

# 'We would have saved her life': mobile telephony in an island village in Papua New Guinea

## Abstract

As a new communication technology expands in a disadvantaged, rural area of a developing country, changes take place in the lives of the people in the area. The paper examines the introduction of mobile telephony into a rural village in Papua New Guinea, and contains findings from field research conducted in February 2009. The analysis is undertaken through a social lens, providing an understanding of the roles of mobile phones in this community by foregrounding the feelings, thoughts and attitudes expressed by the village people. This in turn enables a deeper understanding of the sociological effects related to the uptake of mobile telephony.

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## Introduction

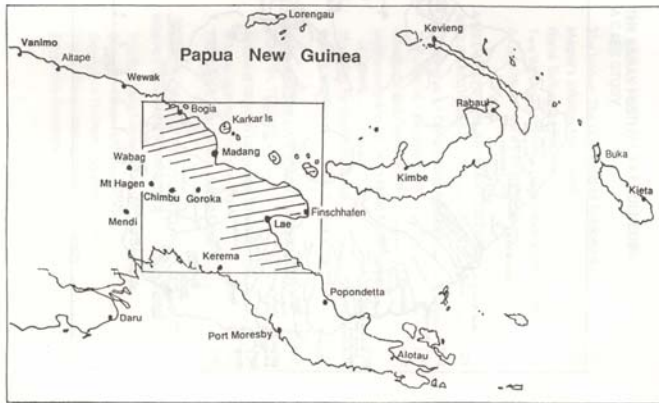
Substantial changes have occurred in the telecommunication sector in Papua New Guinea (PNG) in the last three years. Mobile telephony is rolling out to rural and remote parts of PNG at a rapid pace, following decades of inadequate service provision to these areas. While the vast majority of the citizens of PNG live in rural and remote localities (National Statistical Office of Papua New Guinea 2004; National AIDS Council 2006, 8), landline telephone infrastructure, Internet access and postal services are mostly limited to urban centres. Many of the areas which have recently gained mobile phone service do not have mains electricity or improved water sources.

The expansion of the mobile telephone network in PNG commenced in mid-2007, after the Independent Consumer and Competition Commission granted licences to two private companies: Digicel PNG Limited and Green Communications Limited (PNG Post Courier 2007). From the outset, Digicel campaigned in a highly visible manner, and began to establish a new network, with increasingly wider mobile phone coverage (Barker 2008). Indonesian-owned Green Communications has never provided any mobile phone services in PNG (Kaiok 2008) and is widely believed unlikely to do so. The government telecommunications provider, Telikom PNG, has made efforts to compete with Digicel and has extended its mobile phone capacity and infrastructure since the introduction of competition (Muri 2009). More recently, there has been a partial sale of Telikom PNG's mobile phone arm and it now operates as a public-private partnership company, independent of Telikom PNG (The National 2008).

This paper considers the recent advent of mobile telephone services in rural and remote regions of PNG and asks how this change relates to the lives of the people residing in these places. It is valuable to examine the introduction of mobile phones and the social changes taking place in rural communities in PNG as "there are still relatively few detailed studies of rural users" (Donner 2008, 151) in developing nations. This paper is based on field research which was conducted during the very early days of mobile phone adoption in a village named Orora in February 2009, only fourteen months after mobile phone reception first became available there.

Orora is situated within Sumkar District, which includes Karkar Island and nearby parts of the mainland of Madang Province. Karkar Island is a volcanic island north of Madang town (see Map 1), with a population exceeding fifty thousand (MTS Foundation 2007). The most recent volcanic eruptions were

in the 1970s (Pech 1991, 34; Global Volcanism Program nd; Stanley 1982, 389).

