of Taiwan Aboriginal DNA occurred in 2004 with the signing of an agreement on Aboriginal cultural exchanges between the Taiwan Government's Council of Indigenous People and the New Zealand government. A Taiwan Government news report on this agreement which was signed by the Chairman of the Taiwan Government's cabinet level Council of Indigenous Peoples, Chen Chien-nien (a Puyuma Aborigine):

Despite many informal cultural exchanges between the two countries over the past few years, the conclusion of such an official agreement did not gain momentum until he [Chen Chien-nien] took a trip to New Zealand last month following the announcement that DNA analysis had provided scientists with a genetic link between the Maori and Taiwan's indigenous peoples (Lin Fang-yan, 2004).

No interestingly enough this genetic linkage is based in part upon the research of Jeffrey Chambers and genetics researcher at a New Zealand University. One of the things that was omitted in all the Taiwan press reports (such as Lin Fang-yan, 2004), I could find that site Chambers' research was the fact that Chambers research focuses upon alcoholism genes (Chambers et al, 2002). The basis of his major claim is that there are similarities in the frequency and type of her particular alcohol oxidization alleles called ALD2, ADH3, and ALDH2 (Chambers et al, 2002:949). Chambers et al

(2002:952) also made use of earlier genetics research done in the field of alcoholism related genetics on Taiwan Aboriginal peoples by Thommasson et al (1994) and Chen W.J. et al (1997). This earlier research which was *mobile* and *stable* was *combinable* with Chamber et al's (2002) Maori alcoholism related genetics research. There is also quite a sharp contrast in the relative valorization of these alcoholism genes. In alcoholism related research, they become the basis creating subjectivities of "genetically vulnerable" Aborigines but in diplomatic contexts they become the basis of informal diplomatic relations.

Conclusions:

Settler technologies of governance of Aboriginal peoples that have been developed over the years have frequently made recourse to science as a justification, most infamously social Darwinism.⁶ The new genetic research while not eugenics nonetheless appears to help reproduce hierarchies of privilege and power of settlers over Aboriginal peoples. This paper has attempted to consider how circuits of accumulation related to genetics research on Aboriginal peoples helps to act at a distance in what constitutes biocolonial governance. Taiwan Aboriginal peoples are subjugated in part through narratively constituted subjectivities, which are pervasive in policies and other forms dominant narratives throughout settler government and civil society. Rose and Novas' arguments about somatic individuals, which are based upon an analysis of newsgroups about those affected by genetic disorder known as Huntington's Disease, must be qualified significantly:

Somatic individuals, in this case those genetically at risk, engage with this knowledge as interested and avid consumers, aware of the range of knowledge products on the market, and demanding that their choice is constantly expanded. Within this configuration, geneticists and clinical researchers are assigned the responsibility and duty to produce new forms of knowledge that are available and applicable to persons suffering from this disease. The responsible-genetic subject becomes active in the shaping of the enterprise of science (Rose and Novas, 2000:506).

I have found no evidence to support these optimistic claims regarding Taiwan Aboriginal peoples.

⁶ The role of social Darwinism was held up as part of an idea put forward for a chartered companies similar to the British model in North Borneo or Cecil Rhodes "South African Chartered Company" with public shareholders in the 1907 book by the Japanese parliamentarian, Yasoburo Takekoshi, *Japanese Rule in Formosa*. He stated, "The law of natural selection will have full sway. Those savages who can be trained will be trained and those who are not capable of being trained and instructed will pass away. In this way various evils will be eradicated, and many of the savages be brought into the light of civilization" (Takekoshi, 1907:233)

Rather than finding the heroic narrative schema that Rose and Novas follow, I have found instead the hero-rescues-Aborigines narrative at work in Taiwan settler government and civil society as actively shaping Aborigines as "responsible-genetic subject[s]" in the case of alcoholism research. Similarly, the subjectivity of Aboriginal peoples as Austronesian, though originally utilized as part of Aboriginal resistance against One-China state ideologies, has now been thoroughly co-opted within Taiwan governmental discourses and policies regarding diplomatic relations and overseas investment.

In closing, this research paper points towards the necessity of more nuanced theorizing of genetic governance, particularly with regard to power relations between dominant groups and marginalized groups such as Aboriginal peoples.

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