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Teaching Indigenous languages at universities

Abstract

Very few universities in Australia offer courses in Indigenous languages. We discuss the three main types on offer: L1 courses aimed at first language speakers of an Indigenous language, L2 FL courses aimed at Indigenous and non-Indigenous people wanting to learn an Indigenous language which is still spoken by children, and L2 revival courses aimed at Indigenous and non-Indigenous people wanting to learn an Indigenous language that is being revived or restored. We describe the needs and hurdles confronting L2 revival courses, illustrating this with discussion about the background to, and development of, Gamilaraay courses taught at the University of Sydney. We also consider the need for university courses in revival languages, and the different roles of university and TAFE (Technical and Further Education) courses.

1. Introduction

Before the European invasion, Australia had around 300 Indigenous languages. Today, 20 or fewer are still spoken by children (Australian Institute of Aboriginal and Torres Strait Islander Studies [AIATSIS] & Federation of Aboriginal and Torres Strait Islander Languages [FATSIL] 2005). Belatedly, Australians are realising that Indigenous languages are part of our heritage, and part of everyday life for some communities. This is being recognised in the draft National Curriculum on languages (Australian Curriculum, Assessment and Reporting Authority [ACARA] 2011), in the draft National Cultural Policy (Commonwealth of Australia 2011), and by the 2011-2012 House of Representatives Standing Committee Inquiry into language learning in Indigenous communities (Parliament of Australia 2011-2012). In this study we discuss what is needed to make this a reality, and what is needed for good school courses in Indigenous languages. Part of the answer is having good university courses in Indigenous languages.

Indigenous language situations vary widely across Australia. There are three main situations:

1. Communities where traditional languages are still the languages of everyday use for children. Very few such communities still exist, but they include Wadeye (Port Keats, Northern Territory), Yolngu-speaking communities in Arnhem Land (Northern Territory), Warlpiri-speaking communities at Willowra, Yuendumu and Nyirripi (Northern Territory), Pintupi speaking communities (Northern Territory and Western Australia), and Pitjantjatjara/Yankunytjatjara communities on the Anangu Pitjantjatjara/Yankunytjatjara (APY) Lands (South Australia). These communities are mostly in the Northern Territory (NT), inland Western Australia (WA), and northern South Australia (SA).
2. Communities where the children have moved to speaking a creole or mixed language, but where middle-aged or elderly people still speak traditional languages. These communities are mostly in the NT, coastal and northern WA, and north Queensland.
3. Communities where the traditional languages of the area are no longer spoken as first languages. This is the case in most of Australia.

All three situations share the common difficulty of bringing previously unwritten languages into the curriculum. All have heavy demands for documentation and preparation of language learning and enrichment materials for use in schools. This is generally not easy, because no Australian language is well documented compared with most European languages, and there are very few curriculum resources. The task is particularly hard for the third situation, since in most settled areas of Australia there are no native speakers of the local Indigenous language, and in many areas of Australia the only records of the language are written records of variable quality and there are no sound recordings.

Each of these situations has different requirements for curriculum and teacher training. Presently, Indigenous languages are being taught at schools, but very often they are taught as part of a 'language and culture' program where the emphasis is more on 'culture' than on language, and 'culture' is often reduced to 'didj, dots and damper'.¹ If Indigenous languages are to be taught effectively in schools, then there needs to be good backing for this not only from Education Departments, but also from tertiary institutions providing programs in traditional languages and programs for teachers in teaching Indigenous languages to Indigenous children.

2. Types of university courses

University and TAFE courses in Indigenous languages are surveyed by Gale (2011), who discusses the differences in function between the two, and illustrates this with detailed discussion of recent TAFE courses in Ngarrindjeri. A history of tertiary teaching of Indigenous languages is given in Amery (2007). Current Indigenous language courses at university level fall into two types:

1. **L1 courses:** Those aimed at L1 speakers – i.e. first language speakers of an Indigenous language (Language situation 1).
2. **L2 courses** aimed at L2 speakers – i.e. Indigenous and non-Indigenous people wanting to learn an Indigenous language. There are two sub-types of this: courses for people wanting to learn languages which are still spoken by children (which we call **L2 FL courses**),² and revival courses aimed at Indigenous and non-Indigenous people wanting to learn an Indigenous language that is being revived or restored (which we call **L2 Revival courses**). (Language situations 2 and 3).

