

## Imagining Rural Audiences in Remote Western Australia

By Lelia Green

### Abstract

In 1979, Australia's then-Communication Minister Tony Staley commented that the introduction of satellite communications to the bush would "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). In saying this, Staley imagined a marginalised and disadvantaged audience of "have-nots", paying for their isolation in terms of their mental distance from the networked communications of the core.

This paper uses ethnographic audience studies surveys and interviews (1986-9) to examine the validity of Staley's imaginations in terms of four communication technologies: the telephone, broadcast radio, 2-way radio and the satellite. The notion of a mental difference is highly problematic for the remote audience. Insofar as a perception of lack and of difference is accepted, it is taken to reflect the perspective and the product of the urban policy-maker.

Far from accepting the "distance" promulgated from the core, remote audiences see such statements as indicating an ignorance of the complexity and sophistication of communications in an environment where the stakes are higher and the options fewer. This is not to say that remote people were not keen to acquire satellite services – they were – it is to say that when they imagined such services it was in terms of equity and interconnections, rather than the "dispelling of distance".

**Keywords:** Media, rurality, radio, satellite broadcasting, Australia

## Introduction

The research upon which this paper is based was conducted against the exciting background of the introduction of satellite television broadcasting to remote Western Australia (WA). Remote WA audiences were among the last “western” populations on earth to receive live television broadcasts. Even though the government’s Remote Area Television Scheme had allowed towns of over a thousand residents in Australia’s outback to receive Australian Broadcasting Corporation (ABC) programs from the late 1970s onwards, this service was not available to many smaller communities, or to isolated homesteads. There were a number of such communities, as Philip Skelton, of the WA Government’s Office of Communications was to make clear in commentary upon the communities outside metropolitan Western Australia. “A population of 200 is not counted as a ‘town’ by the Bureau of Statistics, but there are still real live Australians out there in communities of such smaller size” (1989: 52). Skelton also provided a breakdown of the population distribution among country communities at around the time of the satellite’s introduction:

Non-metropolitan population distribution WA	
More than 25,000	Nil
20 – 25,000	3
10 – 20,000	3
5 – 10,000	7
1 – 5,000	40
500 – 1,000	47
200 – 500	47
<200	74

(Skelton 1989: 52)

*Table 1.*

Given the 168 communities with fewer than a thousand residents in WA, and the hundreds of people living on rural properties and remote homesteads, remote area residents outside the larger townships found it comparatively difficult to access reliable news and information. They were reliant upon unpredictable shortwave radio reception, two-way broadcast-receiver Royal Flying Doctor Service radio sets, and intermittent face to face contact with neighbours and people in towns who may be hours away; accessible only by gravel roads. Additionally, newspapers were flown into the region and could be only collected on occasional trips to the bigger centres, while mail was also held until it was collected. In 1986 this challenging communications environment was set to be revolutionised by the first AUSSAT-delivered, Remote Commercial Television Service (RCTS) broadcasts. The possible number of Western Australians who could receive (assuming satel-

lite dish connections) television services for the first time following the launch of AUSSAT lay between 100,000 (Regional Television WA 1984: 10) and 150,000 (WA Govt 1990: 4).

Even after the launch of the satellite, many remote area residents were locked out of audience participation. There were a number of issues which had to be addressed in addition to finding the cost of the satellite dish. The thought that the decision would be a straightforward one in these circumstances was often taken as a further sign of how city people were out of touch with the realities of country life:

F 25-39 Alison Graham H: [All interviewee names and identifying characteristics altered.] Not all of us have got three and a half thousand dollars to fritter away on a television dish, and a lot of the people up here are mere employees on stations ... 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, so the station might have a satellite dish and might wish to watch *New Parameters*, but they can't because it's outside their control. You just cannot get that through to people down south or in the city, I suppose. (Green 1998a: 54)

