INDIGENOUS ADOPTION OF MOBILE PHONES AND ORAL CULTURE

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Abstract. Indigenous people around the world are becoming more and more interested in ICT. The aural and graphical characteristics of mobile technology and multimedia, in particular, speak to strengths in Indigenous oral and graphical culture. Yet, despite many successful ICT implementations across the globe, there still remain many questions about Indigenous ICT access and adoption. In order to throw light on some of these issues, this paper examines the adoption and use of mobile phones by Indigenous people and how this fits with Indigenous culture. Specifically, we present a preliminary study of mobile phone adoption on a remote island in the Torres Strait with a special focus on Indigenous orality. The study indicates a number of very interesting issues, including an unexpected use of text messaging on mobile phones, as well as phone calls and text messages in the local language Kala Kawa Ya. We tentatively conclude that not only must ICT fit with cultural strengths such as orality but that it must also match key areas of high motivation, such as communication with family.

Résumé. Les peuples autochtones, de par le monde, sont devenus plus en plus intéressés par les technologies de l'information et de la communication (TIC). Surtout, les qualités orales et graphiques des téléphones portables et du Web correspondent à leurs préférences culturelles. Bien que beaucoup des projets TIC soient réussis, néanmoins il reste plusieurs questions relatives à l'accès à et l'adoption de la technologie. Pour illustrer le problème, cet article analyse comment l'adoption et les usages des téléphones portables des peuples autochtones s'alignent sur leur propre culture. En particulier, nous présentons une étude exploratoire de l'adoption des téléphones portables et de l'oralité dans le contexte d'une île lointaine dans le Détroit de Torres en Australie. Les premiers résultats tendent à montrer que l'adoption des téléphones portables est élevée, ainsi l'emploi des texto, notamment l'emploi des coups de téléphones et des texto en Kala Kawa Ya (KKY), la langue locale. Les recommandations sont que les TIC doivent s'aligner sur les aspects plus forts de la culture, par exemple l'oralité, et aussi sur les motivations principales, par exemple la communication avec la famille et les amis. L'utilisation des téléphones portables pour communiquer en KKY peut être très importante pour la survie d'une langue en voie de disparition.

1. Introduction

Indigenous nations around the world have voiced their wish to be included in the Information Society. This comprises the right to "participate in all manner of media and Information Communication Technology in mainstream ICT systems, nationally and internationally," as well as the right to establish and control their own ICT (Secretariat of the UN Permanent Forum on Indigenous Issues, 2003, p. 9). Despite the historically low rates of ICT access and low computer skills in Indigenous communities, there is now an increasing body of studies of Indigenous ICT use (Landzelius, 2006; Dyson, Hendriks & Grant, 2007).

To understand Indigenous ICT adoption we might do well to compare the characteristics of ICT and how these interact with on the one hand traditional Indigenous culture and on the other the context of Indigenous lives in the modern globalized world. Schoenoff (1993, p. 76) notes the adaptability and multipurpose nature of ICT:

> The computer is a unique tool because its purpose is constantly being reinvented by its users. Its power consists in the fact that it is a symbol machine, and its symbols and their interpretations can be altered.

Dyson (2003) sees ICT as being an inclusive medium, which allows Aboriginal users to achieve their own goals. It does this through its lack of traditional hierarchies, absence of prejudice, its interactivity and flexibility. In particular, she notes its appeal to the visual strengths of Aboriginal users, through what Bolter (2001, p. 72) calls the "breakout of the visual" on the World Wide Web. In addition, it speaks to the oral culture of Indigenous people through sound and video recordings, podcasts and mobile phones.

Mobile devices are an area of Indigenous ICT adoption which has received growing attention in recent years, largely in the African context. However, there has been little analysis of how these devices are being used in Indigenous communities in other parts of the world where reasons for adoption and conditions of use might be quite different.

In this paper we will be focusing on the intersection of mobile technology with Indigenous orality. Firstly we analyze the nature of orality and how it differs from text. We then provide an overview of orality and technology, and consider this with respect to Indigenous people. Finally, we present a preliminary study of mobile phone adoption in the Torres Strait Islands. Though we are in the initial stages of our research, the results are interesting and worth reporting in that this area has received very little attention previous to this. We believe this study can lead to a better understanding of technology adoption by Indigenous people generally and improve ICT investment decisions, implementations and training programs in Indigenous communities.

