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ScienceDirect
Cognitive Development 22 (2007) 392–399
COGNITIVE DEVELOPMENT

Short report

Aboriginal language knowledge and youth suicide

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Abstract

This brief report details a preliminary investigation into how community-level variability in knowledge of Aboriginal languages relate to "band"-level measures of youth suicide. In Canada, and, more specifically, in the province of British Columbia (BC), Aboriginal youth suicide rates vary substantially from one community to another. The results reported demonstrate that not only did this simple language-use indicator prove to have predictive power over and above that of six other cultural continuity factors identified in previous research, but also that youth suicide rates effectively dropped to zero in those few communities in which at least half the band members reported a conversational knowledge of their own "Native" language.
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Keywords: Adolescent development; Language; Youth suicide; Aboriginal

The evidence to be reported here – data bearing on the human costs associated with the eminent demise of the most endangered of Canada's indigenous languages – grows out of a broader program of developmental and cross-cultural research aimed at documenting possible relations between community-level markers of what is termed here "cultural continuity," and the health and wellbeing of Aboriginal youth. The common theme that cuts across all of these research efforts is that any threat to the persistence of personal or cultural identity poses a counterpart threat to individual or community wellbeing. As our earlier research has made clear, Aboriginal "bands" that *lack* various markers of cultural continuity (operationalized here using band-level measures of community control over the delivery of health, education, child protection and policing services, and the achievement of a degree of self-governance, secure access to traditional lands, and the construction

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0885-2014/$ – see front matter © 2007 Elsevier Inc. All rights reserved.
doi:10.1016/j.cogdev.2007.02.001

of facilities for preserving cultural artefacts and traditions) regularly experience *heightened* rates of youth suicide and early school leaving (Chandler & Lalonde, 1998, in press; Chandler, Lalonde, Sokol, & Hallett, 2003; Hallett, 2005). The present study extends these earlier research efforts by testing the hypothesis that community-level efforts to contribute to the preservation of indigenous languages constitute an additional marker of cultural continuity that will again prove to be strongly and independently associated with youth suicide rates.

At least three things are required to make such a hypothesis credible and open to empirical test. The first of these is a convincing rationale for proposing that the viability of a given indigenous language contributes to the viability of the broader culture to which it gives voice. The second is empirical support for the hypothesized link between language and/or cultural loss, and the deterioration of community wellbeing—indexed in the present study by band-level rates of youth suicide in the more than 150 Aboriginal communities surveyed. Finally – and these are primarily methodological considerations – trustworthy means must be found for indexing the variable degrees to which whole Aboriginal communities have managed to both preserve their indigenous language and to create a cultural life that young people judge worth living.

The familiar claim that the preservation of indigenous cultures is associated with the preservation of indigenous languages is less an argument about causes and effects than it is the assertion of a constitutive relation between wholes and parts. That is, while the notion of "culture" is ordinarily taken to be more inclusive, language is widely regarded as "one of the most tangible symbols of culture and group identity—a link which connects people with their past, and grounds their social, emotional and spiritual vitality" (Canada, 2005). The loss of any such indigenous language, it is argued, spells the end of another way of looking at the world, of explaining the unknown and of making sense of life (Battiste, 1998). On such grounds, many seriously doubt that any culture entirely cut off from its "mother tongue" is likely to survive.

Such thoughts are not, of course, restricted to Aboriginal language communities. Many immigrant parents, for example, routinely share the conviction that knowledge of one's "language of origin" is the serious stuff out of which the often vanishing prospects of cultural preservation depend, and so regularly speak their "native tongue" at home, and/or send their children to Hebrew school, or after-school classes in Italian or Greek or Asian languages. For Aboriginal parents, the perceived threats of indigenous language loss are often seen as even more real and more pressing. For such parents there is no "homeland" where whole nation states continue to converse in their language of origin, and so no potential source of "new speakers." For Aboriginal parents, the commonly shared fear is that when all the fluent speakers of their language die, so too does their culture.

Given current realities, something very much like this prospect of "death by language" is the anticipated plight of almost every Aboriginal language group across the whole of the Americas and beyond. Both in Canada and around the world, competent speakers of most Aboriginal languages are characteristically few and vanishing, and, as a result, each succeeding generation stands witness to the extinction of literally hundreds of once vibrant indigenous languages (UNESCO, 1996). The cumulative effect of such documented losses is that many contemporary Aboriginal communities properly regard themselves as struggling, against mounting odds, in a last-ditch effort to preserve their native language—languages that, without special care and concern, can be expected to all go extinct before the end of this century (UNESCO, 1996).

