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Culture and Wellbeing: The Case of Indigenous Australians

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Abstract A recurring theme in Indigenous affairs in Australia is a tension between maintenance of Indigenous culture and achievement of socio-economic 'equity': essentially 'self-determination' versus 'assimilation'. Implicit in this tension is the view that attachment to traditional cultures and lifestyles is a hindrance to achieving 'mainstream' economic goals. Using data from the National Aboriginal and Torres Strait Islander Social Survey, stronger attachment to traditional culture is found to be associated with enhanced outcomes across a range of socio-economic indicators. This suggests Indigenous culture should be viewed a part of the solution to Indigenous disadvantage in Australia, and not as part of the problem.

Keywords Indigenous · Culture · Wellbeing · Australia

1 Introduction

The Australian Aborigines were tribal peoples who maintained a hunter-gatherer existence. Over an estimated 40,000–60,000 years prior to European settlement, their customs and practices had evolved into a sophisticated relationship of sustainability with the Australian environment. From the arrival of the 'First Fleet' in Australia in 1788 and the subsequent emergence of Western society as the dominant culture, along with its market economy and associated social, legal and economic institutions, policy towards the Indigenous population has oscillated through a number of stages. It remains an issue of intense debate among Indigenous and non-Indigenous Australians alike.

The one point of consensus is that our past efforts have been a failure. For a wealthy country that prides itself on a sense of fairness and social justice, the disparity in living standards between Indigenous and non-Indigenous Australians should be totally

I would like to dedicate this paper to Deborah.

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unacceptable. It is evident in almost any conceivable measure of socio-economic wellbeing. At 59 years for Indigenous males and 65 years for Indigenous females, life expectancy at birth is around 20 years lower than for the non-Indigenous population; rates of suicide are more than double in at least some states, if not overall; age-adjusted rates of imprisonment 12.9 times higher (*23 times for juveniles!*) and the incidence of unemployment three times higher (SCRGSP 2007).

A recurring theme in the debate regarding policy to promote Indigenous economic development is the tension between preservation or maintenance of Indigenous culture and the achievement of 'equity' in socio-economic outcomes such as educational attainment, employment and income; essentially 'self-determination' versus 'assimilation'. Implicit in this tension is the view that attachment to traditional culture and lifestyles is a hindrance to the achievement of 'mainstream' economic goals.

This view provided the basis for the 'protection and uplift' policy devised by the House of Commons Select Committee in the 1830s, which included the formation of missions, cattle stations and reserves for Indigenous people. Church and state encouraged a 'positive policy' towards what was seen as the inevitable assimilation of Indigenous people into Western society. Attempts to 'civilise' the Indigenous population included many children being forcibly removed from their natural families, to become what we now know as 'the Stolen Generation'. This approach gave way to the emergence of 'self-determination' as the philosophy underlying Indigenous policy in the 1970s and 1980s. Self-determination embodies both a recognition of the legitimacy and value of Indigenous culture in its own right, and the belief that Indigenous people should be empowered to choose and pursue their desired balance between cultural maintenance and engagement with the mainstream economy.

In terms of their official policy, the Federal Labor Government of 1983–1996 supported the self-determination approach. Under the Liberal-National Coalition, which held Government from March 1996 to November 2007, Prime Minister John Howard rejected the self-determination approach as 'symbolic reconciliation', instead arguing that economic development was the key to success in Indigenous affairs, an approach it termed 'practical reconciliation'. Drawing justification from the release of the *Little Children are Sacred* report[1] and widespread media reporting of shocking cases of sexual abuse, violence, substance abuse and general dysfunction within Indigenous communities, the Howard Government mobilized the armed forces and police in June 2007 to enter remote Indigenous communities in the Northern Territory as part of the 'Emergency Intervention' (see Altman 2007; Hunter 2007a; Johns 2008). Debate continues on the merits of, and intentions behind, this policy. If nothing else, it at least served to give the appalling circumstances in which many Indigenous Australians live the attention it has long warranted.

Indigenous affairs again took centre stage in Australia, and captured considerable attention around the world, on the 13th of February 2008, when the incoming Labor Prime Minister Kevin Rudd made a formal apology from the Parliament of Australia to the Stolen Generation, and to Indigenous Australians more generally for past policies which "inflicted profound grief, suffering and loss on these our fellow Australians". Former Prime Minister Howard had consistently refused calls for such an apology. While the apology ignited hopes of new efforts to address Indigenous disadvantage, almost two years on the direction of the Labor Government's policy on Indigenous affairs remains unclear.

[1] *Ampe Akelyernemane Meke Mekarle* (Little Children are Sacred), Report of Northern Territory Board of Inquiry into the Protection of Aboriginal Children from Sexual Abuse (2007).

1.1 Seeking New Directions: Empirical Evidence Meets Ideology

While the increased focus on Indigenous disadvantage is to be welcomed, these tumultuous developments in Indigenous affairs also served to rekindle the self-determination versus assimilation debate [see, for example, the recent exchange between Hunter (2007a, 2008) and Johns (2008)]. Many commentators, Indigenous and non-Indigenous, have argued that getting Indigenous people into jobs is the best solution. Moreover, the 'failure' of the self-determination approach is popularly accepted and propagated in the Australian media, though I would take issue with this perception (see Dockery and Milsom 2007).