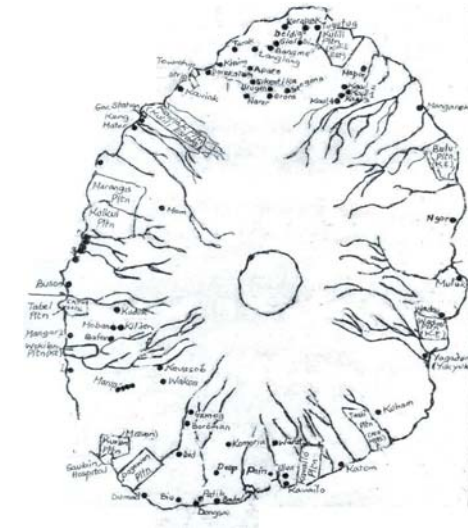


Map 1: Papua New Guinea (sourced from Kunze 1925, viii).

Orora consists of fifty houses, located on the mountainside, inland from the north coast of Karkar Island (see Map 2). Within each District in PNG there can be substantial variation in people's ability to access services "often because of where they live" (Hanson et al. 2001, 10). Orora is disadvantaged by comparison with coastal villages on the mainland or along the foreshore of Karkar Island, due to its position on the mountainside, accessible only by eroded, steep and slippery roads. The villagers are aware of this difference: "We're too far up the mountain compared to the villages at the shoreline where it's easy for services [...] to go through there."<sup>1</sup> (Naing 2009).

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<sup>1</sup> This text is an English translation of a quote from an interview in Tok Pisin.



Map 2: Karkar Island (drawn by Ben Naing, used with kind permission)

Orora does not have a marketplace or health centre. No-one in Orora owns a motor vehicle or a home telephone. There is no electricity supply, and only one house has a diesel generator. Kerosene lamps are commonly used for lighting. There is a Catholic church, which is visited by a priest on a rotational basis. The church building is also used for the village's elementary school<sup>2</sup>. The villagers live a mainly subsistence lifestyle, eating seasonal foods and growing some cash crops. There is no improved water supply or postal service. The housing is made of bush materials (see Photo 1) and only one house has a rainwater tank, which leads to water shortages during the lengthy dry season<sup>3</sup>. Where toilets are available, they are pit toilets.

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<sup>2</sup> Community-based elementary schools provide "the first three years of formal schooling" (Hopkins et al. 2005, 78) in PNG, usually in the vernacular language (Weeks 1993), and feed into primary schools, where English language education commences (Hopkins et al. 2005, 77).

<sup>3</sup> Like most of PNG, Karkar Island has two seasons annually: a wet season, and a dry season (McSwain 1977, 3; Stanley 1982, 314).



Photo 1: Typical bush-material house in Orora<sup>4</sup>

This paper will consider whether the recent introduction of mobile phone reception in Orora stands to alter the lives of the residents. It will focus on the role of the mobile phone, and relevant trends in mobile phone scholarship and literature on communication technologies and development. The paper will outline the theoretical framework, research question and research methods. It will then convey the key research findings, before relating these to appropriate literature.

### Theoretical Framework

The empirical fieldwork addressed the following principal research question: what is the role of mobile phones in the 'communicative ecologies' of rural PNG villages? The definition used here for the term 'communicative ecology' refers to the range of communications that take place in a given setting (Tacchi, Slater and Hearn 2003, 15). In this context, this term is important as it encourages consideration of other communication tools, as well as media consumption habits, rather than focusing exclusively on mobile phones.

There is a sizeable body of literature available about mobile telephony and its impacts in society (e.g. Donner 2008; Katz 2008b; Kavoori and Arceneaux 2006; Goggin 2006) which asserts that "mobile telephony has a significantly greater degree of impact upon communication activities and practices, with further impacts across the wider society" (Flew 2007, 23) when compared with other communication and media devices such as DVD players. Inspired by the emergence of a range of new communication technologies, certain

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<sup>4</sup> The copyright on all photos used in this paper belongs to the author, 2009.

theorists are optimistic that these tools can be used to achieve improved wellbeing for poor people around the world (e.g. Beschorner 2007; Unwin 2009). This school of thought is known as 'information and communication technologies for development' (ICT4D). The current research project aims to distinguish itself from the ICT4D movement as it does not have as a premise the notion that mobile phones can be the solution to developmental challenges. Instead, it is open to discovering both negative as well as positive societal changes related to mobile telephony.