2.1 L1 courses

L1 courses include those run in the Northern Territory by the Centre for Australian Languages and Linguistics, (formerly the School of Australian Linguistics) and Batchelor Institute of Indigenous Tertiary Education (Black and Breen 2001). These courses arose in response to the demand for documentation of languages, and the need in mother-tongue-medium education programs for speakers of Indigenous languages trained as teachers. They often focused on vernacular literacy, on preparation of language documentation and language teaching resources, and more rarely on sociolinguistics. Outcomes included many speakers of Indigenous languages increasing their literacy in their own languages, producing vernacular literature and other media in Indigenous languages, working on dictionary projects, becoming trained teachers. However, with the demise of mother-tongue-medium education in the Northern Territory, these programs have been undermined (Hoogenraad 2001; Simpson, Caffery and McConvell 2011).

2.2 L2 FL courses

L2 FL courses are aimed at people (Indigenous or non-Indigenous) wanting to learn an Indigenous language that is still spoken by children. Reasons for this could include wanting to work in communities where everyday talk takes place in Indigenous languages. Participants also include linguists, overseas students and others wanting to get a general acquaintance with Indigenous languages. Current examples include:

1. Pitjantjatjara (SA and NT). This was the first Indigenous language to be taught at university (Edwards 1995). By Australian standards it is a large language with 2,657 speakers listed (Australian Bureau of Statistics 2008). More speakers speak closely related dialects ('Western Desert'). From the establishment of Ernabella mission in 1937 on what is now the Anangu Pitjantjatjara/Yankunytjatjara (APY) Lands (SA), Pitjantjatjara/Yankunytjatjara languages were valued, and non-Indigenous people working there felt some obligation to learn some Pitjantjatjara. Edwards (1995: 6) describes the initial demand in the 1960s from teachers who worried about their "lack of preparation for teaching in Aboriginal schools". The demand for learning Pitjantjatjara came not only because of the mother-tongue-medium education policy adopted by the South Australian Government, but also from medical staff, police officers, public servants and community workers, who recognised the need to communicate effectively with Pitjantjatjara people. University courses began in 1966 at the University of Adelaide with a three-week summer school, then were taken up by a college of advanced education which later became the University of South Australia. At the high point, five levels of language course were offered in Pitjantjatjara, as well as a Graduate Diploma, and by 1994 41 people were enrolled in introductory Pitjantjatjara 1 (Edwards 1995).

But the withdrawal of support for mother-tongue-medium education around 1992 appears to have heralded a loss of interest in language among non-Indigenous people living in the APY Lands. By 2011 Pitjantjatjara was only offered at an introductory level, as a two-week intensive Language and Culture class with 50% assessment on an essay (i.e. not direct language learning).³ Despite this, widespread public interest in Pitjantjatjara language learning was aroused by an enterprising arts organisation, BigHart, which sponsored *Ngapartji Ngapartji*, from 2006–2009 (<http://ninti.ngapartji.org>). *Ngapartji Ngapartji* was an imaginative on-line adult education course in Pitjantjatjara, linked with a theatre production and experiential language show which travelled around Australia.

2. Yolngu Matha (NT). This is the name for nearly 40 closely related languages and dialects spoken in Arnhem Land across a number of outstations and communities. They have had official or de facto mother-tongue-medium education in the schools since the early 1970s, and, as with Pitjantjatjara, many non-Indigenous people working there have wished to learn Yolngu Matha. Since the late 1990s it has been offered in regularly scheduled classes at the Charles Darwin University, Darwin (NT), and is available on-line. Students can complete a certificate in Yolngu Studies, which includes texts, conversation, literature and culture.

3. Sporadically, Linguistics programs at universities offer courses in field methods and ‘structure of a language’ and take Indigenous languages as the topic, or courses on Indigenous languages may include tutorials on particular languages.

4. From the 1970s, the Institute for Aboriginal Development in Alice Springs (NT) has offered adult language learning classes in a range of Central Australian languages, and produced learners’ guides, dictionaries and language learning materials. This work has gradually reduced.

