

1-1-2013

"Your neighbours are your friends": An investigation into microgeographical exchanges in the remote northwest of Australia between 1987-2012

Donell J. Holloway
Edith Cowan University

Lelia R. Green
Edith Cowan University

David Holloway

Follow this and additional works at: <https://ro.ecu.edu.au/ecuworks2013>



Part of the [Communication Technology and New Media Commons](#)

Holloway, D. J., Green, L. R., & Holloway, D. (2013). "Your neighbours are your friends": An investigation into microgeographical exchanges in the remote northwest of Australia between 1987-2012. In proceedings of ANZCA conference 2013 'Global Networks - Global divides': Bridging new and traditional communication challenges. Gold Coast, Australia: Australian and New Zealand Communication Association. Available [here](#)

This Conference Proceeding is posted at Research Online.

<https://ro.ecu.edu.au/ecuworks2013/262>

‘Your Neighbours are Your Friends’: An Investigation into Micro-geographical Exchanges in the Remote Northwest of Australia Between 1987-2012.

Donell Holloway

Edith Cowan University

Lelia Green

Edith Cowan University

David Holloway

Murdoch University

donell.holloway@ecu.edu.au

Abstract

This paper addresses intersections of communication, technology and geography in remote areas of Western Australia. It uses verbatim accounts from fieldwork bracketing decades of communication development to explore changes and constants in the micro-geographical exchange strategies of people living in the remote northwest of Australia. It articulates the continuing irony that the Australians who most need reliable and effective communications are those who experience the greatest difficulty in accessing them. We contend that geographical isolation and continuing problems with the reliability and reach of communication technologies in remote Western Australia have cultivated a robust community in which flexibility, resilience and interdependence redress, to some degree, the vulnerability remote communities often experience—especially in times of stress or crisis. The paper includes historical interviews from the 1980s and contemporary (2012) interviews carried out as part of an ARC Linkage-funded project, 2012-14, with industry partner Landgate, a Western Australian government entity.

Keywords: community resilience, remote communications, micro-geographical, FireWatch, emergency, communicative ecologies.

Introduction

Due to its isolation, remote Australia does not receive the level of communication and emergency service usually available in regional and metropolitan Australia (Buckle et al., 2001). As such, neighbours have always been a first line of defence. As isolated homesteader Martin Allcott commented, back in 1989: ‘Your neighbours are your friends whether you like it or not. Well, if they’re not, it’s pretty sad. So you end up with a friend. If you were in the city, if there were that sort of person [as your neighbour] that you would call your friend here, in the city you probably would not. You’d go another suburb away and pick someone out of the next ten thousand.’ (Green, 1999: 98; all respondents’ names are pseudonyms.) A quarter of a century later, those local relationships remain just as critical and as importantly interdependent. In 2012 a fire had been discovered in rural blocks on the outskirts of Kununurra. Jane Maitland described the multi-pronged communication strategy between neighbours that ensured people were safe, and that services were used effectively: ‘We phoned around and someone would phone and call in. Instead of 000 being rung ten times, make sure that one person rang it in. 40 channel [CB Radio] was handy – two-way communication, 4 wheelers – knocking on doors making sure everyone is out of the house, just in case.’ The degree of community interdependence evident in these exchanges highlights how isolation may (in the right circumstances) foster interdependent and resilient communities that rise above the difficulties associated with living in remote Australia. Poor communications and service provision renders ‘remoteness [...] a direct measure of vulnerability yet it could also mean that people were more self-reliant and therefore more resilient, in so far as they had to develop coping behaviours and strategies’ (Buckle et al., 2001: 25).

This paper uses transcripts from fieldwork carried out in remote regions of Western Australia in 1986-9 and 2012. The earlier fieldwork comes from surveys and interviews carried out by Green before and after AUSSAT, the Australian satellite service, began broadcasting in remote Western Australia. The 2012 fieldwork forms part of an ARC Linkage research project *Using community engagement and enhanced visual information to promote FireWatch satellite communications as a support for collaborative decision-making*, elements of which investigate the communications ecology of a remote Western Australian community. The FireWatch research reported on here is drawn from the interviews carried out in the first of two community-focused field trips (2012 and 2013).