The research reported here which looked at the impact of the satellite services upon remote Western Australia was foreshadowed by the 1985 launch of AUSSAT, Australia's domestic satellite and the start of RCTS transmissions in 1986. AUSSAT also carried the television services of the national broadcaster (ABC), but this provided undifferentiated programming across city and country areas. For this reason, there was particular excitement throughout the remote northwest of Australia that Western Australia's regional commercial television service, Golden West Network (GWN), would be providing broadcasts more particularly tailored for non-metro television audiences. For some communities, such as Fitzroy Crossing, it made financial sense to install a downlink and a rebroadcast facility for the new AUSSAT services. For others, such as Sandstone, the community was so small that it was more economic to subsidise the purchase of dishes by multiple individual households, meaning that the structure of reception was via the installation and commissioning of household satellite dishes. Regardless of the delivery arrangements, the advent of AUSSAT services for remote Western Australia heralded the introduction of the domestic reception of live television broadcasts and of a satellite-delivered commercial broadcast culture.

## Methodology and Theoretical Framework

The fieldwork from which this paper is drawn was based upon the ethnographic methodology outlined in Morley's *Family Television* (1986) with one important difference: participants were interviewed separately, and not in couples, and included respondents from high school age into their 80s. The ethnographic approach (Green 2003) allows the interviewee to choose the location of the inter-

view: however, since interviews usually average an hour, the interviewee often chooses to invite the interviewer to the family home. This is the space in which the media practices being discussed occur, and where the media of interest are consumed. The invitation to enter the family home offers the opportunity to take field notes about the placement and use of communications technology. The interview format used in this research was the in-depth, semi-structured research interview (Green 1999). The interview format is non-prescriptive in that although the interviewer has a check list of subjects to be covered, the interviewee is allowed to determine the flow of the interview and to give different topics the attention that they deserve: according to the interviewee's priorities and less driven by those of the interviewer. Shaun Moores described this approach in his study of *Satellite television and everyday life* (1996):

Interviews were relaxed in manner and conversational in tone – lasting up to two hours – and whilst I kept a mental checklist of key topics to be covered, informants were allowed the space to pursue issues which they perceived as important or relevant. They were actively encouraged to speak from experience and to relate episodes from their everyday lives. My style of questioning was chiefly open-ended, designed to produce narrative responses rather than brief answers (1996: 34)

Prior to the interview phase of the research, the author had been a member of a two-person consulting team commissioned to survey remote WA before (1986) and after (1987) the introduction of satellite broadcasting using volunteer-response mail-back questionnaires. This consultancy, funded first by the WA Government's Office of Communications, and subsequently supplemented by the federal Department of Transport and Communications, was written up in Green (1988). The field research was carried out two years later, in 1989, while the author was on maternity leave and was part of a doctoral research programme. The interview phase was unfunded, apart from some part-contribution from a university research grant (Edith Cowan University) to the basic expenses of petrol and camp sites, and there was no provision for full transcribing of the 140 in-depth interviews. Interviews were tape recorded, however, and notes made of the subjects raised and issues addressed by interviewees. These notes were then analysed to identify themes arising.

After themes had been identified, the tapes were replayed and relevant portions were transcribed verbatim to create a partial word-for-word record of the interviewees' contributions. In this way the process had some parallels with Glaser and Strauss's (1967) Grounded Theory approach to the analysis of qualitative data. The themes arising from the research included: the Australian policy debate about communications provision for remote areas; isolation; the home; gender; family; technology adoption, and the construction of community. Although Silverstone, Hirsch and Morley's (1992: 15-31) "Domestication of Technology" framework had not been formulated at the time of the 1989 fieldwork, the research was interrogated and analysed using a Domestication of Technology approach.

The Domestication of Technology framework argues that there are four main elements to the means by which a technology is domesticated (Silverstone et al. 1992: 15-31): “appropriation” – when the technology is brought into the home; “incorporation” – when the technology is integrated temporally within the daily lives of the household members; “objectification” – when the technological object is given a physical space within the home; and “conversion” – when the products of using and consuming technology are converted into raw cultural materials which household members use in their social interactions with each other and with their wider community. This paper mainly concerns the “incorporation” and “conversion” phases of the domestication process.