It has become harder to gain access to well-grounded adult or tertiary courses in Indigenous languages. However, the recent work by Gale (2011) in designing and gaining accreditation in South Australia for two TAFE courses, Certificate III in Learning an Endangered Aboriginal Language, and a Certificate IV in Teaching an Endangered Aboriginal Language, should make it slightly easier to run TAFE courses in Indigenous languages which provide a solid grounding for language learners based on sound linguistic understanding.

2.3 L2 revival courses

L2 revival courses are those aimed at Indigenous and non-Indigenous people who want to learn or revive an Indigenous language for their own use, for teaching their children, for community purposes (such as performing welcomes to country), and for teaching in school or elsewhere. Existing courses include Gamilaraay (University of Sydney), Kurna (University of Adelaide), and a proposed Wiradjuri course at Charles Sturt University (New South Wales). In the remainder of this study, we discuss some aspects of L2 revival courses at universities.

3. Getting L2 revival courses underway

Teaching any Indigenous language at university, whether as L1, L2 FL or L2 revival, faces challenges. Since there are historically nearly 300 Indigenous languages, the number of students enrolling in any language is likely to be small. Since the number of speakers is small (probably not more than 5,000 for the bigger languages), the pool of talented teachers is small. Since the languages have mostly only been written down for less than a hundred years, there are not large collections of language resources.

L2 revival courses face particular problems, due in part to the lack of speakers. Amery (2007) provides a firsthand account of the difficulties in establishing a Kurna L2 revival course in Adelaide. In this section we discuss what is needed for universities to establish L2 revival courses, illustrating it from John Giacon’s experience developing the Gamilaraay course at the University of Sydney. As far as we know, Gamilaraay has been the only (local) Aboriginal language taught at university-level in Eastern Australia in recent years.

In 2006 ‘Speaking Gamilaraay 1’ was taught for the first time, under the auspices of the Koori Centre at the University of Sydney, and continued being taught until 2011. The course will resume in 2013, and be open to other institutions, and is also likely to be offered by Open Universities Australia. It is a 6-credit point, undergraduate course, and has had an average of 12 students a year. While most students in ‘Speaking Gamilaraay 1’ are not Indigenous, the number of Indigenous people enrolling in or auditing the course has slowly increased. ‘Speaking Gamilaraay 2’ will also be offered in 2013 and it is hoped to develop other courses later.

Prerequisites for teaching a language are a teacher and materials for them to teach from. To the task of developing a course in Gamilaraay at the University of Sydney, Giacon brought his experience working with Gamilaraay people since 1995, helping them revive their language, and developing language-teaching materials. Before starting on the University of Sydney course Giacon had taught the language at TAFE, informal courses and summer schools, and he was on the writing team of the NSW Aboriginal languages syllabus for schools. He embarked on a PhD on Yuwaalaraay Gamilaraay at the Australian National University, which has given him further insight into the structure of the language. He has also developed many Gamilaraay resources, such as *Gayarragi*, *Winangali*, an electronic resource which includes the *Gamilaraay Yuwaalaraay Yuwaalayaay Dictionary* (Ash, Giacon and Lissarrague 2003; for more information about the languages see <http://yuwaalaraay.org>, and for language materials follow the link to the moodle site).

3.1 The pathway to language rebuilding — John Giacon

A brief consideration of ‘language rebuilding’ (perhaps more widely called ‘language revival’) will provide part of the context for later discussion. Gamilaraay Yuwaalaraay [GY] is considered in more detail, but much is relevant to other Indigenous languages. In much of long-colonised Australia the traditional language is not spoken, and various amounts of it have been recorded. For some fortunate speech communities this includes tape recordings of relatively fluent speakers. The steps to rebuilding the language begin with a new ‘first speaker (or speakers)’ who learns from the historical materials. They teach others, who then use the language and often pass on what they have learnt. However this depiction of the pathway ignores many difficulties, beginning with the assumption that one can fully learn language from these materials.