Ethnographic data from the FireWatch interviews resonate strongly with material collected decades earlier and underline the critical importance of micro-geographical exchanges as a continuing theme of remote communications across the decades. Such communications between neighbours recognise the value and importance of proximity in responding to threats when a crisis situation is still developing, and in collaborating to deal with serious challenges to life or property, pending the arrival of emergency services. The interview data underline the importance in isolated areas of keeping in touch with people nearby. In both time periods, there was ample evidence of the importance of mutual reliance and the role of micro-

geographical exchange in facilitating a response to the various threats posed by isolation and a comparative lack of communication options. Indeed, the resilience and creativity of remote populations in harnessing technology to overcome communication barriers is evident in each set of interviews and is a central focus of this paper.

Background Information

In 2011, the Australian Research Council funded a Linkage Project application by Landgate, a Western Australian (WA) Government entity and Edith Cowan University. The primary aim of the research is to inform the development of a user-friendly version of FireWatch, a public information service provided by Landgate. FireWatch is an Internet product that uses near real-time satellite data to provide mapped information about bushfires—both current and historic. This information is provided to inform effective decision-making and risk management around the threats posed by fire in remote Australia. The research is divided into two separate yet connected elements: community consultation, to explore information-seeking and communication strategies around bush fire risks and events; and the application of user-centred design principles to an update of the FireWatch site to create accessible visual presentation of complex satellite data in ways which promote intuitive interaction with the site, and ready access to critical information in stressful circumstances. This paper draws upon the community-based research strand.

The term ‘micro-geographical’ has traditionally been used by researchers investigating song exchanges in populations of wild birds (eg Kroodsma et al., 1999), but its use by Heibert (2002: 210) established its value as a concept for investigating communities and social organisation. In the context of an examination of the ‘lived experience of [...] cosmopolitanism’, Heibert sought to investigate: ‘How does cosmopolitanism arise in the micro-geographical scale of the neighbourhood? Who participates (and who does not) in cosmopolitan interaction? Finally, what does it mean to grow up in a cosmopolitan setting?’ Equivalent questions are as relevant, maybe more so, when investigating communication ecologies in Australia’s remote areas. Thus, this paper examines effective communication in the micro-geographical scale of the remote area neighbourhood; it investigates the communicative ecologies that facilitate those interactions and it asks whether and how technology use might differ in these remote micro-geographic areas compared with circumstances that characterise regional and urban Australia. The data used in the study are the interview materials from the late 1980s and the early 2010s, evaluated with a view to establishing persistent features of remote micro-geographical communicative ecologies over time.

Altheide (1994, 1995) first developed the idea of ‘an ecology of communication’ to address the variations in technology access that reflect a person’s social circle, personal competencies and available/affordable technological resources. From the importance paid to context, it is clear that, at the individual level, not all ecologies of communication are equal, even in the same household, although the social element means that people’s ecologies of communication are influenced and informed by their neighbours. Hearn and Foth (2007: 1) construct such communicative ecologies as having three layers: (i) a technological layer; (ii) a social layer, the links between the communicating people; and (iii) a discursive layer, the content of the communication. They note, ‘the research perspective may be at either holistic (macro) or individual (micro) levels of analysis’. This paper particularly focuses on the micro-geographical, or neighbourhood, level of communication.

Micro-geographic communication in remote WA in the 1980s

The research reported in this section is built upon two non-random volunteer-response questionnaire surveys commissioned by the WA Office of Communications: one in 1986 (before commencement of the satellite-delivered Remote Commercial Television Service [RCTS]), and a follow-up study in 1987 (post-RCTS). These surveys were complemented in 1989 by unsponsored PhD research (Green, 1999) involving in-depth interviews with residents of Broome, Fitzroy Crossing, Sandstone, Gnowangerup, Esperance and a number of homestead properties. Together, these studies identified a range of hopes and community expectations for the future connections and services to be enabled via satellite delivery. Issues of communication technology usage were also highlighted.