According to one version of this apocalyptic story (i.e., UNESCO's 1996 *Atlas of the World's Languages in Danger of Disappearing*), any language that is not learned as a "mother tongue" by at least 30% of a community's children needs to be considered seriously "endangered." By these standards, Canada's Aboriginal language communities face a particularly dismal future.

According to the 2001 Canadian Census, overall, only 15% of the country's Aboriginal children learn an indigenous mother tongue, and fewer still are spoken to in such a language at home (Norris, 2000). Given such odds, and without special diligence, no more than two or three of Canada's still existing indigenous languages are expected to survive beyond one or two more generations (British Columbia Ministry of Health Planning, 2002; Canada, 2005; Norris, 2000; Wright, Taylor, & MacArthur, 2000). All of this is truer still in the province of British Columbia (BC), where the data to be reported here were collected. BC has the greatest linguistic diversity, one of the smallest language populations, and the largest number of endangered languages of any Canadian province (Norris, 2000).

Although, as far as we have been able to determine, there are no previous studies that have attempted to demonstrate a specific link between indigenous language loss and community-level measures of health and wellbeing, the generic association between cultural collapse and the rise of public health problems is so uniform and so exceptionless as to be beyond serious doubt. The difficulty with this truism is not that it is suspect, but, rather, that it is so self-evident as to fall into circularity. We commonly conclude, for example, that a culture is in retreat *because* of mounting rates of poverty, educational failure, substance abuse, malnourishment, diseases associated with overcrowding and congestion, etc.

At least in the case of language loss, a part of what is needed, in order to escape such threats of circularity, is not only some convincing demonstration of an association between community-level measures of both language preservation and of public health, but also some way of demonstrating that the variance assignable to language exists separately and apart from that owed to other aggregate measures of "cultural continuity" to which matters of language preservation contribute no definitional part. In this short report, we attempt to fill this prescription: (a) by selecting "band"-level measures of youth suicide rates as an outcome measure; (b) by choosing community-level measures of "Aboriginal language knowledge" as an index of language preservation; and (c) by, not only reporting out on the relations between "a" and "b" above, but by undertaking a factor analysis aimed at determining the predictive efficiency of our measure of language preservation apart from that of a half-dozen other conceptually related measures of cultural continuity.

1. Method

1.1. Youth suicide as a "coalminer's canary" of cultural distress

It has been widely argued that, if they are to thrive, both individual young persons and whole cultural communities must somehow succeed in warranting a sense of continuity, or persistent identity, in a rapidly changing world (Chandler et al., 2003). Nowhere are the costs associated with failures to achieve a proper measure of individual and cultural continuity more apparent than in the identity struggles of young First Nations persons who are required, not only to clear the standard hurdles that punctuate the ordinary course of individual identity development, but to construct a sense of shared identity out of the remnants of a way of life that (as a result of colonialization, ongoing prejudice, and positional inferiority) has been largely overthrown. As this research has worked to show, the cumulative consequences of such personal and cultural assaults are often disillusionment, lassitude, self-effacement and, in the extreme, death by suicide at an early age (Chandler & Lalonde, 1998, in press; Chandler et al., 2003). More particularly, these previous research findings demonstrate that failures to achieve any viable sense of self or cultural continuity are strongly linked to self-destructive and suicidal behaviours (Chandler & Lalonde, 1998, in press). At the level of whole communities, this work has shown that, not only

do different First Nations bands vary dramatically in their rates of youth suicide, but that, among the province of BC's almost 200 distinct Aboriginal communities, those bands that have met with greater levels of success in rehabilitating their differently savaged cultures also show remarkably lower rates of these negative social outcomes. Taken all together, these earlier findings offer the real promise of providing both a conceptual framework for better understanding why the burden of youth suicide falls disproportionately on some, but not other, First Nations communities, and a ready-to-hand set of data concerning band levels of youth suicide for use as an outcome measure in the present study.

1.2. Knowledge of Aboriginal languages

Community-level information about indigenous language knowledge in BC was initially assembled by Norris and MacCon (2004) from data collected in the 1996 Statistics Canada national census. These data specify: (a) the number of Aboriginal people in each census district in BC; (b) the Aboriginal band most evident in each such district; and (c) the number (and proportion) of people who reported that they had knowledge of an Aboriginal language. Although "band" membership and census district are not the same, given the geographic dispersion of BC's Aboriginal population, it was possible to uniquely associate 152 of the province's 195 bands with a single census district, and to generate an index of indigenous language use for each of these communities.