In the case of GY all the basic linguistic resources are *historical* — there are no speakers with ‘fluency’. Since Giacon began working on GY in 1995 he has not met anyone whose handed down knowledge of the languages included the ability to put a sentence together. Some who have done courses and read grammars now have that ability. In fact Gamilaraay is mainly built on information about one dialect, Yuwaalaraay. There are few recorded sound files, and little textual material. Part of developing the materials included developing a grammar of the language and a dictionary. He has spent thousands of hours with various written sources and

more thousands listening to and transcribing the Yuwaalaraay tapes — there is little tape material, and that is mostly words in isolation. Corinne Williams' *Grammar of Yuwaalaraay* (Williams 1980) has substantial grammatical material. Many more hours have gone into, and continue to go into, further research, some of it published in the *Gamilaraay Yuwaalaraay Yuwaalayaay Dictionary* (Ash et al. 2003) and elsewhere. While he now knows a considerable amount of GY, the learning is quite different from learning a 'living' language, which typically has vastly more grammatical and pedagogical materials and a range of courses available. It is possible to immerse oneself in the language and to get feedback from fluent speakers. This does not apply to GY.

A language is for communication. The result of study of the historical materials is of limited use for that purpose. For instance it is rare for earlier recorders to document much conversational practice. How do you say, in GY: 'pen' 'Hello' 'I'm starting to...' 'I've finished ...' 'yesterday ...' 'I recognise the traditional owners'? The historical materials do not provide the answers. (In fact they clearly state 'There is no word for 'yesterday' in the language' for GY, even though closer analysis reveals that there are probably verb forms that convey that information.) So a central task of language rebuilding is language development, creating new material in the language. Ideally this is done by cooperation between the linguist and the people of the language. (Rarely is the linguist a descendant of speakers of the language, although this is gradually changing.) In the case of languages with limited materials, 'grafting' the language material onto the grammar of another language may be the only alternative (Amery 2000). Apart from the conscious development, English has a huge, but generally unconscious, impact on rebuilt language, (for example, revival learners tend to use English word order even if the traditional language has free word order). As Zuckermann and Walsh (2011) point out, any rebuilt language is hybrid, even when it has the extensive resources that Israel has to put into developing Modern Hebrew. So any new GY will be hybrid, and the less that people have learnt about the language before they start using the language, the more hybrid it will be.

Among the many differences between the Modern Hebrew revival and the revival of Indigenous languages in Australia is the official status and consequent enforcement of status given to Modern Hebrew (Shohamy 2008). As Modern Hebrew was rebuilt, the language was shared, sometimes forcibly. It was used in schools, newspapers, radio, books and so on. As GY is being rebuilt there is little sharing. Mostly people are using it in their own family, classroom or by themselves in giving speeches and so on. The rare exceptions include a few greeting words like *yaama*. But the rebuilt GY will be more like the traditional language if there is shared language research and development. For this GY to be used, it needs to then be taught, and resources such as books and audio materials need to be produced, while again being aware of the tendency of languages at this stage to develop different versions.

3.2 The contribution that universities can make to language revival

From the above it is clear that for language rebuilding to go beyond increasing the ability to use a few words of the traditional languages and perhaps memorised speeches in ceremonial contexts, there needs to be sound research into how the traditional language worked, and development of new ways of talking. Since the knowledge of the traditional materials and of new materials is not easily gained, it is good if there is continuity of personnel for optimal language rebuilding. Unfortunately, this often does not happen. For example, for a number of languages in NSW people who have developed strong knowledge of the language are no longer involved in language rebuilding work. Sometimes there were unavoidable reasons, but other factors include lack of adequate employment and difficult politics. At times there is the impression that language work is easy, and so 'the community' can do it, and so they see no need for a linguist.

Among the personnel essential to language rebuilding in Australia are excellent teachers. Universities are the ideal place for training teachers, ideally working with other organisations such as other education bodies (schools, TAFE, pre-schools, mobile language teams, etc) and with language centres, where they exist. In particular, school education needs trained teachers and good resources. The emphasis on Indigenous languages in the National Curriculum is to be welcomed, but, for this to be implemented properly, there needs to be a major effort put into teacher development, especially of Indigenous teachers, and resource production. And as pointed out above, for Indigenous languages in particular, this needs prior work in research and personnel development.