### Research Methods

Ethical clearance for this research was granted by both Queensland University of Technology in Australia and Divine Word University in PNG. Negotiations with village leaders began months in advance as gaining consent is essential before commencing research in PNG (Vallance 2008, 9). Having arrived in the village, the researcher emphasised that research activities would not begin unless the approval of all the relevant local leaders was gained, which took two days. Each individual approached was given the opportunity to choose not to participate (Vallance 2008, 9), after receiving a full explanation of the research aims in Tok Pisin<sup>5</sup>.

Three research methods were employed in Orora in an attempt to answer the research question. These were participant observation, a survey and interviews. The first method, *participant observation*, involved the researcher travelling to Orora, and living with a village family in their house for a period of nine days. During this time, the researcher ate with the family, participated in some village activities, and visited all the houses in the village by travelling on foot. The researcher took notes, which were expanded upon each evening, as is recommended by Tacchi, Slater and Hearn (2003, 54). While participant observation is a method commonly employed by anthropologists (Marcus 1995, 99), it is important to note that this current research project is not anthropology and does not aim to emulate the kind of total immersion over a long period of time that is frequent in that field.

During the researcher's stay in Orora, an orally administered *survey* was conducted in Tok Pisin with seventy two adults. This is a considerable

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<sup>5</sup> Tok Pisin is a language spoken throughout much of PNG.

percentage of the adult population, given that the village consists of only fifty homes. All of the homes in the village were visited during the survey period and adult family members were surveyed. Participants were poorly educated<sup>6</sup>, ranging in age from about fifteen to seventy nine<sup>7</sup>. Despite concentrated efforts to include women, there was a gender imbalance, with only twenty six of the respondents (36.1%) being female.

From the seventy two survey respondents, three people were selected to participate in *semi-structured interviews*, which “typically involve an interview guide as opposed to a fully scripted questionnaire” (Willis 2005, 20). The first interview was conducted with a village leader named Albert Wowe, who was keen to talk about traditional communication techniques. The second interview was with Shong ‘Moks’ Naing, the first man in the village to own a mobile phone, and the third interview was with Gering Balipini, a woman resident and member of a different clan to the other two interviewees.

## Research Findings

### *‘We would have saved her life’*

Shortly before the introduction of mobile telephones in Orora, a woman gave birth on mats on the floor of a bush-material house. Once the baby was born, her placenta and afterbirth failed to come down. Although their removal is a relatively routine procedure in a hospital, in this small, rural village on an island in a developing country, finding help was a real problem.

At this time it was very hard work to go on foot and find a car and check it was working. There were excuses like the tyre is blown, or OK another one we went to look at, the battery was flat, this kind of thing. And we went to one and the battery was flat, so we tried to push-start the car. It was night and we pushed the car and we thought it would start, and it would work for us, go, go, no, no, it didn’t start. We came back, no. The ambulance

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<sup>6</sup> No respondents had received any higher education. About a quarter of respondents (seventeen, 23.6%) had started high school, but none had gone beyond grade nine. Nearly half of the respondents had completed primary schooling only (thirty two, 44.4%) and about a third had not completed their primary education (twenty three, 31.9%).

<sup>7</sup> Age was a difficult thing to assess accurately as most villagers were not sure of when they were born. Generally ages were guessed following a lengthy discussion of the milestones in the person’s life.

came here very early in the morning, no, the woman had already died.<sup>8</sup> (Naing 2009)

This incident happened in Orora only a few years ago. But the experience is not isolated to this one occasion or place. According to country-wide figures, there are “more women and children dying during birthing, than dying of malaria” (Giris et al. 2005, 5). There is evidence that PNG’s “leading indicators of women and children’s health [...] are among the lowest in the Pacific” (Giris et al. 2005, 5). In the case of people living in rural localities, health indicators such as the doctor/patient ratio and the infant mortality rate are worse than for those people living in urban centres (Giris et al. 2005, 4-5). The harsh reality is that poor people in rural and remote villages often do not have access to adequate healthcare facilities, transport options and communication systems. The relevance of this story is that the outcome might be quite different due to the recent introduction of mobile phone reception.