In considering the tension between Indigenous cultural maintenance and mainstream economic outcomes, I commence with the proposition that what we should really care about is Indigenous people's wellbeing. Achieving higher rates of employment is certainly a worthy pursuit in addressing economic disadvantage; unsubsidized employment even better. However, one would not pursue employment outcomes and integration with the mainstream economy at any cost. The experience of the Stolen Generation has surely taught Australians that much. For many Indigenous persons, and particularly those in remote communities, achievement of employment may require sacrificing elements of their culture, which may in turn have a negative impact upon their wellbeing. Indeed, many non-Indigenous Australians would not take a job if it required moving house, was too disruptive to their family life or they found the work morally objectionable.[2]

Further, the very factors that contribute to wellbeing for Indigenous people are likely to differ to those for non-Indigenous Australians and such differences in preferences can be expected to result largely from cultural differences (Uchida et al. 2004). This must raise questions over the appropriateness of standard socio-economic indicators. The non-acceptance of the legitimacy of different preferences founded in Indigenous culture and the assumption that traditional culture is a barrier to the socio-economic progress of Indigenous Australians, that underlies much of the assimilationist viewpoint, is well encapsulated by Johns:

> That there are parts, if not a great deal, of Aboriginal culture that retards Aboriginal advancement is well accepted. … The emphasis on sustaining Aboriginal land, culture and language ignores the effect on the inability to produce goods and services that the rest of society wants. The result has been unhappy and poor people. (2008, p. 65)

If there is a trade-off between culture and socio-economic outcomes, such as employment opportunity, the extent of this trade-off will differ across individuals according to their job-readiness, their existing degree of cultural attachment and their preferences, among other factors. For Indigenous people as a whole, therefore, one can think of an optimal rate of transition. Attempting to achieve integration too rapidly may lead to a net welfare loss, perhaps a very large welfare loss. But does the pursuit of employment for Indigenous people require sacrificing culture? Does the loss of culture reduce their wellbeing, and by how much? Does gaining mainstream employment increase wellbeing?

These are empirical issues, and cannot be answered by ideological debate alone. This paper uses data from the Australian Bureau of Statistics' 2002 National Aboriginal and Torres Strait Islander Social Survey (NATSISS) to present evidence on the link between

[2] For example, in a longitudinal survey conducted between 1994 and 1996 Australian jobseekers indicated a willingness to move house if offered a suitable job in only around half of all job-search episodes, and the figure is even lower for short-term episodes (ABS 1997, p. 37).

culture and indicators of socio-economic outcomes in a range of domains. This first requires some consideration of the meaning and measurement of 'culture'. This is provided in the following section. Section 3 offers a brief and necessarily inadequate introduction to Indigenous culture and develops measures of Indigenous 'cultural attachment' using the NATSISS data. Section 4 presents the results of multivariate models of the link between cultural attachment and socio-economic outcomes. Conclusions are offered in Sect. 5.

2 The Meaning and Measurement of Culture

The term culture has a wide range of interpretations depending upon the discipline from which it is considered (Hofstede and McCrae 2007, pp. 58–61; Throsby 2001, pp. 3–7). However, all approaches to defining culture essentially involve classifying people into groups on the basis of some common connection between them, and identifying ways in which these people as a group differ from persons without that connection. Defining culture in practice therefore requires, first, identification of the relevant connections by which to define groups and, second, identification of the relevant dimensions in which 'differences' between people are to be measured.

The 'connectors' most commonly used are the nation state (country of birth or country of origin), ethnicity and religious affiliation. There is no clear consensus upon what should be measured in order to identify 'cultural' differences between people of different cultures. Dimensions used have included anthropological data, the degree of economic and technological evolution, values, and the personality traits of the individuals within the society (Hofstede and McCrae 2007, pp. 60–61). Hofstede's own 'operating definition' of culture is:

> The collective programming of the mind that distinguishes one group or category of people from another. This stresses that culture is (a) a collective, not individual, attribute; (b) not directly visible but manifested in behaviors; and (c) common to some but not all people.
> (Hofstede and McCrae 2007, p. 58)

Throsby distinguishes between two senses in which the term culture is used. One is the set of beliefs, customs, values and practices common to a group, and possibly characterised in the form of symbols, text and language which themselves play a role in helping to distinguish the group's distinctive identity. The second relates to the activities people undertake and the products of those activities. In this sense the term is more likely to be used as an adjective, such as in 'cultural goods', 'cultural institutions' and 'cultural industries' (Throsby 2001, p. 4).

Guiso et al. (2006, p. 3) warn that definitions of culture must be defined in sufficiently concrete terms to prevent 'cultural explanations from becoming simple ex post rationalizations'. This stresses the point that any definition adopted must be empirically refutable for analyses to meaningfully contribute to our understanding of the role of culture in economic outcomes. Thus Guiso et al.'s definition is deliberately narrow:

> … we define culture as those customary beliefs and values that ethnic, religious, and social groups transmit fairly unchanged from generation to generation. (2006, p. 2)

Further, they explicitly nominate two potential channels of causal influence from culture to economic and social outcomes, namely beliefs (or priors) and values (encompassing preferences). Casson (1993) similarly appealed to values and beliefs in describing culture

as a 'collective subjectivity'. Subjectivity relates to both individual values (or preferences) and the likelihoods that individuals attach to events. Casson argues that individuals will develop similar preferences and beliefs if they are exposed to the same set of influences. "These influences represent the culture of the group to which the individuals belong" (1993, p. 420). The preferences are seen to be influenced by the 'moral aspect' of the culture and the beliefs by 'technical aspects'. Triandis (2000) also considers generational transmission as a defining characteristic of culture itself, but instead considers the shared patterns of attitudes, beliefs and norms as 'cultural syndromes':