As is implied by the reference in the conversion phase to the consumption of the technology, the domestication framework as used here also addresses Daniel Miller’s Theory of Consumption (1987: 178-217). This argues that when people voluntarily consume cultural products they are participating in a process which creates value in both directions. The technology and media delivering the cultural products is valued for its contribution to an individual’s daily life, while the individual can claim an enhanced social presence through converting these cultural products into material used for conversation and other interpersonal exchange. The implication of this process of consumption is, as Hearn et al. argue, that “social identity can be interpreted as a function of consumption” (1997: 106). The media products people consume become an important way in which they develop and express their social identity. This dynamic has implications for those people who are prevented from accessing large amounts of the cultural material circulating in the wider society, for example, by their residence in remote areas and a consequently reduced access to communications channels.

It should be noted here that the broader research project in 1989 (1998a) compared respondents from four remote communities: Broome (B); Fitzroy Crossing (FX); Sandstone (S); and isolated homesteads (H) (even though “homesteads” form an imagined community), with those from two regional communities, Gnowangerup (G) and Esperance (E). The aim was to address the impact of the RCTS upon all six communities. For Fitzroy Crossing, Sandstone and remote homesteads, the process by which commercial television was introduced was also the process through which they first experienced broadcast television of any kind: commercial or the non-commercial public service ABC programming. Before the satellite, there was no broadcast television in these places, with the exception of a few homesteads which were comparatively close to a terrestrial broadcast network. The five hypotheses informing the original research were found to be too blunt to capture or acknowledge the nuanced responses of the interviewees and were discarded in the original study in favour of teasing out the complexities of the reactions of remote area audiences to their improved communications options.

In place of the five original research hypotheses which informed the 150,000 word PhD thesis (1998a), the research question addressed here is: “How did the

domestication of satellite broadcasting by remote area audiences impact upon their subsequent consumption of communication technologies?” The communication technologies to be addressed explicitly in considering this research question are: the telephone; the 2-way (broadcaster/receiver) RFDS radio; broadcast radio and satellite television itself. Each of these will be considered as a mini-case study, and the paper ends with some conclusions about the implications of this research for the provision of broadband services to remote area communities.

### **Remote Area Communications Prior to the Introduction of Satellite Broadcasting**

Interestingly, the start of satellite broadcasting did not mark the introduction of televisual content into the remote household. Even prior to the commencement of remote commercial broadcasting, it had been established that about one-third of respondents already had a television set and video recorder and used this assemblage to play taped broadcast programmes including films, documentaries, records of major sporting events, dramas, soaps and educational broadcasting. As Delia Arnez (F 25-39 B) commented: “There’s always been a high proportion of video use here too [...] It’s probably decreased since the television stations, but you didn’t need TV to get videos – or TV reception, to be able to use videos. A lot of people had TVs and videos before TV came”.

Daily news programs, quizzes, light entertainment and other time-sensitive transient material tended not to be included in the recordings which were generally forwarded from friends and suppliers in the metropolitan core. The importance of the television and video-recorder set-up had been revealed in the before- (1986) and after- (1987) satellite broadcasting surveys of the remote towns of Broome, Fitzroy Crossing, Sandstone and homesteads. These volunteer-response mail-back questionnaires were used to gather some basic quantitative data about the impact of the satellite broadcasting services. The research was non-random and opportunistic, so not generalisable, but it was indicative, and a total of 805 responses were received over the two phases.