2. The Nature of Orality

2.1. ORALITY VERSUS LITERACY

What is the nature of orality? Speech is the fundamental mode of communication since we all live in an oral universe as children. Most of the people in the world still carry on

their lives using speech and memory rather than writing and reading, and anthropologists such as Levi-Strauss (1962) have revealed the complexity of the knowledge systems underpinning oral cultures. Writing is a much rarer activity. Of the many thousands of languages over the course of time only 106 were ever written down; and of the estimated 3,000-6,000 languages in existence today just 78 have a literature (Ong, 1982; Crystal, 2000). The question of orality versus literacy has been an ongoing subject of debate, particularly in and across 20th century scholarship.

2.1.1. Walter Ong and Marshall McLuhan

Walter Ong was one of the most influential scholars in the field of orality and literacy. He researched human languages and writing systems from ancient to modern times, synthesizing studies from anthropology, linguistics, psychology, history and literature. This led to his identification of characteristics of oral expression in oral cultures untouched by writing (Ong, 1982). Ong (1982, p. 69) suggests that "oral communication unites people in groups", whereas reading and writing are solitary activities that isolate people from the human life world.

Writing is not a neutral technology. Ong traced how culture changed when new communications technologies were introduced: from oral to manuscript, and then manuscript to print. He proposed that writing restructures thought by "fixing" words and opening the way for analysis and sequential thinking that underpin rational thought (Ong, 1982). Almost 20 years previously Marshall McLuhan in his study *Understanding Media: the Extensions of Man* argued that, "We shape our tools and thereafter they shape us" (1964, p. xi). Both Ong (1982) and McLuhan base their arguments on a connection between the way we use our senses and the way we think. McLuhan's view is that prehistoric, or tribal, man existed in a harmonious balance of the senses, perceiving the world equally through hearing, smell, touch, sight and taste (McLuhan, 1969) and that writing alters this balance moving from aural, kinetic senses to the visual sense.

2.2. ORALITY AND TECHNOLOGY

A number of researchers have looked at the issue of how ICT reflects orality and caters for the basic human need for oral communication. Ong also examined electronic culture, for which he used the term "secondary orality", where text and print are employed to basically underpin enhanced oral activity. He argues that secondary orality – telephone, radio, television (those technologies in use at his time of writing) – has striking resemblances to the old orality in its "participatory mystique, its fostering of a communal sense, its concentration in the present moment and its use of formulas" (Ong, 1982, p. 136). Ong argues that we are again in a state of transition, this time from print to electronic processing, and suggests that this will create something in the nature of a "return" to the previous orality. McLuhan predicts the electric age "will ultimately retribalize man by restoring his sensory balance" (McLuhan, 1969); and that the communication of the future will be "tactile, post-verbal, fully participatory and pan sensory" (McLuhan 1964, p. 80). Virtual reality appears to have some of these characteristics.

Metcalfe (2007) defines telephone and radio – delivered by traditional means or via the Internet (Skype, podcasts, etc.) – as the basic oral communications technologies. In addition, today it is essential to place a special emphasis on mobile telephony as a major medium of voice communication, and mobile devices such as MP3 players also support orality through exchange of sound files.

Maxwell and Macauley (2006) note the move away from text-dominated interfaces and content as we enter an age of "post-literacy", where the oral and visual culture of Western society have re-emerged once again. The Internet, along with mobile technology, are key players in this evolution. The hypertext of the Internet removes the linearity of writing while multimedia, with its images, video and sound files, challenges the hegemony of print (Warschauer 1999). Warschauer sees the rise of the Internet with its new literacies as part of the Information Revolution, in the same way that universal print literacy was the product of the Industrial Revolution. New technologies alone are insufficient to bring about mass change but interact with sociopolitical factors.