Finally, drawing on data originally reported by Chandler and Lalonde (1998), it was also possible to determine the relations between our language usage index, and the list of other dichotomous band-level cultural continuity factors detailed earlier.

Because the incidence of suicide is always low relative to the size of the population, and because First Nations communities are generally small, the analyses reported below involved grouping bands together into larger population units based on their scores on the original six cultural continuity factors reported by Chandler and Lalonde (1998). For the same reason, our index of language usage was also initially dichotomized, employing a cutting score in which those bands having a score above 50% on the language knowledge index were assigned a "1" (16 bands), and those with less than 50% were assigned a "0" (136 bands).

2. Results

2.1. Factor analysis

Our indices of language knowledge were first correlated with the previously identified set of six cultural continuity factors. The intercorrelations of all these factors are displayed in Table 1. For the most part, these correlations are moderate, and the language factor seems less strongly correlated with the other factors than these factors are with each other.

A principal components factor analysis was conducted on the six cultural continuity variables reported by Chandler and Lalonde (1998), plus the new index of language knowledge, in order to generate a list of eigenvalues. Results indicate three eigenvalues in excess of 1, but an examination of the scree plot reveals a steeper decline from the first to the second eigenvalue, suggesting that these variables are best represented as a one-factor solution (see Fig. 1). For the purposes of determining the appropriate number of factors, a Likelihood Ratio Test was also conducted. Results clearly indicate good fit with a one-factor solution ($\chi^2(14) = 18.700$, $p = .177$). Furthermore, the one-factor solution, in an Unweighted Least Squares Factor Analysis, was also able to satisfactorily

Table 1
Intercorrelations between the cultural continuity factors and the language factor

Cultural continuity factor		1	2	3	4	5	6	7
1.	Self-Government	–						
2.	Land claims	.254*	–					
3.	Education	.227*	.000	–				
4.	Health Care	.349*	.017	.203*	–			
5.	Cultural Facilities	.248*	.045	.240*	.147	–		
6.	Police and Fire Services	.271*	.208*	.139	.310*	.197*	–	
7.	Language	.114	.047	.088	.218*	−.033	.118	–

Note: Number of bands, $N = 152$.
* Significance, .05.

reproduce the correlation matrix of the original items. The average residual (in absolute value terms) of these 21 correlations was .0486, and only 4 residuals (ranging from .101 to .113) exceeded .100. As such, the one-factor solution seemed to best describe the data, with this factor explaining 29% of the variance. Although language knowledge is not as strongly correlated with the other cultural continuity factors as they are with each other, it is significantly related to the total number of these six factors ($r = .160$, $p = .049$). This finding, combined with ability of the factor analysis to reproduce the correlation matrix, suggests that language knowledge should be considered part of the same factor.

2.2. Suicide

Results indicate that those bands with higher levels of language knowledge (i.e., more than 50%) had fewer suicides than those bands with lower levels. More specifically, high language knowledge bands averaged 13.00 suicides per 100,000 (well below the provincial averages for both Aboriginal and non-Aboriginal youth), while those with lower language knowledge had more than six times the number of suicides (96.59 per 100,000). These differential rates reflect the fact that, between 1987 and 1992, only one youth committed suicide from within those 16 bands that had the language factor while, from the remaining 136 bands, 84 youth committed suicide during this same 6-year period.

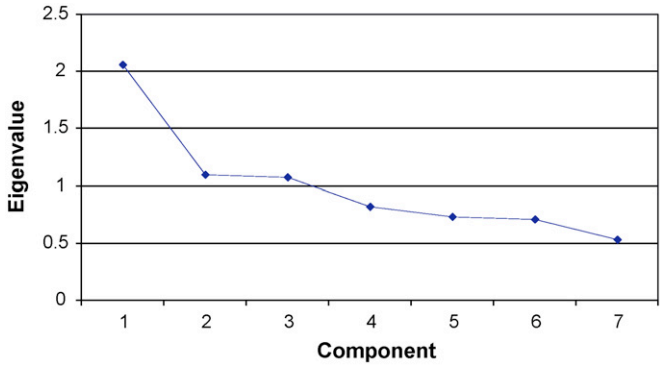

Fig. 1. Scree plot of eigenvalues.