Community	October 1986		October 1987	
	No of respondents	Broadcast services	No of respondents	Broadcast services
Broome	202	(Intelsat) ABC TV ABC radio	199	(AUSSAT) ABC TV GWN TV ABC radio
Fitzroy Crossing	87	Variable shortwave radio reception	48	no change (introduction of services delayed)
Sandstone	24	Variable shortwave radio reception	16	Multiple purchase AUSSAT dishes: ABC TV GWN TV ABC radio
Homesteads	111	Various	118	Various
Total number of remote respondents	424		381	

*Table 2: Comparison of responses from remote populations 1986–1987 (from Green 1988: 13)*

This questionnaire research included some open ended questions which meant that respondents could make comments about the services available to them. Their contributions indicated that while a good television service was overdue (“What’s bloody TV mate?” [Green 1988: 30]), the lack of other communication technologies was judged to be more critical. The kinds of comments made included: “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). As these responses make clear, for many respondents the pressing issue was not broadcast television communications, but private two-way voice communications and a reliable radio service.

## Telephone

Unlike almost all other satellite services around the world, there were originally no plans for AUSSAT to provide a domestic telephone service. This was the case even though large numbers of people living in remote areas had no access to a

private phone service, and instead had to use the 2-way Royal Flying Doctor Service (RFDS) radio channel for voice communications. In the face of the lack of satellite-delivered telephony, Skelton (1989: 56) was moved to call 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”. The RFDS was semi-public communication since anyone within range who had the appropriate equipment could tune into the broadcast, and many people had such equipment available since it was the primary means of summoning help in the event of a medical emergency.

As Skelton intimated, whereas most satellite services were sponsored by the relevant national telecommunications provider, in Australia’s case AUSSAT had been set up in the face of opposition from the state monopoly provider, Telecom Australia. AUSSAT was planned and launched in the context of a global move towards service liberalisation, spearheaded by the break-up of American Telephone and Telegraph (AT&T, or “Ma Bell”), which had started with a government-sponsored anti-trust case filed in 1974, and which culminated in the company’s court-ordered fracture in 1984. This Regan-era development ran alongside Margaret Thatcher’s UK privatisation of British Telecom in the same year.

It was clear to Telecom Australia that the government’s decision to create a separate company for AUSSAT, rather than place the service under the control of the then-monopoly telecommunications carrier, could ultimately form the basis for competition. Given this, Telecom Australia had gained a commitment from the government that telephony would not be among the services initially provided by AUSSAT, apart from an extremely expensive satellite phone service unsuited to domestic use. Instead of satellite telephony, Telecom Australia was permitted to make good its assurances that its experimental telephony network using the proprietary Digital Radio Concentrator System (DRCS) technology would ultimately deliver a comprehensive and private phone service for the outback. This Rural and Remote Area Program (RRAP) telephone service rollout had been promised for some time, but had yet to be widely delivered when the satellite began transmitting.

Although the DRCS phone network eventually saw service between 1985-91, its introduction in parallel with the satellite launch meant that many outback residents were cynical about Telecom Australia’s commitment to the bush, seeing the eventual delivery of a private telephone network as too little, too late. Some even suggested that the concurrent rollouts were evidence that Telecom Australia was adopting a “just in time” attitude to delay service as long as possible: compatible with ensuring that AUSSAT would be precluded from offering telephony. There was considerable scepticism about whether rural telephone services were ultimately delivered by the most appropriate and cost-effective means available (Paltridge 1990).

As had been suspected by Telecom Australia, 1991 saw the introduction of competition in the Australian telecommunications market. The ownership of AUSSAT was bundled into the sale to Optus of a telecommunications carrier licence as the Australian government followed in the footsteps of the USA and UK towards market deregulation. Most of the comments and vignettes about the absence of a good telephone service that follow in this paper were offered during the 1989 field research and refer to times in the 1980s and earlier, before the introduction of the DRCS telephone network. As remote homesteader Felicity Rohrer noted (F 40-54, H), “It’s made a big difference, telephone. That was the most isolating thing, especially when your children were away at school or your parents are getting older and [...] I think you need [...] That was the worst thing, not having a phone.” (Cited in Green 2005)