Furthermore, some authors have noted that even text-based ICT often show more oral traits than traditional writing on paper. December (1993) notes the emotive, expressive and participatory nature of computer-mediated communication (CMC), which recreates the immediacy of the oral. He suggests that CMC exhibits a tertiary orality, following on from the secondary orality of telephone, radio and television proposed by Ong (1982). December studied chat rooms and bulletin boards on the Internet and found they had many characteristics of orality, despite their dependence on text for communication. The creation of communities of interest around these technologies was important in transforming the communication style. In the chat rooms participants discussed a wide range of subjects close to their concerns as if they were talking at a face-to-face social gathering. On the electronic bulletin boards December found many of Ong's characteristics of orality (Ong 1982). These included the use of additive speech patterns where clauses were joined together by "and", as well as additive "cascades" of statements; aggregation of new contributions to the discussion by first quoting a previous contribution; copious repetition to remind readers of the discussion up to that point; discussion "close to the human life world" through the inclusion of topics of concern; the empathetic and participatory nature of the interactions; as well as a sense of conversing in a shared situation. December concludes that people "participate and add to a conversation in a way not unlike an oral conversation, in which they add details, broaden or change the subject, and add expressive additions of their own to the discussion." These findings show that it may be more useful to think of an orality-literacy continuum rather than a strict divide.

2.3. INDIGENOUS ORALITY AND ICT

In recognition of the ability of ICT to support orality, many systems have been developed for Indigenous people. Indigenous language content and teaching aides are an obvious focus, including CDs, CD-ROMs as well as sound files in native languages accessible from websites. Many of these projects are aimed at preserving languages which are under threat of extinction, teaching language to children in the community, and occasionally at promoting intercultural dialogue with outsiders (Cazden, 2003; Auld, 2002)

Mobile technology has in recent years been taken up in a big way by many Indigenous people. Africa has been the leader in mobile technology adoption, with faster growth of subscriptions than any other part of the world for the five year period from 2001 to 2005 (Butler 2005). The average annual increase for this period was 58%, with one in five Africans owning a mobile phone (LaFraniere, 2005). More than 70% of Africa's telecommunications services now consist of wireless technology (Lougheed, 2004). The high cost of fixed-line services and their absence in many remote communities, combined with the deregulation of the telephone market has fueled this unexpected exponential growth (Research ICT Africa! 2004). The experience in Africa has shown that it is possible to develop mobile devices which are environmentally robust and can withstand heat, dust and rain to suit the conditions where many Indigenous people live (Dyson, 2007). New design approaches in Africa have also demonstrated that the screens of mobile devices can be designed to be usable by illiterate or semi-literate people with strong visual-pictorial cultural traditions (Dyson, 2007). Moreover, Africans have devised practices which overcome the challenges of the high cost of mobile phones relative to average income and rechargeability issues where electricity supplies are limited. Village entrepreneurs make a living by levying community members for the use of their mobile phone on a per use basis, while other entrepreneurs with spare car batteries (recharged at the nearest town with an electricity supply) will power up mobile phones for a fee (Butler, 2005; LaFraniere, 2005).

Mobile phones suit the needs of Indigenous people whose communication style is centered in the oral. In poor countries where there is a trend to itinerant work and a drift of people from rural areas to the cities, workers are often separated from relatives left behind in the villages with whom they need to communicate at least occasionally (Marsden, 2002). Even in wealthy countries mobile phones may fulfill Indigenous communication needs better than fixed-line phones: traditional Indigenous lands are often located far from main infrastructure routes and studies have shown that communal use of fixed-line phones coupled with low income often result in high rates of disconnections when the subscriber is unable to pay (DCITA 2002). Mobile phones are obviously used by Indigenous people for voice calls, but there is some evidence that Africans are increasingly using mobile devices for text messaging both in private life and for business transactions (textually.org). No research has been conducted on why people from an oral culture would embrace a written form of communication in this way, but perhaps SMS messaging represents another mode of tertiary orality, as defined by December (1993) with respect to chat and bulletin boards.

3. Orality and Technology on the Island

3.1. METHODOLOGY

To investigate technology adoption in an Indigenous community, we selected a largely ethnographic approach in which detailed observations over an extensive period of living and working with the community provided rich descriptions about the people and their technology adoption and use. Specifically, we sought 'ethnographic particularity' within the global phenomenon of technology uptake (Landzelius 2006, p. 2). Details of

the situation were recorded to discover broad points of commonality but also subtle local influences. Some of the observations have been published previously (Brady, 2001, 2005, 2007; Brady & Asela, 2007; Gaidan, 2007; Mau, 2007).

The three researchers consisted of:

- a member of the community who is a qualified linguist, an expert in the local language Kala Kawa Ya and has worked on cultural revival projects using ICT;
- an outside ICT consultant and trainer who had worked closely with the community on computer training, ICT implementation and cultural revival projects, visiting for periods of approximately 1 week per month over many years;
- an academic with expertise in ICT adoption by Indigenous people and a background in language, who had previously visited the community for 5 days.