Back in 1979, Federal Communications Minister Tony Staley championed the introduction of an Australian domestic satellite service in terms of its capacity to ‘dispel the distance – mental as well as geographical – between urban and regional dwellers, between the haves and the have-nots in a communication society’ (Staley, 1979: 2225, 2228-9, cited in Hazelhurst, 1990: 20). The first domestic satellite, AUSSAT, was prevented via a range of policy decisions from facilitating services that integrated voice telephony with broadcast television and radio.

Director of the WA Office of Communications, Phillip Skelton (1989: 56) called for the ‘eliminating or neutralising [of] Telecom’s paranoia about its monopoly [... thus] allowing the satellite provider to offer all the types of service for which satellites have a natural advantage’. As Skelton and fellow policy officer Tony Dean were subsequently to note (1990: 134): ‘For various historical reasons, communication policies and services in Australia have been segmented into watertight compartments of broadcasting, radio communications, telecommunications and postal services. This has generally worked to the disadvantage of people in rural and remote areas’. Partly in response to these challenges, people living in remote areas have traditionally had to work harder to create effective communication ecologies than is the case in more populous areas. In the same way, they work more diligently than city folk to make and keep their neighbours as their friends.

Indeed, access to communications hardware was only part of the problem at the time. As one homestead resident put the problem:

Alison Graham: Very, very few places have 24 hour power, and if you’re an employee on a station like most of the families on School of the Air are, it’s not up to them when the power gets turned on, it’s outside their control. It depends on the station manager and station policy about what hours they run their generator [...]. You just cannot get that through to people down south or in the city, I suppose. (Green 1999: 54)

Another interviewee had found a way to address the issue of intermittent power generation:

Felicity Rohrer: We have bought an inverter so that we can have power in our television during the day without having to put the motor on. So we bought that – that’s extra. We wouldn’t have had it if we didn’t have television. So that we can pop it on if we want to look at something.....

What’s an inverter?

Well, you charge up batteries – 12 volt batteries – and that’s 12 volt power and then it comes through the inverter which changes it to 240 to run your electrics. [...]

How many hours would that give you?

Oh, probably only about four with the television – with radio all day – it all depends what you've got. (Green, 1999: 204)

Prior to the 1980s research on satellite broadcasting, the WA Office of Communications had established that the most significant area of unmet demand in voice services was for reliable broadcast radio (DoCIT, 1986: 45) and a private phone service. As the free-form questionnaire feedback was to indicate, in response to the 1986 and 1987 paper-based surveys, some remote area residents felt that a television service was the least of their concerns: 'Stop fiddling while Rome Burns! Get comprehensive radio and telephone communications to the bush before TV and other 'frills'. PS: A decent mail service would also help', 'I value the radio communications a lot more than I do the TV', 'Priority No. 1: decent radio transmission throughout remote areas'. (Green, 1988: 31-36)

Sometimes, where the situation seemed sufficiently important, a small proportion of remote area residents had access to alternative communications options:

Do you find that the telephone's altered your life much at all?

Andrea Dixon: In times of crisis it's – it just gives you so much flexibility. I mean, before, we – sometimes we would fly to Carnarvon or fly up to Nyang or something to use a phone to find out if someone was critically ill or if you've had a critical business thing, well, you'd just travel those distances to make a phone call. (Green, 1999: 213)

The absence of a telephone service meant, however, that 2-way radio was widespread. Indeed, given the risks and dangers inherent in remote farm work, almost all properties had access to what was termed the RFDS, or Remote Flying Doctor Service, since the radio transceiver network became known by the name of the service for which it was primarily provided. In an emergency, the RFDS radio would be used to contact the RFDS base in order to get urgent medical help – assuming that there were no issues with reception:

Felicity Rohrer: The atmospherics were so bad we couldn't hear half the people and they'd get sick of it and wouldn't come [tune into the conversation ...] I had an emergency here one night and I couldn't get through, couldn't get through – you know, it was bad weather, and eventually after about an hour Meekatharra picked me up but it took ages and I was just about hysterical by the time I got through because it was quite serious. Somebody was quite seriously ill. (Green, 1999: 212)

Despite this, the RFDS transceiver could be used as a hub for communicating with a range of homestead nodes. Such communications tended to privilege gender and status, however.