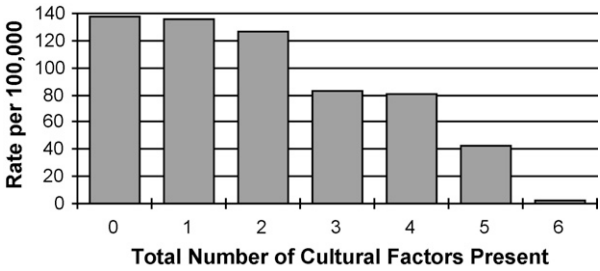

Fig. 2. Suicide rates by number of factors present in the community (1987–1992). Taken from Chandler et al. (2003).

Fig. 2 illustrates Chandler and Lalonde's (1998) results relating suicide rates to the previous set of cultural continuity factors. Each of the columns in this graph refers to the suicide rate when all of the bands with that number of cultural continuity factors are combined. To test whether language knowledge adds any further predictive value to these results, each of these columns was further broken down into those bands that also had the language factor and those that did not. For example, in the case of the column labelled "3," which designates all those bands in which a total of three cultural continuity factors were present, we separately calculated the suicide rate for all those bands that also had the language factor and for those that did not. Since, during the 6-year window of the study, only one youth suicide occurred in the 16 bands that exhibited the language factor, the presence of that language factor made a drastic difference in suicide rates (see Fig. 3). In all cases except one (the case of four cultural continuity factors), suicide rates dropped to zero when the languages factor was present. In the case of those bands with four cultural continuity factors, the presence of the language factor resulted in a suicide rate (37.12 per 100,000) less than half of the corresponding rate for those bands without the language factor (77.68 per 100,000). The total youth populations on which Fig. 3 was based are shown in Table 2. No bands that had five or six of the previous cultural continuity factors also had the language factor, so these bands are not included in Fig. 3 or Table 2.

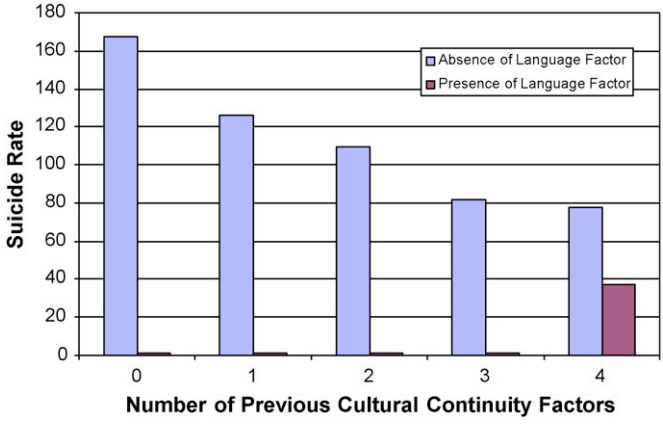

Fig. 3. Suicide rates for those bands with and without the language factor.

Table 2
Total youth populations underlying suicide statistics

Bands with and without language factor	Number of bands	Number of suicides	Total youth population	Suicide rate (per 100,000)
Bands with 0 factors				
With language	1	0	68	0
Without language	18	9	896	167.41
Bands with 1 factor				
With language	7	0	384	0
Without language	44	32	4221	126.35
Bands with 2 factors				
With language	3	0	226	0
Without language	33	21	3201	109.34
Bands with 3 factors				
With language	3	0	155	0
Without language	19	10	2036	81.86
Bands with 4 factors				
With language	2	1	449	37.12
Without language	13	11	2360	77.68

Notes: Total number of bands, $N = 143$. In addition, four bands had five factors and five bands had six factors, but none of these nine bands had the language factor.

3. Discussion

The data reported above indicate that, at least in the case of BC, those bands in which a majority of members reported a conversational knowledge of an Aboriginal language also experienced low to absent youth suicide rates. By contrast, those bands in which less than half of the members reported conversational knowledge suicide rates were six times greater. Although the newly minted index of Aboriginal language use was found to form a common factor with other previously identified markers of cultural continuity, even this crude marker of language use was shown to have strong discriminatory power independent of these earlier factors, and to make a significant independent contribution to our understanding of the high youth suicide rates that plague many Aboriginal communities. Altogether these results demonstrate that indigenous language use, as a marker of cultural persistence, is a strong predictor of health and wellbeing in Canada's Aboriginal communities.

Acknowledgements

The authors would like to thank Mary-Jane Norris for compiling and providing the Statistics Canada data regarding Aboriginal language knowledge. We would like to further thank Jessica Flores and Leigh Koopman for all their assistance. This research was supported by a Social Sciences and Humanities Research Council of Canada Fellowship to the first author and a Human Early Learning Project grant to the second and third authors.

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