In order to support and validate the ethnographic observations by the researchers, telephone interviews were conducted with three local residents, all of whom have a high level of exposure to technology. The participants are employees of the local council and all are women. They all attended secondary school on mainland Australia and have completed post-school training. They have been proactive in using technology at work and facilitating its use for family and friends on their home island and other islands in the region.

Questions focused on the ownership and use of mobile phones since our on-ground observations had indicated that this was an area of particular interest. Despite the reporting of large-scale adoption of mobile telephony in Africa, there appears to be little, if any, research into this area in Australia with respect to Indigenous communities.

Semi-structured interviews were chosen to give the interviewees the space and the authority to examine their own experiences. A conversational style was used and sample responses offered only when the interviewee had difficulty understanding the question. The responses were typed up at the time of the interview. The interviews, limited as they were in number and representativeness, should be seen as a scoping mechanism for a more in-depth study in the future when it is proposed that a larger cross-section of the community will be interviewed face to face.

We first present some background about the community and their mobile phone adoption from our ethnographic study. This is followed by the results of our interviews.

3.2. RESULTS OF THE ETHNOGRAPHIC STUDY

3.2.1. Background

This study took place on a small Australian island in the Torres Strait close to the coast of Papua New Guinea. This island is classified by Australian Bureau of Statistics (ABS, n.d.) as 'very remote'; it requires travel by boat, light aircraft and then airplane to get to the nearest regional centre. Approximately 150 people live on the island and the small size of the population adds to its isolation.

The government is the main employer on the island, funding the school, the medical aid post (MAP), one of the two shops and the council. The council provides a full range of administrative and municipal services as well as a number of additional services such as housing and transport operations for the island people. The island economy can be described as hybrid: that is, comprised of public, private and

customary sectors (Altman, 2005). Island culture is dominant and local people have significant cultural obligations.

3.2.2. Language Use

Three languages are used on the island: the local language Kala Kawa Ya (KKY), Torres Strait Creole and English. KKY and Creole are predominant and the languages of everyday speech. There are 800 speakers of KKY (NILS, 2005) spread across three islands in the Torres Strait. The language has been recorded, a dictionary of KKY compiled and some of the Bible stories translated into KKY, but it is still classified as a critically endangered language (NILS 2005). The impetus for writing down KKY came from the missionaries and conversion of the people to Christianity in the 1800s, so that, apart from Church work, it is not a language that normally appears in writing and is nearly always confined to speech.

All islanders experience some degree of English cultural immersion since English is the official language of instruction at the primary school on the island. All children have to leave the island at around 12 years of age to attend secondary school on the mainland. Parents recognize the need for their children to be fluent in English in order to prepare them for high school and the improved employment opportunities that exist on the mainland. Most writing on the island is for educational or work purposes and is in English. Despite the high literacy rate of the population – it is expected that all children complete their full 12 years of schooling – writing is not a normal practice outside the work and school environment since it is not part of the cultural tradition.

3.2.3. Fixed-Line Telephones and Mobile Phone Adoption

Like most Indigenous communities, the uptake of fixed-line phone services has been far less than in the general Australian community. The major factor is the cost of maintaining a phone for families whose income is usually below the national average and where extended families living in the one house are the norm and could result in high numbers of phone calls for which the subscriber may not be able to pay. However, people who work at the council have free access to phones at their workplace. In the past people needing to contact a person who did not have a phone would telephone the council or someone who had a home telephone and ask for a message to be delivered to the person. If that person needed to send a reply, they would then have to arrange to use someone's telephone or try the public telephone if it was operational.

In the last few years there has been a very rapid growth in the ownership of mobile phones in the community despite a considerable time lag between the availability of services on the mainland and their availability on the remote islands. Some island people were using mobile phones while on the inner islands and mainland long before the mobile service was available at home. Many people in the community had even bought mobile phones before the service was switched on. Within a few short weeks of the implementation of the wireless network in 2005 it was observed that most adults in the community had purchased a mobile phone. The low cost of mobile phones and the fact that no connection fee is required were certainly observed to be a major part of the reason for the uptake of this technology but there are probably a range of other factors which have not been fully appreciated.