Greg McGinley: A lot of people talk about the community life on radio, how they kept in touch and talked to everybody. But really that was either just the managers or the owners talking to other people. The ordinary worker, he didn't have those communications, so he didn't have communications with anybody. [...] It was a necessity which was mainly performed by the manager's wife, you know, they had big Aboriginal staff on the station in those days, and you know there was a lot of medicals and telegrams going backwards and forth and you know, to me, not often the manager had the time to actually get on it – it was more the manager's wife – that was her job to talk and communicate on the radio, you know. (Green, 1999: 212)

But even when it had been superseded, the RFDS transceiver was still useful as one element within a communication ecology:

Felicity Rohrer: We don't use Flying Doctor radio at all now [...] except to speak to the dogger or someone that's out in the field. We don't use it for communication, unless the telephone breaks down, which has only happened a couple of times.

So that little exchange that you had with Shelley there – back at __?

Oh, just now? That's on a CB. That's another communication we've just got. We have those in the cars – one in the aeroplane, one here. We've got an aerial and we can talk to everyone around the run. Now, that's revolutionised things out here because if somebody breaks down, they just call up instead of just sitting out there for ages and you have to go and look for them [...] We can hear practically all over the run except right behind the range. (Green, 1999: 215)

What is clear in this exchange is the high priority placed on managing communications in a micro-geographical setting. In all the exchanges above what is also clear is that power shortages, 'atmospherics' and other glitches had an effect on the reliability of the communication ecology, which was backed up by a patchwork of old and new technologies – inverters and the substitution of older technologies (RFDS radio) when newer ones (the telephone) break down – and highlights the resilience and adaptability remote Western Australians needed in order to maintain their communication ecologies. Two decades later, particularly in the context of community-wide threats such as wild fires, these micro-geographical communication ecologies remain critically important.

Micro-geographical communication in remote WA, 2012

The comments below are all drawn from a range of 19 interviews conducted in September 2012 with people living in and around Kununurra, Western Australia. The fieldwork sought to understand community-based communications around responding to fire risks and threats. The following vignette demonstrates the variety of ways in which different aspects of a resident's communicative ecology are mobilised in response to a recent fire, and the implications of asking for help from some groups of people rather than others. It also underlines both the interdependence evident in small communities and the benefits and frustrations of living in a small community.

During a fire emergency, where do you get your information from?

I saw it [i.e. visual identification]. I was the one that rang in the second fire. We had one in the morning at 5.30. We all attended to the first fire. The fire then ceased to exist, then I was at home on the phone when I saw it re-start behind my neighbour's house. I rang her and said – where are the children? She said they are in bed. I said – where are you? She said I'm at home. She looked out her back door, and that's when I rang 000. Then I made sure she got out of the property and I had to ring all my neighbours to come home from work because we had the fire back and had to protect the houses. Everyone had to be accounted for, moving cars, getting the tractors out, protect the bores because you need the water. It happens really fast and it is a matter of rustling everyone up with the machinery, like DEC came in. We were lucky that one of our neighbours is DEC so he has the pulling power to pull his workers straight away. That's why we need a paid service. We need more funding for fire units and paid fire service personnel. [...]

I know that down south and in Perth when there are bushfires, the ABC do 15 minute updates on the radio all the time. Does that happen here?

Not with fire. In cyclone season we get cyclone alerts all the time, but nothing for fires. Radio would be good, because not everyone in the socioeconomic conditions we have up here can afford this stuff. We've got low and extremely poor to extremely wealthy. [...]