> Culture is to society what memory is to individuals. It refers to tools and ideas that are shared and transmitted to succeeding generations because they were once practical at some point in time. (2000, p. 13)

For the purposes of this analysis a definition based on beliefs and values transmitted over generations is the most fruitful. The transmission through generations is an important dimension. In the United States, for example, economic and social marginalisation along with legal exemptions has led to Native Indian Reserves operating casinos as a means to generate income. However, despite there being a clear observable and measurable association of Indian communities with gambling activities, we would reject it as being considered a defining feature of the culture since it has no basis in intergenerational traditions. Similarly, contemporaneously identified phenomena described as 'youth culture', 'pop culture' or 'consumer culture' lie outside our definition of culture.

2.1 Measuring and Modelling Culture

I argue above that culture needs to be defined along two dimensions: the 'connections' between individuals considered to be of the same culture and the characteristics of those individuals that make them distinct. Two broad measurement issues are therefore how to measure differences between cultures, and how to assign individuals as being of a given culture or not of that culture.

In terms of measuring differences between 'cultures', Hofstede and Triandis propose a number of key dimensions upon which cultures differ between societies, including the distribution of power embodied in institutions and organisations; individualism versus collectivism; the extent to which roles are determined by rules and institutions and tolerance of individuals whose behaviour deviates from those social expectations (Hofstede 2001; Hofstede and Bond 1998; Hofstede and McCrae 2007; Triandis 2000). The 'cultural' dimensions derived by Hofstede are based upon attitudinal differences between countries identified from the IBM company's international employee surveys, conducted between 1967 and 1973. This general approach of measuring culture as differences in value 'norms' between groups of people has since been extensively pursued as data well suited to this purpose have become available, notably through the World Values Survey (see Ingelhart 1997 and www.worldvaluessurvey.org/).

While the measurement of culture is necessary for empirical analyses of the links between culture and economic outcomes, this literature remains relatively undeveloped (see Dockery 2009b for a more detailed review). That the values and beliefs individuals hold have significant impacts upon economic outcomes has long been recognised in economics. It dates at least back as far as Adam Smith's 1759 *The Theory of Moral Sentiments*. Guiso et al. note that Karl Marx saw the direction of causality running in the opposite direction: the relationships of production and its underlying technology determined social structures. Writers such Max Weber and Karl Polanyi saw religion

as contributing to the orderly functioning of markets and society (see Guiso et al. 2006, pp. 5–7).

That culture plays *some* role in economic outcomes has hence never been denied in the economics literature, but it has received little attention relative to what that discipline perceives to be the main deterministic factors, such as natural resources, physical capital, technology, education and other forms of human capital. This may be because economists perceive the contribution of culture in explaining growth rates to be relatively trivial (Throsby 2001, pp. 61–62). However, Guiso et al. suggest the reason for economists' reluctance to engage culture as a deterministic variable may also be that measurement is simply too difficult:

> 'The notion of culture is so broad and the channels through which it can enter the economic discourse so vague that it is difficult to design testable hypotheses.' (2006, p. 1).

In line with Guiso et al's warning above, a continuing weakness of the literature is that measures of culture are rarely linked to a theoretical understanding of what 'culture' means. In much of the empirical literature relating to macro-economic outcomes, countries or nation-states are used as the unit of analysis. This largely reflects the form in which data have been available rather than theoretical considerations and has obvious limitations to the extent that separate cultures exist within countries, and cultures transcend national borders. Probably the most common approach to measuring culture is to focus on such categories to derive a binary representation of culture: if a person is a member of that group, however assessed, then they are considered to be 'of that culture'.

Hofstede and his collaborators find cross-country correlations between some of the cultural dimensions uncovered through the IBM surveys and economic growth performance (Franke et al. 1991; Hofstede and Bond 1998; Gray 1996). While they propose causal links between these values and economic growth, such as arguing that a Confucian culture is conducive to entrepreneurship, these are again essentially *ex post* rationalisations. Similarly, cultural explanations have been suggested for a number of phenomena which could not be readily accounted for by mainstream economic analyses. These include the remarkable growth rates of the East Asian 'tigers' prior to the Asian Economic Crisis, and before that the post-war economic success of Japan (Casson 1993; Gray 1996; Hofstede and Bond 1998; Throsby 2001, pp. 64–65). Gray (1996) suggests that culture may have a significant indirect effect as well as a direct effect on economic performance through its effect on people's willingness to accept high growth policies at the expense of immediate benefits.

Thriftiness is the value that seems to appear most often as a 'cultural dimension' with a deterministic relationship with aggregate economic performance. This can be attributed to its straight-forward translation to a variable within the accepted growth-accounting framework—savings, which facilitate capital investment. Evidence that savings rates or the importance placed on thriftiness as a value differs between persons of different religious denominations has contributed to savings being adopted as a 'cultural' measure. However, evidence contrary to this notion is presented by Carroll et al. (1994), who find no cultural effects on savings for recent immigrants to Canada. Savings of immigrants are lower than for Canadian-born citizens, but are independent of their country of origin.