Indigenous languages are sporadically taught at TAFE (for instance Gamilaraay, Wiradjuri, Dhanggati, and Gathang, again in New South Wales (NSW)), and less frequently in situations like summer schools. Certificate 2 in Gumbaynggirr is taught by Muurrbay Language Centre. These are useful for getting community members accredited as teaching assistants, and heightening awareness in the community of the local language. A number of TAFE trained, and informally trained people have done wonderful work in NSW languages such as Wiradjuri, Gumbaynggirr and GY. However this training is not ideal for teaching at the level envisaged in the National Curriculum. Moreover there are administrative difficulties when people who are teaching do not have the normal qualifications for teaching in schools. The long-term future of Indigenous language teaching in NSW will therefore depend on the teachers having university qualifications.

Universities have a lot to offer language rebuilding. Research is a basic role of universities, and language rebuilding requires research. While this can be done by individuals, it is often much more productive in a university environment. Working with other linguists can provide support, experience, and peer review. It can also provide the longevity of employment and flexibility to take up projects. Work can be

shared with graduate students contributing to the research and development of the language. As well, universities can combine research and teaching. There is a need for Indigenous people with an academic background to become involved in language and language development. These are more likely to come from universities than elsewhere, and so if a university offers teaching about a traditional language, this can provide the technical understanding of the language that the Indigenous person can then build on for working on reviving their own language. As well, if languages such as GY are to be part of the National Curriculum there is really no alternative to having them taught at university. This is where reviving Indigenous languages differs from most immigrant languages. For teaching languages like Italian or Estonian in schools, teachers can draw on materials and research carried out over centuries in other countries. There is no such base for teaching Indigenous languages in schools. University-level research and training in Indigenous languages is the only way to achieve the level of work required and to ensure the languages get proper recognition. Finally, universities have a structure which is designed to accredit, deliver and administer courses. This infrastructure makes the teacher's role much simpler than alternative approaches.

One danger of university work in language is that it becomes a purely academic task, not connected with the people of the language. This makes it less likely that those people will engage in the language revival work. However, once a university-level course in an Indigenous language is established, the experience of the Gamilaraay classes is that it is easier to publicise it to Indigenous people in the region.

3.3 The hurdles

Financial considerations do not favour Indigenous language courses at universities (although several universities are looking at cross-institutional involvement in the University of Sydney courses, Speaking Gamilaraay 1 and 2, possibly through online enrolments). The student numbers are initially uncertain and likely to be small, and no pathway has been developed to post-graduate study. The politics around language can also be a hurdle, but not an insurmountable one. Indigenous languages are not part of the traditional curriculum, so there needs to be a reason for universities to offer them (see for instance above). The universities would also be more involved if and when school education bodies provide more in-service training for their staff who teach Indigenous languages. There need to be 'champions' for Indigenous language, people who will push and facilitate the teaching of these languages. Many universities have a reconciliation plan or similar, and a commitment to Indigenous issues, so if the people and resources are there, the universities are more likely to act. As already noted, a major reason Indigenous languages are so rarely taught is the lack of teachers and resources. There are currently perhaps two people who could teach university level Gamilaraay. For many languages of New South Wales there is no-one, or if there is a person, they cannot afford to take up part-time work at a particular university. The scarcity of suitable teachers means that courses would not

be able to continue if staff move on. Thus there needs to be systematic development of people with these skills, via postgraduate study or other means. Ideally some institution would be responsible for planning for research into languages and the development of skilled people.

4. Conclusion

In 1995 Bill Edwards wrote:

“The above outline of the history of the teaching of Pitjantjatjara highlights the fact that Australian universities have largely failed in their recognition and promotion of Aboriginal languages” (Edwards 1995: 11)

As this study has shown, there has been a small improvement in terms of the number of languages offered, and in terms of adding L2 revival learning courses. However, they are often in a precarious position in universities that are constrained financially. For example, the reduction of depth in Pitjantjatjara teaching over time is deeply disappointing.