What are your thoughts about the reliability of the communications systems for emergency? Lousy. What do you think goes wrong?

You have to ring 000 and it goes to Perth then to a call centre and it bounces around and finally gets to the authorities. You've got to spell Kununurra and people don't know where we are. Where are you calling from? It is not an easy name but people don't know. It seems there is a lack of that. Who do you ring? Do you ring DEC, FESA, 000, volunteer brigade? Not everyone knows who to call. I've got friends in different brigades. That's why, when there is a fire at my place, I ring certain people that I know that are vollies who can run out and give us a hand unofficially (Jane Maitland).

These issues impact upon communicative effectiveness and mean that neighbours more than ever have to take responsibility for each other. Jane's local knowledge allows her to use a variety of possible solutions to a fire emergency – in case of communication breakdown – and highlights the adaptability of small communities to react in a flexible manner in times of fire stress.

Residents also identify a communication gap when it comes to educating visitors and tourists, however.

We have information for people on the ground and we say: know who is in charge, know the fire situation, know where you need to be, know your exit – make sure you know how to get out of the fire. That's for people fighting the fires. There are some of those brochures aimed at tourists but they don't seem to get distributed very well. Our information is more for the [trained] volunteers and for other people, so when they are in the truck, apart from having contact details, we are keen to make sure they follow the rules. We don't want people being heroes and driving into the bush and getting burnt in the process (Wally Mears).

Some tourist resorts have responded with very sophisticated (GPS-tracker) technology, partly because of gaping holes in their communicative ecology that city-dwellers would find hard to understand. As Leroy James, who lives and works outside the town of Kununurra, notes:

There are no mobile phones. We are fighting for mobile phones. I don't really like them but my customers like them and in fire emergencies they would be very handy. There is no coverage here.

When you go to fight fires do you use radios or what?

Yes, two ways. [... but the] satellite phone goes off all the time. Our microwave phones go off all the time. [... Also, there's] the time taken to get the phone out, find a satellite – if you are in a gully, down below where the fire was a month ago – it didn't work at all. The guy that lit the fire accidentally called me three times but we got cut off. It was about 20 minutes before I realised what he was trying to tell me. By the time I got there the fire front was 1km long. [...] That night we contacted the guys on satellite phone – on our phone we called their satellite

phones where they were. Luckily they all had trackers so we knew where every individual was. We were reluctant to back burn because we knew there were 40 people there and we would have been lighting upwind of them, whereas the fire was burning into the wind, so we were between a rock and a hard place. We couldn't protect our own assets because it would probably have wiped out the 40 people. They were on the other side of the river but we knew the fire would jump the river. We knew how strong the fire was and the wind was picking up, so we had to make that judgement [call ...]

Can you tell us about the trackers?

They are very common these days, you can buy them for bugger all. They are a little satellite tracker. [...] Put a wrist band on, log it in, and we can go onto a satellite website – several companies do it – and we can see exactly where those people are in real time – within 10m of their location. If they are walking, you will see on your screen, that person walking. So we knew exactly where these people were, then we could talk on the phone – on Google Earth map, showing their location on a map. We could say ‘Around behind that ridge there is a great big sand bar where there is no growth [thus negligible fire risk], that would be a good place to spend the night. We are going to light a fire here so how about you guys get around there, and once you are there let us know and we'll light the fire’ (Leroy James).

Mobile phones are not the only everyday city technology missing from the Kimberley communicative ecology. As Colleen Elwell comments, ‘We do not have yet a full [radio] coverage of the whole Kimberley. You need towers everywhere and that is in process of happening. They are putting towers in lots of places where – we get radio coverage – but it is not complete yet and there are some blind spots’. Greg Isaacs notes that ‘We have two-ways, just short wave – maybe here to the butcher [nearby shop], or maybe a bit further is perfect, then it starts crackling. The nocturnal burns [the gaps between workers] are a bit bigger but the maximum is 100m intervals [...] We constantly assess the variables’.

An emergency worker raised a different issue, that ‘the different services don't have communication with each other’.