The savings link aside, a general weakness of the macroeconomic literature remains the lack of clearly identified channels through which cultural differences impact upon economic outcomes. As with the social capital literature (Fukuyama 1995; Putnam 1993), several studies have emphasised trust as an important cultural variable (see Guiso et al.

2004; Tabellini 2006), and this can be explained through its impact on the efficiency of economic exchange. Other approaches used to generate 'instruments' to capture exogenous cultural effects in cross-country empirical work have included variables based on linguistic traits (Alesina and Giuliano 2007) and historical variables for countries (Tabellini 2006). However, this tends not to tell us much about the characteristics of the culture, or the causal channels between culture and outcomes.

Ideally this should be informed by evidence at the microeconomic level. Countless studies have identified differences in individuals' outcomes by 'independent' variables which could be considered as reflecting cultural background, such as language, country of origin, religion or ethnicity. Very few studies, however, attempt to relate these 'effects' to characteristics of the associated culture. More often they are included as 'control' variables to enable the analyst to identify other effects independently of any confounding cultural effects. Several studies have taken differences in outcomes (such as earnings) by religious denomination to reflect 'cultural' differences in values (Chiswick 1983; Gruber 2005; Heineck 2004). The rate of female economic participation is one outcome that is particularly sensitive to ethnic and religious background (Fernández 2005; Heineck 2004; Reimers 1985). Fernández uses an epidemiological approach by relating female labour force participation rates and data on attitudes in the country of ancestry of second generation American women to show that cultural proxies significantly shape women's work outcomes.

To facilitate empirical investigation of the links between culture and Indigenous socioeconomic outcomes, and in light of the discussion above, an explicit definition of culture is adopted in this study. Culture is taken to mean beliefs and values that have been transmitted relatively unchanged through generations, and that are manifest in idiosyncratic symbols, languages and practices.

3 Indigenous Culture and Measurement

The cultures of Indigenous Australians are believed to be among the oldest continuous cultures in the world and any comprehensive description of those cultures and how they differ from the culture of non-Indigenous Australians is beyond the scope of this paper. One point to note is that while we sometimes speak of 'Indigenous culture' as if it were one homogenous culture, there is in reality considerable diversity among Indigenous peoples from different tribes and regions, as well as many different Indigenous languages. At European settlement there were an estimated 500–700 tribal languages in common use, and in the mid-1980s there were still some 200 known by at least one speaker (Christie 1985, p. 16).

A common feature of Australian Indigenous cultures is the emphasis placed on kinship and the relationships within families and other members of Indigenous communities. That these relationships have special meanings and recognition of them as an important part of Indigenous culture seems pervasive across Indigenous groups and contrasts with the emphasis placed on the nuclear family within non-Indigenous culture (see, for example, Christie 1985; Greer and Patel 2000; Long et al. 2007; Thompson et al. 2000). Thompson et al. (2000, p. 728) offer the following as distinguishing characteristics of Indigenous culture:

Centrality of family and the extended kinship system
Low emphasis on individual ownership of possessions relative to obligations and contributions to the other members of the family and community
The role of connections to land and to the past in their sense of self-identity. "Individuals identify with where they are from because this indicates who they are and where their 'home country' is."

Christie (1985) discusses the differences between the 'world view' as seen by people of Western cultures and by Indigenous people. He suggests the Western view is one of the environment having to be controlled and manipulated for survival, and this gets extended to the social world. In contrast, the Indigenous world view is one of co-operation and co-existence with the forces of nature, and this is generalized to fellow humans. Cooperation with the social group is emphasized rather than control. Further, Western people have a positive view of knowledge: the world is a certain way and knowledge can be gained by observing, collecting data and studying it. Instead, Indigenous people believe the way the world is has special meaning, which unites people, land and songs.

Like Thompson et al. (2000), Greer and Patel identify kinship and the relatedness to, and reciprocal relationships with, the land as identifying characteristics of Indigenous culture. They further stress the 'yin' value of relatedness as a core Indigenous value in terms of a preference for cooperation over competition. In relationships with others and in making transactions: '(t)he value is in the quality of the personal interaction, not in the objects exchanged or in contractual processes.' For Indigenous people the duality between working and living, or work and play does not hold. The value of work is in contributing to the community and money is accumulated to spread favours among kin, which may be seen as a form of social capital (Greer and Patel 2000).

3.1 Measuring Indigenous Culture

All respondents to the NATSISS are of Indigenous descent, and can be deemed to be 'of Indigenous culture'. Consistent with the approach of defining culture as intergenerationally transmitted values and preferences, the strength of their 'attachment' to this culture is taken to mean the importance placed upon values, customs, activities and goods which can be considered as having been passed through generations and have a symbolic meaning to Indigenous people. Unfortunately no attitudinal variables relating to values or preferences are available in the data. Thus the 'importance placed' cannot be directly measured, but must be inferred from reported behaviour.

The 2002 NATSISS achieved a sample of 9,359 individuals from 5,887 different households. The variables contained in Table 1 are selected as being ones that might be used to indicate strength of attachment to Indigenous culture. The set of variables included point towards two broad dimensions of cultural attachment: identity and participation. Identity encompasses spoken languages; recognition of clan, tribal group or language group and recognition of Homelands. Participation relates to attendance at, or participation in, cultural and related social activities.

To explore these dimensions further a set of dummy variables was created covering the cultural indicators listed in Table 1 and a factor analysis performed to identify common associations among the variables that summarise cultural dimensions.[3] The results suggest one dominant factor, or linear combination of the variables, is capable of explaining a large

[3] More specifically, the SAS 9.0 Factor procedure was used with principal components method.