Younger people on the island appear to have had no problems learning to use mobile phones and they taught the older people how to use the phones cost effectively. This contrasted with previous studies of ICT on the island where using the keyboard and reading the screen were viewed as barriers to computer use by older people.

3.3. RESULTS OF INTERVIEWS ON MOBILE PHONE ADOPTION AND USE

A summary of telephone (mobile and fixed line) ownership, access and use by the interviewees is shown in Table 1. Detailed results of mobile adoption and use gained from the interviews are presented in the text which follows.

Table 1. Telephone Adoption and Use.

TELEPHONE ADOPTION AND USE	Interviewee 1	Interviewee 2	Interviewee 3
Home Phone Ownership	0	1	1
Office Phone Access	Unlimited calls	Unlimited calls	Limited calls
Mobile Phone Ownership	1	1	2
Mobile Phone: estimated calls made daily	3	1	<1
Mobile Phone: estimated calls received daily	14	2.5	10
Mobile Phone: estimated text messages sent daily	Some	10-20	100
Mobile Phone: languages used in calls	Equal KKY, Creole, English; a mix if respondent knows all 3	Creole & KKY; English only when no word exists	All; depends on who rings and what you want to say
Mobile Phone: languages used in text messages	Mix of KKY, Creole, English	English, Creole & KKY	KKY & Creole
Mobile Phone: best feature	"Can talk to family every time. Family and friends."	"Easy to communicate with the person you want to communicate with."	"Text family members who are far away what you have been doing."

The interviewees each owned at least one mobile phone. One had only an old CDMA and two had the more current 3G phones which provide additional services such as Internet access and phone cameras. Mobile telephone ownership was perceived to be almost universal whereas only some homes had a fixed line telephone: "Everyone

I want to talk to has mobiles. Very hard to contact people otherwise." Two had a parent who used a mobile phone. Older people were able to use mobile phones by being taught the basic functions by their children: "It is the only thing that we taught her to use: to make a call and take a call and hang up."

Participants expressed a liking for all functions of the technology, finding them easy to use. Mobile phones were used predominantly for talking and for sending text messages. Two respondents took photos, while the other's telephone did not have this function. One reported using the phone for video, games and music. All respondents used the phones primarily for communication: being able to communicate with family and friends easily was the best feature of the device (see Table 1).

The data showed more mobile phone calls were received than made and more texts were made than calls (Table 1). Although some calls and text messages were made to people on the island, most were to people who were on another island or in Cairns, the regional centre on the mainland. Both phone calls and text are generally to family and friends although small numbers of business phone calls were also made. Calls were mainly for making arrangements and in emergencies, whereas text was mainly used to maintain contact or communicate with friends and relatives. A further use as a message bank was voiced by one interviewee: "If they're not answering phones, I'll text them to give me a call".

Benefits of calling included being able to hear what people are saying and being able to recognize the voice of the person called: you "could hear their voice whereas for texting you never know who's on the phone. Unless you know the person very well and know how they text". The same respondent also noted that calls were better than text in some situations: "yarning through text. I'll text, they'll text. If it gets really interesting I'll give them a call". Participants reported they liked text as a medium: one respondent said they liked text because "you can think while you write it down". Other benefits of text included that it was fun and quicker than email.

The cost of calls was a concern. One respondent said that, if calling were the cheaper option, they would prefer to call. Also, one person reported using text to leave a message rather than causing the recipient to incur call costs to retrieve voice mail. Texts were also used when the prepaid amount ran low: "If I don't have enough credit I'll send them a short message." Telephone credits could also be transferred to some one running low on credit. Those participants with 3G have experimented with Internet connections but did not use the Internet because of the cost. The respondents all seemed to manage mobile phone costs effectively and have knowledge of different options: "Check my balances – purchase prepaid card."

All participants report using the three languages, KKY, Creole and English when calling or texting: their choice of language was dependent on the person they were calling, whether there were words available in English for what they wanted to express, or sometimes perhaps on personal preference. All reported using a mix of languages in the same conversation: "It's just like when you're talking." One participant expressed no preference for which language they used, but another showed a preference for Creole or KKY over English when phoning, and the third a preference for KKY or Creole when texting. There were no reports of problems with writing or reading texts in KKY even though normally KKY is an oral language: "I understand what they talk about and they know what I want to talk about." The only problem identified was with

typographical errors: "sometimes when I am in a hurry they have to write back to check what I am saying". As with texting in English, abbreviations are also used, for example, "gr" instead of "gor", Creole for the English "go", as in, "I gor come" (English: "I am coming").