Another homestead interviewee was to underline the ways in which private communications were to alter the business of the rural sector; allowing a renegotiation of relationships with the state’s economic and political capital, at the expense of the previously pivotal role of regional hubs:

M 40-54 Arthur Porchester H: We do a lot of our business direct with Perth so if we... Rather than try and use the locals, because, with the modern day telephones, you can pick up the phone and explain to someone in Perth just as easily as you can in Carnarvon. Cut out all the middle person, ordering, etc, so then it’s just a matter of really saying, “yes this is what we want - put it on such and such a transport company”, who we usually have an account with... So I guess this new modern, or efficient form of telephone has enabled us to become a lot closer to Perth... I mean, talking about the stock exchange, I mean, I quite often ring the stock exchange now because I can’t get it on ABC radio, not unless I hear that one national report, I ring the local report in Perth.

Revealing the ways in which new technologies lead to innovation and new possibilities, Porchester went on to say: “Of course the only thing wrong with that is it [... the Perth Stock Exchange] only lists the shares that are traded in Western Australia. It doesn’t do the total trading for each share that’s traded. We’re limited in what’s really going on”. These innovations altered the individual homestead’s psychological neighbourhood, allowing the development of closer ties with more distant locations at the possible expense of close communications with the immediate geographical neighbourhood.

Andrea Dixon, another homestead respondent, saw very different benefits to the phone, but also located these firmly in rural life:

F 40-54 Andrea Dixon H: [*Do you find that the telephone’s altered your life much at all?*]

Yes. Dramatically [...] 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.

In the historical moment represented by this research, through the introduction of a private phone service, a series of isolated people and communities finally felt themselves connected into the mainstream. Technology had been appropriated and

incorporated by remote area residents in a conscious, inter-related way which linked physical, geographical and technological communications channels to patterns of distribution and service provision, and then envisaged all of these elements as held together in an interconnected system. The technological system described here is envisaged by its new users as an improvised, pragmatic ensemble which paralleled communication systems available in larger regional and city communities, and which permitted greater autonomy for remote areas, together with a relationship between those areas and the core.

Within the context of a dispersed but interdependent community, such as operates between remote area residents, it was the privacy of the telephone which made a huge difference to some respondents' feeling connected in a way which helped protect them against feelings of isolation:

F 25-39 Alison Graham H: During the day it's not much different when my husband's here or when he isn't because I'm tied up with School [of the Air] and he could be out on the bore run anyway [checking water supplies for the livestock], but it's mostly in the evenings that I feel the loneliness or I want to talk to another adult and I can get on the phone and I can ring up someone and talk to them privately, whereas I could never do that on RFDS. I mean, you might hear all these voices and what have you, and you might have sort of business dealings through the RFDS but [...] you always had to be careful about what you said, whereas now I can ring my good friend at [station name] or wherever and you talk on the phone in station language if you like – “what have you been doing?” “Oh we've been fighting fires and having hassles” and you can say what hassles you're having, which you'd be reluctant to say on the RFDS ... because we've got everybody else listening in ... you just don't like everyone to know your own personal business.

The emphasis upon reduplicating the city-based norm of an individual, private, telephone service, and the lack of such a service in remote and regional areas until the start of satellite broadcasting, tended to obscure the creativity of different strategies to overcome communication barriers. One such was the small number of less-isolated areas served by “private” fence-wire telephones. These allowed “free” (no-cost) communication between those sharing the fence wire, but this branching system could also connect into the main network. Once again, the requirement to share the benefit of the communication option between neighbours in the area was secured at the cost of individual privacy; while the distances covered increased the risk of communications failure:

F 55+ Savannah Kingston H: We used a fence wire telephone system, connected to an operator in Meekatharra, and we were on a five-party line, which broke down fairly frequently, particularly if there was rain or thunderstorms, things like that. I mean a thunderstorm, often lightning would hit the wire and just fuse it, so you got no transmission. That was a hit and miss kind of thing. And also, there was no privacy of course, 'cos there were other people on the line.