Table 1 Potential indicators of attachment to Indigenous culture

Indicator	Percent of total sample
Main language spoken at home	
Aboriginal language	15.1
Torres Strait Islander or Other language	4.0
English	80.9
Whether speaks an Indigenous language	
Speaks an Indigenous language	28.5
Speaks only some Indigenous words	22.3
Does not speak an Indigenous language	49.1
Identifies with clan, tribal/language group	58.6
Recognises homelands	73.0
And lives on homelands	26.0
And allowed to visit homelands	45.7
Attended cultural event in last 12 months	72.9
Type of cultural event attended	
Funeral	54.3
Ceremony	25.8
Sports carnival	35.2
Festival/carnival involving arts, craft, music or dance	35.8
Involvement with Indigenous organisation	27.1
Participated in cultural activity in last 12 months	27.3
Participated for payment	8.5
Participated without payment	18.8
Type of cultural activities received payment for	
Arts or crafts	6.4
Music, dance or theatre	2.2
Writing or telling stories	2.6
Type of activity participated in without payment	
Arts or crafts	10.8
Music, dance or theatre	5.1
Writing or telling stories	9.8
Involved in social activities in last 3 months	88.2
Type of social activities involved in	
Recreational or cultural group activities	28.5
Community or special interest group activities	21.4
Attendance at ATSIC or Native Title meetings	4.3
Funerals, ceremonies or festivals	17.4
Fishing or hunting in a group	17.7

proportion of the variance in the data (with an Eigenvalue of 4.96). This factor is most strongly correlated with involvement in the social activities of 'funerals, ceremonies or festivals' and 'fishing or hunting in a group'; speaking an Indigenous language (at home or otherwise); and attending a cultural event of 'ceremony'. The loadings for each variable for this factor are reported in Appendix 1. Using these correlations a 'cultural attachment'

Table 2 Cultural attachment by remoteness

Differences in the means are highly significant between any two remoteness levels with the exception of major cities and outer regional Australia

ASGC remoteness structure	*N*	Mean
Major cities of Australia	1,482	−0.063
Inner regional Australia	1,251	−0.080
Outer regional Australia	2,509	−0.052
Remote and very remote Australia	4,117	0.171

score is calculated for each individual. This is standardised such that the resulting cultural attachment variable has a mean of zero and standard deviation of one for the full sample.

As a test of the validity of this instrument as a measure of cultural attachment, two hypotheses are investigated. The first is that Indigenous people living in more remote areas are likely to have a stronger degree of cultural attachment. The second is that, due to the ongoing process of cultural destruction, Indigenous youth will have lower levels of cultural attachment than their adult counterparts. The figures reported in Table 2 support the hypothesis with regard to remoteness. Note that a high proportion of Indigenous Australians live in remote and regional areas, in contrast to non-Indigenous Australians, of whom over 70% live in capital cities or major urban centres. Thus it is essential in any analysis to control for differences between regions. The mean for the cultural attachment variable is by far the highest for Indigenous persons living in remote and very remote Australia. There are only small differences in the means for those living in inner or outer regional Australia or major cities.

The differences in means between age groups are in fact very minor, but again offer broad support for the use of the factor score as a measure of cultural attachment. Average cultural attachment generally trends upwards with age, being lowest for persons aged 15–19 and highest for those aged 60–64. Cultural attachment drops off for those aged 65 and over, but this is likely to reflect old age imposing limits on people's capacity to attend and participate in cultural activities.[4]

4 Modeling Results

Multivariate regression models are used to identify the relationship between cultural attachment and indicators from three separate domains of socio-economic wellbeing: health, risky behaviour and contact with the justice system. More specifically, the measures are self-assessed health status, whether the individual's level of consumption of alcohol in the past two weeks was considered as 'high risk', and whether they had been arrested by the police in the past five years. Employment status and years of education completed are also modeled. However, in line with the discussion above regarding potential tensions

[4] A second measure of cultural attachment was developed based on a 'hierarchical' allocation (see Dockery 2009a, b). The motivation for this second measure was firstly as a sensitivity or robustness test to the principal measure of cultural attachment. Second, the value of the cultural attachment score is strongly influenced by the individual's activities. This potentially creates problems of endogeneity in which declining socio-economic outcomes, say poor health, may be argued to cause the decline in cultural attachment. The hierarchical measure gives much greater weighting to fixed cultural traits of speaking an Indigenous language at home, fluency in Indigenous language, recognition of homelands and identification with a clan, tribal or language group. These are unlikely to be affected by the outcome measures being modeled. Similar results to those reported in Tables 3 and 4 are achieved when the hierarchical measure of cultural attachment is used instead of the measure based on the factor analysis.

between culture and mainstream economic integration, these are not strictly intended as indicators of wellbeing.

The models estimated include only gender, age and remoteness as additional control variables. This reduced form approach is taken to allow the full effects of cultural attachment to be captured in the main variable of interest rather than dispersed through potentially mediating variables. For example, level of income or marital status may be correlated with socio-economic wellbeing, but are also likely to be related to cultural attachment. Exploration of mediating variables between cultural attachment and socio-economic outcomes—or the mechanisms through the effect of culture is transmitted—is of importance, but has not been further explored in this paper.