We know that mobiles are here and we can directly ring the ambulance or a car, like a man who has a car in a village, if we know his phone number, we can ring him and the car can take her away. It’s easy, you can just sit. There’s no need for the hard work of walking about on foot, going here, going there, you can sit in the house and ring others. If they give an excuse, you can ring another person again. So I’ve weighed it up and I think mobiles coming in is good. I understand, and last time I told you, I think if this system had come through to us before, we would have saved this woman. But it hadn’t, and we lost her.<sup>9</sup> (Naing 2009)

### *Communicative ecology*

The survey conducted in Orora assessed the communicative ecology present, honing in on the availability of specific communication technologies, as well as media consumption habits. The survey established that residents in Orora have limited access to media output, such as newspapers, radio and television. Survey respondents were asked if they have a television, computer, Internet connection or radio in their house. No respondents (0.0%)

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<sup>8</sup> This text is an English translation of a quote from an interview in Tok Pisin.

<sup>9</sup> This text is an English translation of a quote from an interview in Tok Pisin.

had a television, computer or Internet connection. Only twenty two respondents (30.5%) had access to a working radio receiver in their home.

Data was also collected on the communication behaviours of the previous month. About a third of the respondents (37.5%) had listened to radio within the last month. Only a very small number had sent a letter (5.6%) or received a letter (8.3%) within that month. A small number of respondents (5.6%) had watched television within the last month during travels outside Orora. A similarly small group (9.7%) had watched a movie during the specified time period, again outside Orora. Within the last month, only 11 people (15.3%) had read a newspaper and only nine people (12.5%) had read a magazine. Just over half of the respondents (52.8%) had read a book, five people volunteering that it was the Bible. Only one person had been to Bogia (a town on the adjacent coast), but 12 (16.7%) had been to Madang town during the month under review. None of the respondents (0.0%) had used a computer, accessed the Internet, looked at a website or used email within the last month.

When considering the opportunities that have been available during the course of their lives, no Orora residents (0.0%) said they had used a computer, Internet, websites or email. Ten (13.9%) said they knew of someone using the Internet or email, but the level of understanding about the Internet and email was minimal. Only seven respondents (9.7%) had watched television at any point in their lives, and only 11 people (15.3%) had seen a movie. For print media, exposure had also been low, with only 16 people (22.2%) having read a newspaper and nine people (12.5%) having read a magazine. By contrast, a high number of people (59, 81.9%) suggested they had read a book and 65 people (90.3%) had listened to the radio at some point in their lives. No respondents (0.0%) had been overseas, and only 11 people (15.3%) had travelled to another province. Most of the respondents had been to Madang town at some time (67 people, 93.1%).

### *Mobile phones*

Of the 72 survey respondents, only 18 (25.0%) owned a mobile phone at the time when the survey was conducted. With the low numbers, while percentages may be used, these are only seen as indicative of trends within the group. As can be seen in Table 1, the usage patterns were strikingly low. An important factor contributing to this low usage is the difficulty of charging mobile phone batteries as there is no mains power supply. Eight survey respondents volunteered that their phone had no battery power at the time that they were surveyed. Another was unable to use his phone as he had unwittingly purchased a stolen handset and the mobile phone company had

subsequently blocked the number. This means that although a quarter of the Orora adults surveyed owned a mobile phone in February 2009, a much smaller number (12.5%) were actually able to use their phones at the time.

	No of calls / SMSs	Frequency	Percent
Ring out yesterday	0	12	66.7
	1	0	0
	2 or more	6	33.3
	Total	18	100.0
Receive calls yesterday	0	13	72.2
	1	0	0
	2 or more	5	27.8
	Total	18	100.0
SMS sent yesterday	0	12	66.7
	1	2	11.1
	2 or more	4	22.2
	Total	18	100.0
SMS received yesterday	0	13	72.2
	1	1	5.6
	2 or more	4	22.2
	Total	18	100.0

Table 1: Mobile phone use in Orora

Most often, relatives were phoned, along with calls made to maintain social relationships with friends, renew acquaintances, solicit gifts or fulfil social obligations. Only one respondent said that they used their phone for calling business contacts. Urban centres within PNG were the places most frequently phoned. Most commonly, calls were to check on people and see how they were, or to ask for something, such as money or other assistance. The torch function in many handsets was used often in Orora after nightfall. Over half those who did not own a mobile phone (59.3%) indicated that they intended to purchase one.