So you need the antenna on the car?

Yes, which I've got, but I can only talk to my people on that. I've got no access to other services [... there's also] the range of your antenna. I can talk to Lake Argyle which is about 70kms from here, and I can speak to the [my] office here and to the hospital, but if a policeman is standing next to me he'll be able to contact the police station, but the two of us won't be able to talk to each other, because we are all on different channels [... It would make a difference] if we could get a common emergency channel. Everybody is digital now, and it is safer, more confidential, so a common channel [...] Last year there was flooding and our fibre optic cable got cut. There goes your internet and satellite and cell phones. About a month ago we had the same thing happen – they were excavating in the street and cut the cable, so for three days there were no cell phones or landlines. We relied on radios and satellite phones. In an emergency what is the chance of that happening again? Without cell phones and mobile phones you have to rely on satellite phones which are unreliable, whereas if we could all go to a common emergency channel and talk on the radios to each other. We've got battery up on the hill for our transmitters but how long is the battery

going to last? Another avenue of communication as a backup – at the moment the backup is your cell phone and if that goes what is the backup? (Kate Marchant).

These comments indicate the acute awareness in remote areas of the fragility of the communicative ecology and the importance of the ‘back-up plan’ for every eventuality. They are also an indication of the challenges and frustrations felt in the face of communicative silos, where a neighbourhood wants to – and needs to – work together, but the priority has been placed on creating secure communication channels, rather than channels that intersect. These remote residents fully understand that the use of multiple channels and platforms of communication helps overcome communications breakdowns in times of emergency. Similarly, there have been calls for emergency services all over Australia to use multiple channels of communication when informing the public about emergencies (Elsworth et al., 2008).

The use of multiple communication channels and platforms to inform citizens about bushfire emergencies ensures a greater degree of coverage – in case of communication systems breakdowns or difficulties – as in the telephone alert system breakdown in Kelmscott-Roleystone, WA or a recent fire in Warrnambool, Victoria which took out the regional telephone exchange making telephone calls, mobiles, landlines, and the Internet non-operational (Johnson, 2012). The user-friendly FireWatch site will provide an additional information option for rural and remote Australians who rarely receive warnings or alerts and who often rely on visual sightings and on word of mouth to be informed about fires in their region. ‘The neighbour came over and said there is a fire, we’d better get our act together because it is going to hit us. No sooner than I turned around, I thought shit, here it comes’ (Richard Yardley).

Implications and conclusion

In the face of disasters such as bushfire, resilient communities are able to self-organise, learn from the past and improve the effectiveness of risk reduction for the future (United Nations, 2007). Geographical isolation and continuing problems with the reliability and reach of communication technologies in remote Australia has led to communications ‘work-arounds’ and ‘back-up plans’. This adaptive capacity of many remote citizens sees them use multiple channels (old and new) of communication in a patchwork manner in times of communication stress.

This paper has examined examples of effective communication in remote areas at the micro-geographical level, in terms of neighbours and individual households and properties. However, even over a period of decades and intensive technological development, communications with people outside the immediate environment may break down. This is as true in the case of an urgent transceiver call to the RFDS station in Meekatharra, as it is with a contemporary call between two people who work for different emergency response organisations within the Kununurra township. As has been indicated, respondents on the ground have a clear idea as to how these matters could be addressed and express some frustration at having to continually forge work-arounds to minimise the problems they encounter.

The FireWatch project is designed to make fire-related information more easily accessible to members of the public. This has positive implications for residents in rural and remote areas where communications and services are both more tenuous and more critical than is the case in Australian cities. Community consultations around the redevelopment of the FireWatch product take seriously the injunction that ‘viewing the citizenry as a powerful, self-

organizing, and collectively intelligent force, [able to use] information and communication technology can play a transformational role in crisis' (Palen et al., 2010: 1).