Self-assessed health is an ordered categorical variable, with categories of 'excellent', 'very good', 'good', 'fair' or 'poor' health, and hence an ordered probit model is estimated. Having been arrested, risky consumption of alcohol and employment status are binary outcome variables and these models are estimated using the binary probit. The survey data allow identification of the years of high school completed and any post-school qualifications. From this information a variable measuring years of post-primary education is created which ranges from zero to five corresponding to the number of years of highschool completed; eight for completion of a university degree and 10 for completion of a post graduate degree. A simple ordinary least squares regression is used to estimate the model for years of post-primary education, with the sample restricted to persons aged 21 and over.[5]

Table 3 reports the results for models which include controls for geographical location (remoteness). It is possible the relationship between cultural attachment and wellbeing may be non-linear. For example, those with strong attachment and those with very weak attachment to their traditional culture may have better outcomes than those somewhere between the two. To account for this, the cultural attachment variable is included as a series of four mutually exclusive dummy variables, labeled strong, moderate, weak and minimal, corresponding to the quartiles of the distribution of the cultural attachment factor score.

The results provide strong evidence of a positive effect of cultural attachment on socio-economic outcomes, and some indication of the 'U' shaped relationship proposed above. Those with strong attachment have significantly better self-assessed health. Those in the mid-range of cultural attachment report worse health than those with minimal cultural attachment, although the differences are not significant. It is also Indigenous people with weak or moderate cultural attachment that are the most likely to have been arrested in the past five years relative to both those with minimal or strong attachment. Those with strong cultural attachment are the least likely to have consumed alcohol at risky levels, while it is those with moderate attachment who are the most likely to have engaged in this behaviour.

Turning to 'mainstream' outcomes, those with strong cultural attachment are significantly more likely to be in employment than Indigenous people with moderate or minimal attachment, and it is those with weak attachment with the poorest employment outcomes—poorer even than those with minimal cultural attachment. Educational attainment increases with cultural attachment, such that those with strong and moderate attachment have

[5] Completion of a vocational certificate level I or II was deemed equivalent to one half a year's education, a trade or Certificate III/IV equivalent to 1 year and a Diploma to 2 years. The finding of a positive effect of cultural attachment on educational attainment is insensitive to alternative specifications, including an ordered probit model of highest qualification attained or a binary probit model of the probability of completing high school.

Table 3 Socio-economic outcomes: regression results, NATSISS 2002

	Self-assessed health status (probit)	Arrested in last 5 years (probit)	Risky alcohol consumption in past 2 weeks (probit)	Employed (probit)	Years of post-primary education (OLS)
Intercept	−1.225***	−1.439***	−0.801***	−0.028	3.677***
Intercept2	0.858***				
Intercept3	1.851***				
Intercept4	2.671***				
Male	0.085***	0.686***	0.373***	0.398***	−0.092**
Aged 15–19	0.589***	−0.096*	−0.409***	−0.588***	
Aged 20–24	0.427***	0.284***	0.127***	−0.127***	0.279***
Aged 25–34	0.278***	0.265***	0.021	−0.115***	0.272***
Aged 35–44	–	–	–	–	–
Aged 45–54	−0.302***	−0.331***	−0.163***	−0.088*	−0.645***
Aged 55–59	−0.591***	−0.795***	−0.539***	−0.344***	−1.156***
Aged 60–64	−0.608***	−0.792***	−0.769***	−0.924***	−1.560***
Aged 65 and over	−0.710***	−1.470***	−0.985***	−1.768***	−2.028***
Geographical location					
Major cities	–	–	–	–	–
Inner regional	−0.034	−0.038	0.026	−0.130***	−0.462***
Outer regional	0.001	−0.005	0.056	−0.155***	−0.614***
Remote and very remote	−0.007	−0.001	0.221***	0.046	−1.112***
Cultural attachment:					
Strong	0.166***	0.073	−0.229***	0.144***	0.377***
Moderate	−0.020	0.205***	0.109***	0.002	0.354***
Weak	−0.032	0.188***	0.057	−0.118***	0.098*
Minimal	–	–	–	–	–
Observations	9,337	9,359	9,328	9,359	7,829
Log Likelihood (R^2)	−13,339	−3,718	−4,994	−5,938	(0.18)

***, ** and * denote the coefficient estimate is significantly different from zero at the 1, 5 and 10% level, respectively

typically completed about one-third of a year more education than those with minimal attachment.[6]

For these measures, geographical remoteness appears to have an affect only in the case of employment opportunity and educational attainment. Employment is lowest in inner and outer regional areas, while years of education completed decline with remoteness and this is likely to reflect declining access to educational institutions in more remote areas. Of greater interest here is the possibility that the relationship between culture and socio-economic outcomes may depend upon the geographical context. To account for this possibility, each model is estimated separately for the four remoteness classifications.

[6] Hunter has previously presented evidence that Indigenous 13–17 year olds are substantially more likely to attend school if they speak an Indigenous language than those who do not (2007b, Table 3).