Photos taken with the mobile phone were predominantly of children and things happening in the community. Photos were mainly stored in the mobile phone and shown to other people on the phone. One respondent reported sending photos and video by phone to family and friends; she also uses her photos as wallpaper on her phone. None of the respondents had tried downloading photos to a computer for printing or emailing.

4. Discussion

The most outstanding findings of our preliminary study concerned the extent of mobile phone adoption and the interesting uses to which they are being put, in particular for communications in KKY.

4.1. HIGH MOBILE PHONE ADOPTION

Both our ethnographic research and our three interviews indicate a very high rate of mobile phone adoption: "nearly everyone" has a mobile, in the words of one of our respondents. This high mobile phone ownership on the island is reflected in Indigenous Australia generally: "Telstra's own figures have shown that the introduction of mobile telephony into Indigenous communities has trebled the usage expected" (DIR, 2006). These results confirm the African experience described in Section 2.3. An interesting finding in our study was that our interviewees chose to have mobile phones even when they had access to fixed-line telephones at work and/or at home. Moreover, they had to pay for the purchase and use of their mobile phones, in contrast to their free usage of work council phones.

Is this rate of adoption of mobile phones surprising, given that 88% of Australians own at least one mobile (Australian Mobile Telecommunications Association, 2007)? It *is* unusual to find Indigenous communities adopting ICT at the same, or possibly even a higher, rate than mainstream society. Generally, the adoption of fixed-line phones, desktop computers, the Internet and other common ICT is much lower for Indigenous Australians (DCITA, 2002).

There is thus a strong indication that the mobile telephone offers something which is highly valued and worth paying for, even by people whose income is less than average. There are a number of possible reasons. They are certainly cheap to buy, especially compared to the cost of purchasing and maintaining computers. The phone is small enough to be kept on the person so it is secure and can be retained for personal use if desired so that usage can be regulated, a common concern in extended families living together. Mobile phones are more private than fixed-line phones in overcrowded housing or when working at the council since it is possible to take the phone outside. Since mobile phone calls can be included in Ong's (1982) secondary orality, the high

rate of adoption is not unexpected in an Indigenous community where both the language tradition and the current language practice is oral.

A major reason for their popularity is that they provide a means of fulfilling the need of communicating and keeping in contact with family and friends (see Table 1). In this respect the use of mobile phones overlaps with that of the mainstream Australian community: overwhelmingly most Australians use their mobiles for contacting family (48%), followed by friends (26%) (AMTA, 2007). We can say that mobiles fulfil this basic human need in both the Indigenous and non-Indigenous communities. However, on the island, because of the diaspora of children away at high school, and adults away working on the mainland, there is an even greater need to maintain communication links. As Landzelius (2006) notes with respect to the Indigenous diaspora, ICT allows de-centred peoples to reach out into meaning-making. With interests predominantly family and community, a technology which re-enforces links and which maintains locality for those forced to live away is by far the most attractive. Hence the high adoption of mobile technology.

4.2. TEXT MESSAGES

Given that language practices on the island have always been overwhelmingly oral rather than written, the use of mobile phones for texting was unexpected. One respondent reported an astonishingly high estimated number of messages sent each day –100! It is ironic that technology is actually encouraging these people, previously disenfranchised by traditional literacy, to write. There is perhaps an appeal in using informal writing, given that previously most of the writing experience would have been formal and in English.

Text messaging is often seen as a very poor medium of communication, with limits on the length of messages imposing a need for shortcuts, abbreviations and symbols. There are even those who view this sort of change as leading to the erosion of writing and its replacement by a telegraphic sort of plainspeak (Birkerts 1994, p. 128). Despite this – or perhaps because of it – one respondent reported having real time conversations in text. Oral practices are quickly becoming embedded in their practices of writing (Sweeney, 1987). Presumably the standard abbreviations allow greater rapidity of communication. In addition, shared context allows people on the island to develop what Malinowski (1923), in his classic studies of Trobriand Islanders, called "phatic communion", where much of the meaning of a communication does not need to be explicitly expressed. The comments of respondents appear to align with these concepts: "I understand what they talk about and they know what I want to talk about."