*Perceptions of mobile phones*

The perceptions that people in Orora had about mobile phones were mixed. Table 2 shows the community's perceptions of this new technology: about half the respondents (51.4%) viewed this change as a positive development, while nearly half (41.7%) saw both positive and negative effects of this change.

	Frequency	Percent
Not good	5	6.9
Good	37	51.4
Both good and bad	30	41.7
Total	72	100.0

Table 2: Orora respondents' judgements about mobile phones

Orora community members expressed positive comments about it being easier to contact friends and family who live a long way away from Orora. A high number of people talked about using the mobile phone to ask for assistance from others (such as requesting money or store-bought goods). Quite a high number of comments were made about the use of mobile phones in emergencies, and about it being easier to ring someone compared with walking a substantial distance to see them. Several people pointed out that using a mobile phone saves money that would have otherwise been spent on boat tickets or cars.

The most frequently raised concern was about the use of mobile phones to foster illicit relationships between males and females: either leading to extra-marital affairs, or young people having inappropriate relationships. The second most commonly raised concern was with regard to mobile phones being used by criminals to organise hold-ups (ambushes) of people walking around the island. The other frequently raised concerns related to the costs of owning and operating a mobile phone. Practical issues were also raised, such as not knowing how to use the phone, the difficulty of charging the battery, and the difficulty of buying phone credit.

*Money, business and income generation*

In Orora, the main income generation avenues are selling natural produce at the weekly market in the neighbouring village, and growing cash crops, mainly coconut and cocoa. These are the means by which respondents raised funds for mobile phones. The local economy is also supported by remittances from relatives who live and work in urban areas and most of the respondents indicated that other people helped them with purchasing phone credit. For charging mobile phone batteries, the villagers used the one diesel generator in the village or walked down to the stores on the coast to charge the handset there, at a cost. Many people expressed concerns about the expense of using mobile phones. Of the fifty four survey respondents who did not own a mobile phone, thirty five (64.8% of non-owners) referred to money as a key factor. In most cases, they did not have enough money to buy one, and in some cases they expressed concern about the high costs of ongoing operation.

Only one survey respondent indicated that they used the phone for business purposes. Cocoa fermentary owner Moks Naing (2009) talked about the usefulness of the mobile phone in conducting business, as it allows contact with people travelling to sell cocoa for him. He said that he had previously used the mobile phone to determine which plantation on the coast was purchasing cocoa at the best price, but he had desisted with this practice as he had difficulty securing use of a vehicle and usually had to load his produce onto a vehicle with a pre-determined destination (Naing 2009).

*Traditional communication methods*

The *garamut* is a wooden drum which can be heard over long distances. It played an important role in the traditional communication practices of people in villages such as Orora. Furthermore, it is still in use today, with regular, almost daily, usage of the *garamut* in Orora and neighbouring villages (see Photo 2). Local government Ward Member Giragir Mahana referred to the

*garamut* as 'The Mobile Phone of the Village' and saw it as an important part of the communication landscape in the area as one beat of the drum can bring everyone from surrounding villages together. Specific rhythms indicate particular, differing messages, for example calling people together or advertising a funeral (Wowe 2009). There are drums with distinct sounds, for each of the clans within the village. In addition, individuals can recognise the timbre of their own instrument at some distance. Thus each person has their own *garamut* signal, or 'mobile phone number' (Wowe 2009).