Discussion of Indigenous language work, correctly, focuses on the ‘people of the language’, on the ‘community’. They are the main beneficiaries of language work and they have a right to their language. Too often, however, this discussion is limited to ‘use of the language’, whether in the community or in the classroom. It has ignored the differences between L1 language enrichment, L2 FL language learning and L2 revival language learning. In particular, it has ignored the process of language rebuilding or language maintenance, the need to build a foundation of knowledge, skilled people and a pathway for teaching the language. As described above, universities can have a key role in developing the basic knowledge and the skilled people, and in understanding the process of maintenance or rebuilding. They are more likely to take up this role if language policy and language funding recognises the role and supports it. Perhaps something along the lines of the New Zealand *Te Taura Whiri i te Reo Māori* — The Māori Language Commission — would help in developing a planned, coherent approach to work in many Australian Indigenous languages, although the need to do this with many languages, as opposed to one language, makes this outcome more difficult to achieve.

Notes

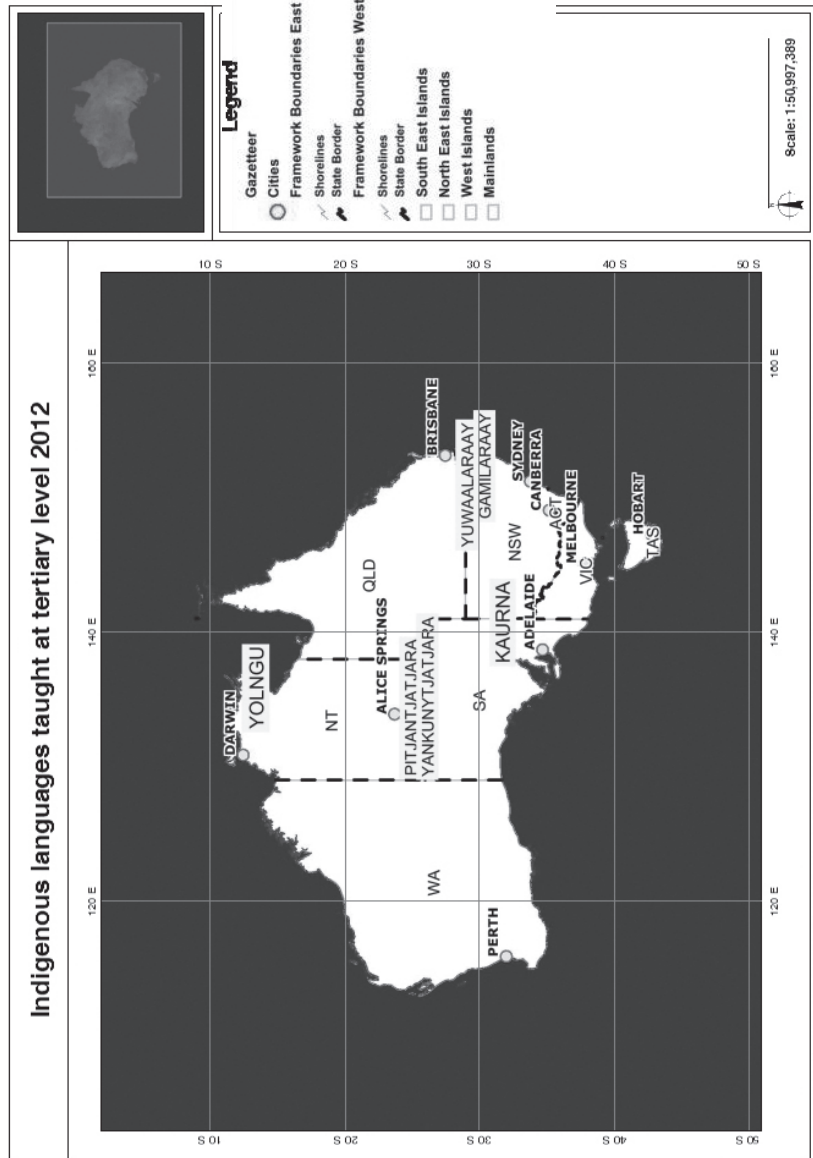
1. Phrase used by participant at AIATSIS National Indigenous Studies Conference, 2011
2. The name is modelled on EFL (English as a Foreign Language)
3. See <http://programs.unisa.edu.au/public/pcms/course.aspx?pageid=106079>, accessed 10 February, 2012.