The success of text messages contrasts with some other communication technologies which have been tried and failed. At one time bulletin boards were used during training sessions, but were not sustainable perhaps for a number of reasons, such as the fact that access was limited to work hours because of low private ownership of computers, as well as the public nature of the board so that only rather formal exchanges were made since one never knew who was watching. Email suffered from the lack of people who could access computers regularly, so communication could be very slow even though it was a private communication.

The acceptance of text messages over these other CMC technologies therefore indicates that probably here we have another example of tertiary orality, as defined by December (1993). As one respondent noted, it is like "Yarning through text." Since phone calls were still preferred by the respondents over text messages, the main incentive for texting is the lower cost. Though similar to orality, they are still not seen as good as oral communication.

4.3. CMC IN KKY

The most significant finding of our study was that many of the phone calls and text messages are being expressed in the local language KKY by all three respondents (see Table 1). This is both highly unexpected and potentially very important. There has been concern on the island that some of the community and the diaspora on the mainland are making mistakes when they speak KKY and that the language is dying. These are real concerns since "any language which has a very small number of speakers is bound to be in trouble" (Crystal 2000, p. 12). Mobile phone technology, more than any other, is enabling contact to be kept with the diaspora of KKY speakers as well as those KKY speakers on other islands. More people are actually using their language more frequently and keeping it alive. David Crystal (2000) has six postulates that assist language revitalization, two of which appear to be present in this situation: when the speakers can write their language, and when speakers can make use of technology to help them in maintaining or acquiring their language.

The most astonishing fact about the text messages in KKY is that these would represent the most writing ever done in what is overwhelmingly an oral language, with the exception of certain formal texts, such as Bible stories. Formal writing at school or council is always in English, while KKY and Creole (well represented in mobile use) are generally oral languages. So people who are normally only literate in English are texting in these two languages. Again, the tertiary orality of text messaging seems to be leading people to text in languages which they previously only used orally. A question we must also ask is whether this language choice is at least in part political. As Bandia (1994) writes of West Africa, pidgin is a means to ensure group solidarity there and reinforces a sense of integration. Perhaps in the Torres Strait, texting in KKY and Creole is doing the same thing.

Whatever the reason these young women are texting in their languages, this offers hope for the continuance of one of the world's endangered languages.

5. Conclusion

This case study of one of the remotest Indigenous communities in Australia has shown that Indigenous people are enthusiastic adopters of modern technology in certain circumstances. Our study indicates that two factors are probably necessary for technology adoption:
1. The technology must play to the inherent strengths of the culture, for example the oral tradition; *and*
2. The technology must evoke a high degree of motivation.

In the community under study, the use of mobile phones fit with the strong oral tradition of the Islanders and motivation is created by fulfilling obligations to family and friends, such as by communication and keeping in contact. Like all Torres Strait Island communities, the diaspora of children leaving the island to attend school or adults leaving to gain employment has created a strong motivation by increasing the need for a communications technology to keep in contact. This need would be common across the Strait and result in similar patterns of mobile phone adoption and use.

A most unexpected finding of the study is the degree to which mobile phones are being used, not just for voice calls, but also for text messages. The free use that island people make of text messages (up to 100 per day in the study) suggests that this written form of communication may have many of the qualities of speech, as demonstrated previously with regards to chat rooms and discussion boards. The authors therefore propose that texting may represent another form of "tertiary orality" to use December's (1993) term. Further research will be needed to verify this claim.

Text messages have one extremely interesting outcome: much of the texting occurs in KKY. This language has rarely been expressed before in written form: the dictionary, a primary school traditional song book, the recently created hymn books and some of the Bible stories are virtually all the public texts in KKY. Texting has opened the door for new creativity in the written form of this language. The use of KKY messages may represent a resurgence in this language, spoken by members of three small island communities and previously in decline. This finding also has important implications for the teaching and revival of endangered Indigenous languages: texting may prove a useful and attractive learning method for the younger generation.

This study has put forward some preliminary findings on mobile phone adoption in one Indigenous community. The research follows several failed ICT implementations on the island and represents the culmination of a serious examination of the reasons for their failure. Contrasting the enthusiasm for mobile phones and other ICT deemed valuable by the community (Brady, 2001, 2005, 2007) versus technologies which have been used only with reluctance or for the limited life of one-off projects convinces us that the Indigenous people are making informed choices about their ICT adoption. Recognition of the factors behind these choices may well lead to better ICT investment and implementation decisions in the future.

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