Table 4 Socio-economic wellbeing: Probit model results by remoteness, NATSISS 2002

Dependent variable and degree of cultural attch.	Major cities	Inner regional	Outer regional	Remote and very remote
Self-assessed health status				
Strong	0.071	0.099	0.122*	0.213***
Moderate	0.005	−0.001	−0.049	−0.003
Weak	0.034	−0.072	−0.029	−0.060
Minimal	–	–	–	–
Arrested in last 5 years				
Strong	−0.250*	0.082	0.108	0.122
Moderate	0.126	0.340***	0.197**	0.222**
Weak	0.153	0.345***	0.101	0.221**
Minimal	–	–	–	–
Risky alcohol consumption				
Strong	0.006	0.204	−0.033	−0.381
Moderate	−0.005	0.157	0.110	0.078
Weak	−0.159	0.233**	0.058	0.074
Minimal	–	–	–	–
Employment				
Strong	0.418***	0.403***	0.166**	0.075
Moderate	−0.030	−0.128	−0.004	0.050
Weak	−0.190**	−0.090	−0.070	−0.127
Minimal	–	–	–	–
Observations	(1,480–1,482)	(1,236–1,251)	(2,505–2,509)	(4,095–4,117)
Years of post-primary education				
Strong	1.468***	0.847***	0.747***	−0.125
Moderate	0.458***	0.175	0.331***	0.187*
Weak	0.284*	0.029	0.023	0.009
Minimal	–	–	–	–
Observations	(1,198)	(1,021)	(2,137)	(3,473)

***, ** and * denote the coefficient estimate is significantly different from zero at the 1, 5 and 10% level, respectively

For brevity the full results from these 20 models are not reported. Rather, the estimates for cultural attachment and associated significance levels are summarised in Table 4.

In each case the default or 'comparison' category is those persons in the corresponding region with minimal cultural attachment (the bottom quartile of the index). These results suggest that it is in outer regional and remote Australia that strong attachment to culture is important for good health. Irrespective of the geographical context, those with moderate or weak cultural attachment have a higher likelihood of having been arrested compared to those with either minimal or strong cultural attachment. It is in the major cities that the maintenance of attachment to traditional culture seems most strongly associated with a lower likelihood of Indigenous Australians getting into trouble with the law.

In terms of employment outcomes, higher employment rates among those with strong cultural attachment are particularly evident in the major cities and inner regional centres, although there is also a significant positive association in outer regional Australia. Some of

the relationship between employment and culture may be attributable to the role of the Community Development Employment Program, which can contribute both to generating employment and to cultural maintenance in Indigenous communities. However, if this was the sole factor driving the results we would expect the relationship between culture and employment to be strongest in the remote and very remote areas where the program accounts for a significant proportion of Indigenous employment. That the relationship is strongest in the major cities and inner regional areas suggests culture does play some additional role. The positive association between cultural attachment and educational attainment applies in each region except remote and very remote Australia.

4.1 The Stolen Generation

For those willing to be asked about the topic, data are available on whether or not the respondent was removed from their natural family and whether other family members were removed. Including a variable derived from this information in the models above provides a straightforward test for evidence of any lasting impact of the policy of forcibly removing Indigenous children from their parents upon their wellbeing. However, the initial motivation for exploring these data items was to see if members of the Stolen Generation suffered a measurable loss of cultural attachment, and whether that was passed onto their descendents. The *a priori* assumption was that members of the Stolen Generation and their direct descendents would report lower cultural attachment than other Indigenous persons, thus providing 'exogenous' variation in cultural attachment that could be used as an instrumental variable for the purposes of identifying the impact of cultural attachment on socio-economic outcomes.

The findings were in complete contrast to expectations. After excluding individuals who chose not to answer those questions, around 17% of the sample was identified as either having been removed from their natural family or as direct descendents of people who were removed. These people were actually found to have slightly higher measured cultural attachment. A possible explanation for this result is that members of the Stolen Generation and their children have taken compensatory steps to re-engage their culture. Given the now unclear theoretical grounds for using membership of the Stolen Generation as an instrument for cultural attachment, that approach has not been pursued in this paper.

The actual affects of being of (or an immediate descendant of) the Stolen Generation on wellbeing are less surprising. Table 5 reports the coefficients that are obtained when the Stolen Generation variable is added to each of the models reported in Table 3. The legacy of these policies is still apparent in significantly worse health status and higher incidences of arrest and alcohol abuse. Even though these policies were intended to accelerate the integration of Indigenous people into the mainstream economy, the results pertaining to

Table 5 Estimated effect of being from the Stolen Generation on socio-economic wellbeing: regression model results, NATSISS 2002

	Self-assessed health status (probit)	Arrested in last 5 years (probit)	Risky alcohol consumption (probit)	Employed (probit)	Years of post primary education(OLS)
Coefficient	−0.136***	0.283***	0.122***	−0.127***	0.048
Observations	8,889	8,902	8,876	8,902	7,430

Stolen Generation indicates individual or individual's parents were removed from natural family

***, ** and * denote the coefficient estimate is significantly different from zero at the 1, 5 and 10% level, respectively

employment outcomes suggest they had exactly the opposite effect, and provided no significant benefit in terms of educational attainment.

5 Conclusions and Discussion

While intense debate continues regarding the direction that Australian policy should take in addressing Indigenous disadvantage, or in 'closing the gap', there are two points upon which there can be little disagreement:

1. Our policies to date have been a dismal failure, and
2. The deplorable circumstances in which many Indigenous peoples continue to live require urgent attention.

Another point which upon which I would like to think there was general agreement is that the severity of the crisis facing Indigenous Australians must be addressed for its own sake. Australians should care, first and foremost, about the wellbeing of those Indigenous people in need. This surely involves maintaining the things that they value, not destroying them. It can be readily appreciated why many believe that getting Indigenous Australians into jobs may be the best way to address Indigenous disadvantage. However, I have argued here that whether this is the most effective way to improve the lot of Indigenous Australians is an empirical rather than ideological matter. Moreover, no one approach is likely to be optimal for all Indigenous Australians irrespective of their circumstances.