Photo 2: Giragir Mahana beating the biggest of his three *garamuts*

## Discussion

Studying the mobile phone in isolation would not adequately convey the "mix or repertoire of communications skills and resources" (Tacchi, Slater and Hearn 2003, 15) which exist in Orora. Instead, in research exploring communicative ecologies, it is "crucial to look at *everything* that could count as a medium of communication" (Tacchi, Slater and Hearn 2003, 16), which is why Orora residents were asked about travel to urban centres as well as media consumption habits. The survey established that residents in Orora have limited access to media output and travel infrequently to urban centres. As over half of the respondents in Orora had not listened to the radio within the last month, this finding weakens arguments from some researchers that "radio is the most suitable medium of mass communication in PNG because it corresponds better to the oral traditions of the country" (Rooney, Papoutsaki and Pamba 2004, 3). As Mennis points out, radio broadcasting in Madang Province can be valuable for communication, but only to the extent

that people are tuning in (2006, 254). Very few people in Orora regularly read newspapers, and this finding is in keeping with previous research about media in PNG which suggests "newspapers rarely circulate outside of urban areas so the vast majority of Papua New Guineans are excluded from information" (Rooney, Papoutsaki and Pamba 2004, 4). There is no usage and little understanding of computer-based communication technologies in Orora. These findings are important as "scholars must take the mobile communication context into consideration" (Bakke 2010, 365).

In mobile phone research conducted in Sudan, Brinkman et al found that the device can be useful in emergencies (2009, 81), which matches Naing's argument (2009) regarding the potential benefit of the mobile phone in such circumstances in Orora. Similarly, Chib asserts that mobile phones are appropriate in time sensitive situations such as childbirth (2009, 16). Likewise, a study carried out regarding mobile phones in both Africa and India found there is "more use for emergencies and connections with friends and family than for dedicated economic activity" (Donner 2008, 147, referring to Souter et al, 2005). Such findings are supported by other research which suggests that social uses of mobile phones are of central importance for users (Bell 2005; Bakke 2010, 365; Tabinas and Guzman 2010; Donner 2008, 150), and are closely aligned with the current research project's assessment that a primary desire of villagers in Orora is to communicate with family members and friends residing away from Orora. Nonetheless, daily mobile phone usage patterns are low in Orora, due at least in part to people's "relative inability to pay for services" (Day and Greenwood 2009, 335), a circumstance replicated in rural areas throughout developing nations (Day and Greenwood 2009, 335).

There is debate amongst researchers as to the place of mobile phones in economic life and their economic impact in developing nations, particularly in the lives of poor and disadvantaged people. Some researchers suggest that mobile phones are an economic boon for the poor (for example, Beschorner 2007, 2-3). On the other hand, some research "suggests mobiles are doing more economic harm than good, and sometimes making poor people poorer" (Heeks 2008, np), or becoming a financial burden for them (Donner 2008, 149). ICT4D literature is concerned with how communication technologies such as mobile phones "can be used to enable the empowerment of poor and marginalised communities" (Unwin 2009, 33), although much of the promise has now been brought into question due to inconsistent outcomes in rural development endeavours (Day and Greenwood 2009, 346). Although the present research aims to distinguish itself from the ICT4D movement, it is nonetheless important to examine the relationship between mobile phones and business activity in Orora.

There was only minimal reference to business use in survey responses and interviews in Orora. This was much less than was expected on the basis of other research: Brinkman et al (2009, 74) found many business people in Sudan find the mobile phone helps them with their business, for example in arranging appointments and deliveries; Belt (2008, 95) suggests farmers in India are using mobile phones to conduct trade, and vendors in the Philippines are using mobile phones to help with transactions and communication (Tabinas and Guzman 2010). However, in the latter case, the researchers found no definite indication of an improvement in income (Tabinas and Guzman 2010), which may be due to the difficulty of measuring this, as there is evidence that mingling of business and personal uses of the phone is common in various countries (Donner 2008, 146).