References

- Amery, R.M. 2000. *Warrabarna Kurna!: Reclaiming an Australian Language*. Lisse: Swets & Zeitlinger.
- Amery, R.M. 2007. Aboriginal language habitat in research and tertiary education. In G. Leitner and I.G. Malcolm (eds), *The Habitat of Australia's Aboriginal Languages: Past, Present and Future*, 327–353. Berlin: Mouton de Gruyter.
- Ash, A., J. Giacom and A. Lissarrague. 2003. *Gamilaraay, Yuwaalaraay and Yuwaalayaay dictionary*. Alice Springs: IAD Press.
- Australian Bureau of Statistics. 2008. *2006 Census of Population and Housing*. <http://www.abs.gov.au>. Accessed 7 February 2012.
- Australian Curriculum, Assessment and Reporting Authority [ACARA] 2011. *Shape of the Australian Curriculum: Languages*. Sydney: ACARA. <http://culture.arts.gov.au/sites/default/files/discussion-paper/national-cultural-policy-discussion-paper.pdf>. Accessed 7 February 2012.
- Australian Institute of Aboriginal and Torres Strait Islander Studies [AIATSIS] & Federation of Aboriginal and Torres Strait Islander Languages [FATSIL]. 2005. *National Indigenous Languages Survey Report 2005: Report Submitted to the Department of Communications, Information Technology and the Arts*. Canberra: DCITA.
- Black, P. and G. Breen. 2001. The School of Australian Linguistics. In J. Simpson, D. Nash, M. Laughren, P. Austin and B. Alpher (eds), *Forty Years On*, 161–178. Canberra: Pacific Linguistics.
- Commonwealth of Australia. 2011. *National Cultural Policy: Discussion Paper*. Canberra: Office for the Arts, Department of the Prime Minister and Cabinet, Australian Government.
- Edwards, W. 1995. Teaching an Aboriginal language at University level. *Babel*, 30(2), 4–11, 38.
- Gale, M.A. 2011. Rekindling warm embers: teaching Aboriginal languages in the tertiary sector. *Australian Review of Applied Linguistics*, 34(3), 280–296. <http://www.nla.gov.au/openpublish/index.php/ara/article/view/2278>. Accessed 9 February, 2012.
- Hoogenraad, R. 2001. Critical reflections on the history of bilingual education in Central Australia. In J. Simpson, D. Nash, M. Laughren, P. Austin and B. Alpher (eds), *Forty Years On*, 123–150. Canberra: Pacific Linguistics.
- Parliament of Australia. 2011–2012. *House of Representatives Standing Committee on Aboriginal and Torres Strait Islander Affairs Inquiry into Language Learning in Indigenous Communities*. <http://www.aph.gov.au/house/committee/atsia/languages/index.htm>. Accessed 7 February 2012.

- Shohamy, E. 2008. At what cost? Methods of language revival and protection: examples from Hebrew. In K.A. King, N. Schilling-Estes, L. Fogle, J.J. Lou and B. Soukup (eds), *Sustaining Linguistic Diversity: Endangered and Minority Languages and Language Varieties*, 205–218. Washington, D.C.: Georgetown University Press.
- Simpson, J., J. Caffery and P. McConvell. 2011. Maintaining languages, maintaining identities: what bilingual education offers. In B. Baker, I. Mushin, M. Harvey and R. Gardner (eds), *Indigenous Language and Social Identity: Papers in Honour of Michael Walsh*, 385–404. Canberra: Pacific Linguistics.
- Williams, C.J. 1980. *A Grammar of Yuwaalaraay*. Pacific linguistics Series B, no.74. Canberra: Pacific linguistics.
- Zuckermann, G. and M. Walsh. 2011. Stop, revive, survive!: Lessons from the Hebrew revival applicable to the reclamation, maintenance and empowerment of Aboriginal languages and cultures. *Australian Journal of Linguistics*, 31 (1), 111–127.

Appendix



Acknowledgement: This Map was produced using MapConnect web Mapping <http://www.ga.gov.au/mapconnect> with Topographic 250K Geodata 3 data.