In the absence of any established methodology, the approach taken in measuring and modeling Indigenous culture in this paper must be considered exploratory. Nonetheless, I believe the empirical evidence presented has important implications for policy in addressing Indigenous disadvantage. Firstly it confirms that there may well be negative impacts on wellbeing if employment and other 'assimilationist' outcomes are pursued at the expense of culture. Secondly, it strongly supports the view that there are other means by which Indigenous disadvantage can be addressed, and that the restoration of Indigenous attachment to their culture may be an integral part of the solution. Strong attachment to traditional culture seems to be statistically associated with better outcomes across a diverse range of dimensions of socio-economic wellbeing. Strong cultural attachment is associated with better health and a lower likelihood of engaging in risky alcohol consumption. It is those with intermediate levels of cultural attachment that are most likely to have been arrested, compared to those with either strong or minimal attachment. This may be indicative of the isolation, confusion and the feelings of loss of control and self-esteem that often beset people trying to 'live between two cultures' (see Trudgen 2000).

The indicators of wellbeing were not arrived at by any process of 'data mining' to achieve significant results—they were chosen *a priori* as those well-suited within the NATSISS data to capture life aspects that have featured prominently in the recent discourse on dysfunction in Indigenous communities; namely health, lawlessness and alcohol abuse and truancy. I am confident that the results are representative of a more general positive association between cultural attachment and wellbeing. The wellbeing measures analysed within the paper should also been seen as measures of the *symptoms* of Indigenous disadvantage, not *causes* of Indigenous disadvantage. Trudgen (2000, Chapter 13) documents in detail the many causal factors that have resulted in these symptoms emerging for Indigenous Australians—including the loss of control, loss of meaning, feelings of helplessness, accumulated effects of past treatment and the alienation that arises from the loss of one's own culture and attempts to comply with a new and bewildering dominant culture.

It must be stressed that the evidence presented here cannot be taken to imply a causal relationship between stronger cultural attachment and improved outcomes against these measures; only one of association. What can be claimed is that the evidence is consistent with the hypothesis that continuity of traditional Indigenous culture provides a degree of protection against those underlying causal factors documented by Trudgen. It is inconsistent with the view of those such as Johns (cited above) that Indigenous culture acts as a barrier to improved socio-economic outcomes. Importantly, the positive associations with cultural attachment extend to employment outcomes and educational attainment. So even if one does believe that getting Indigenous people through school and into jobs is the ultimate solution, cultural maintenance should not be seen as a barrier but as a potential part of the strategy to enhance mainstream economic outcomes. It should be noted, however, that the findings relating to employment outcomes were not consistent using an alternative measure of cultural attachment (see Dockery 2009b), and this remains one of the intended topics for further investigation. What is less ambiguous is that the most radical examples of the assimilation approach—the forced removal of Indigenous children from their natural families—has had a lasting negative impact on wellbeing, and this does extend to poorer employment outcomes.

Establishing causality will require the formation and testing of hypotheses about the mechanisms through which the effect of culture on socioeconomic outcomes is transmitted. This is a priority for future research which will require richer data and more sophisticated analytical techniques. Given the diffuse nature of the outcomes found here to be positively associated with cultural attachment, my belief for now is that maintenance of traditional Indigenous culture must impact upon underlying factors that are quite intrinsic to human wellbeing; factors such as self-esteem, self-efficacy and a positive sense of self-identity.

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Appendix 1: Factor Scores (Loadings) for Calculating Index of Cultural Attachment

Table 6 Loadings for the 'cultural attachment' factor

Variable	Loading
Involved in social activities in last 3 months—funerals, ceremonies or festivals	+0.76816
Involved in social activities in last 3 months—fishing or hunting in a group	+0.75434
Speaks an Indigenous language	+0.67960
Attended cultural event in last 12 months—ceremony	+0.66737
Main language spoken at home is Indigenous	+0.66557
Involved in social activities in last 3 months—recreational or cultural group activities	+0.62519
Attended cultural event in last 12 months—sports carnival	+0.56721
Attended cultural event in last 12 months—funeral	+0.56122
Identifies with clan, tribal/language group	+0.55641
Attended cultural event in last 12 months—involvement with Indigenous organization	+0.30582
Attended cultural event in last 12 months—festival/carnival involving arts, craft, music or dance	+0.44941

Table 6 continued

Variable	Loading
Participated in cultural activity in last 12 months—writing or telling stories without pay	+0.22985
Participated in cultural activity in last 12 months—writing or telling stories for payment	+0.20586
Participated in cultural activity in last 12 months—music, dance or theatre for payment	+0.20822
Participated in cultural activity in last 12 months—arts or crafts for payment	+0.29557
Participated in cultural activity in last 12 months—arts or crafts without payment	+0.11582
Recognises homelands and lives on homelands	+0.31174
Recognises homelands and allowed to visit homelands	+0.16574
Participated in cultural activity in last 12 months—music, dance or theatre without payment	+0.24566
Speaks only some Indigenous words	−0.01108
Involved in social activities in last 3 months—community or special interest group activities	+0.44073
Involved in social activities in last 3 months—attendance at ATSIC or Native Title meetings	+0.44317
Recognises homelands only (does not live on or visit)	−0.04393

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