Some studies have found that the mobile phone has been used by poor people to reach new markets (for example, Brinkman, de Bruijn and Bilal 2009, 87) or to find a suitable buyer or the best price for their goods (in particular, Jensen 2007). However, the potential benefit of mobile telephony in terms of income generation activities in Orora is limited due to other factors such as restricted access to both transport and markets. This finding fits with the outcomes of computer modelling which has shown that if transportation costs are prohibitively high, then communication technologies may be of limited value for poor farmers (DeMaagd 2010). It also aligns with the experience of farmers in Tanzania for whom the mobile phone is of limited benefit as they "have little choice but to accept the price they are given" (Molony 2009, 107).

When considering the impact of mobile phones in places like Orora, there are other factors to consider beyond economics (Donner 2008, 151), such as psychological, social and symbolic issues (Heeks 2008) and political, health-related and security-related factors. "Most research tells us that the poor are using mobiles for social more than business purposes" (Heeks 2008, np), which is a statement supported by the findings in this research project. Social and economic factors can be linked, for although social interaction does not have a direct monetary value, it can lead to increased support in times of financial crises or other emergencies (Heeks 2008). Regardless of the monetary value or cost of mobile phones, the uptake and use of mobile phones by poor people, along with "the significant amounts being spent by the poor on mobiles indicate that phones have a significant value to the poor" (Heeks 2008, np). Therefore it might be prudent to consider mobile phone adoption as "a process of familiarisation [rather] than as a hegemonising or developing force" (Brinkman, de Bruijn and Bilal 2009, 89).

The continued use of the *garamut*, a traditional communication method which has for hundreds of years "enabled limited messages to travel very rapidly over great distances" (Unwin 2009, 17) is important as it provides some perspective regarding the introduction of the mobile phone. Through using the *garamut*, people in Orora and neighbouring villages "have never actually needed to move physically to be able to communicate with one another" (Unwin 2009, 18), which means that "very rapid communication over considerable distances is not a particularly new concept" (Unwin 2009, 18). Little wonder then that the villagers refer to the *garamut* as the 'The Mobile Phone of the Village'. The ongoing contemporary use of the *garamut* in Orora demonstrates how modern communication technologies may fit into the existing communicative ecology in a rural community in PNG. Servaes is concerned that the introduction of modern communication devices in such settings means that "more than one teenager has lost his pride in the media his parents have culturally and traditionally cherished" (2000, xi). Thus it could be interesting to assess the use and relevance of the *garamut* in Orora once there are greater numbers of mobile phones being used and once other mediums are accessible through portable devices as well, given that Greenfield (2009) says more functionality will come to the village level quickly.

## Conclusion

Understanding the communicative ecology in Orora makes a contribution to the body of literature regarding mobile telephony in developing nations. The introduction of mobile telephony into Orora has not caused a revolution, but has created another resource for communication, with already some special impacts of its own. The survey sample size (72 respondents) limits the statistical analyses that can be undertaken in this case. However, the sample was a large percentage of the adult population of the small Orora community. Focusing on one community provokes deep insights, thereby giving some indication of patterns to look for in other villages. Comparing the findings in Orora with other villages would provide useful understanding of the communicative practices of rural people in PNG.

Research on mobile phones in urban areas of PNG could generate insightful findings, such as how people who have had access to modern communication technologies respond differently to people in remote villages where there is a virtual absence of these mediums. Much research has been done on the uses of mobile phones by young people in other countries (for example, Katz 2008a; Walsh, White and Young 2007; Kreutzer 2008; Brinkman, de Bruijn



and Bilal 2009; Mustafa, Siarap and Suan 2009), and thus it could be illuminating to study the youth in PNG and their mobile phone use.

The findings show some early impacts, like tension over this new element in social and sexual relations, potential use of this technology in emergencies, and much improved capacities for reaching relatives in urban centres. Some anticipated business uses have not yet developed. First expectations of mobile telephony being a new shock of modernity may be blunted, as villagers manage the process for themselves in a cautious way. The completion of further research in Orora at a later date could be valuable to chart the progress of various trends in relation to mobile telephony and other communication technologies such as the *garamut*. This paper contributes to the growing scholarship around mobile phones and to the body of knowledge around the role of communication technology in development. It also makes a singular contribution to understandings of communication in PNG.

### Acknowledgements

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