References

- Altheide, D.L., 1994, 'An ecology of communication: Toward a mapping of the effective environment', *Sociological Quarterly*, vol. 35, no. 4, pp. 665-83.
- Altheide, D.L., 1995, *An ecology of communication: Cultural formats of control*, New York, Transaction Books.
- Becker, J., McBride, S. and Paton, D., 2012, *Improving community resilience in the Hawke's Bay: a review of resilience research, and current public education, communication and resilience strategies*. GNS Science report, Lower Hutt.
[http://www.civildefence.govt.nz/memwebsite.nsf/Files/CDEM%20resilience%20fund/\\$file/2012_Hawkes_Bay_Resilience_Review.pdf](http://www.civildefence.govt.nz/memwebsite.nsf/Files/CDEM%20resilience%20fund/$file/2012_Hawkes_Bay_Resilience_Review.pdf)
- Buckle, P., Marsh, G. and Smale, S., 2001, 'Assessment of personal and community resilience and vulnerability'. *Emergency Management Australia Project*, 15/2000.
<http://www.radixonline.org/resources/assessment-of-personal-and-community-resilience.pdf>
- Brian J., 1986, *Radio services in regional and remote areas of Western Australia*, Perth, Australia, Office of Communications for the Communications Advisory Committee.
- Green, L., 1988, 'Television and Other Frills': *Public Demands of Broadcast Services in the Satellite Age*, Perth, Australia, Western Australian College of Advanced Education.
- Green, L., 1999, *Communications and the construction of community: consuming the remote commercial television service in Western Australia*, Perth, Australia, Murdoch University (unpublished PhD thesis).
- Hazelhurst, C., 1990, 'The dawn of the satellite era in Australia,' *Media Information Australia*, no. 58, pp. 9-22.
- Goot, M., 1995, Pluralism in the Polls: Australian Attitudes to Media Ownership, 1948-95', *Media International Australia*, no. 77, pp. 5-14.
- Hearn, G.N. and Foth, M., 2007, 'Communicative ecologies: Editorial preface'. *Electronic Journal of Communication*, vol. 17, nos. 1-2.
- Hiebert, D., 2002, 'Cosmopolitanism at the local level: the development of transnational neighbourhoods', in S. Vertovec and R. Cohen (eds), *Conceiving Cosmopolitanism: Theory, Context, and Practice*. Oxford UP: New York, pp. 209-23.
- Johnson, P., 2012, 'Australia unprepared for bushfire', *ABC News*, December 17
<http://www.abc.net.au/environment/articles/2012/12/17/3654075.htm>
- Kroodsma, D. E., Sánchez, J., Stemple, D. W., Goodwin, E., da Silva, M.L. and Vielliard, J.M., 1999, 'Sedentary life style of Neotropical Sedge Wrens promotes song imitation', *Animal Behaviour*, vol. 57, no. 4, pp. 855-63.
- Paton, D., 2007, 'Preparing for natural hazards: the role of community trust', *Disaster Prevention and Management*, vol. 16, no. 3, pp. 370-9.
- Palen, L., Anderson, K. M., Mark, G., Martin, J., Sicker, D., Palmer, M. and Grunwald, D., 2010, 'A vision for technology-mediated support for public participation & assistance in mass emergencies & disasters', *Proceedings of the 2010 ACM-BCS Visions of*

Computer Science Conference, 14-16 April, Edinburgh.
http://www.bcs.org/upload/pdf/ewic_vs10_s4paper2.pdf

Skelton, P., 1989, 'Australian satellites: policy options for the future'. *Institutional and policy framework, Australian satellites: policy options for the future*, Melbourne, CIRCIT, pp. 51-6.

Skelton, P. and Dean, T., 1990, 'A State Government Perspective on AUSSAT', *Media Information Australia*, no. 58, pp. 130-5.

Stanley, A., 1979, Oct 18, 'Commonwealth Parliamentary Debates', *House of Representatives Hansard* (ed.), Canberra, pp. 2225, 2229-8.

United Nations, 2007, *United Nations Office of Disaster Risk Reduction: Terminology* Brussels: UN. <http://www.unisdr.org/we/inform/terminology>