Gillard et al. argue (1994: 21-2) that for some people the phone is a way of extending “private boundaries ... beyond their home to family and friends [who] were welcome to call any time”. The impression here is that the phone is used to “capture” a friend or household member and bring them into an elastic, psycho-

logical domain of private space. A “private” call has the effect of relocating the other psychologically within the domestic sphere; a “business” call psychologically propels a home-based individual from their domestic context into the public sphere. “A certain amount of pleasure or in some cases relief, is felt when a familiar voice is heard on the other end of the phone: ‘...like I feel a sense of relief, when I’ve heard mum’s voice, that feels, that’s odd to you, but when mum answers the phone, I think oh well she’s fine I’ve heard her voice’ (*Ava*)” (Gillard et al. 1994: 21-2, original italics). In contemporary societies, both imagined and psychological communities tend to rely upon mediated communications for their existence and pervasiveness.

For many isolated Western Australians, however, it was the 2-way Royal Flying Doctor Service (RFDS) radio transceivers that had for over a generation formed the foundation for daily communications beyond the homestead, with their local community, and which formed the backdrop against which the new satellite broadcasts were positioned.

## 2-Way Radio: RFDS

Alongside the incorporation of new technologies into the communication choices of remote area residents ran a keen appreciation of the changes that had resulted. This was evident in discussions about the start of the telephone service, and the consequent, almost total, demise of the RFDS radio community which allowed households within broadcast range to hear exchanges going on, rather like a 2-way citizens’ radio band.

It was this very capacity for ubiquitous monitoring of RFDS broadcasts that has caused such problems for Anne Latour when she tried to keep contact with her children after they left their close-knit station-bound family home for boarding school in Perth, for the years of their secondary education. One in particular had had a number of problems with home-sickness and settling into school life, but for a long time Anne had no idea how this child was faring:

F 40-54 Anne Latour H: [*Couldn’t the children have let you know how they were on the [RFDS] radio?*]

Yes, but with a great deal of difficulty. You see, when Bree started school, there were actually no telephone calls on the radio. They only came in towards the end of the radio’s existence. In the beginning, the only way they could get in contact with us was a telegram, and that did happen occasionally, you know, but [...] that wasn’t really the thing to use, you know, to say things like, how you feel [...] Also, the radio having certain times really didn’t fit with a boarding school.

*Right. So it must be quite difficult because station families are really very close, aren’t they?*

[...] One day we got mail [left the station to collect it, a four-to-five hour round trip] after weeks, and the first letter I opened [Bree] was thinking of committing suicide, the second one she was deliriously happy, and the third one – I’m not quite sure what that was – and I’d actually opened them, and she hadn’t dated them so I didn’t know whether she was still feeling like committing suicide or happy or you know, and it really becomes..... was rather difficult.

From this exchange it was clear that the RFDS broadcasts had never permitted the communication of real-time uninhibited intimate family exchange, as was enabled by a private telephone service. Even so, over the years, many interviewees had found the RFDS chat sessions a particularly pervasive substitute for company:

F 40-54 Fran Coleridge S: The phone will lead to isolation. There's an old lady down here, she's about 80, and she housekeeps for her brother and she's still wearing – her mother died 50 years ago – but she's still wearing her [mother's] clothes. She is so encapsulated in her life. And she used to have her [RFDS] transceiver. Any time, Myrtle would know anything that's going on. Anything. Birthday party at [local station], she'd know about it. She knew everything. Because she used to have the transceiver on all the time. And now there's hardly any people on, and she's a poor little old lonely lady that doesn't hear anything now. Can you see that? (Cited in Green 2005)

The consumption of the RFDS in these circumstances could act as a means of integrating the individual household within the public social exchange of the local homestead community. The RFDS communications service was used to make a difference in a crisis, such as a health emergency, or a bush fire, but it could also communicate the ongoing conversation of a neighbourhood. One cost of gaining the privacy of a telephone was that community participation in RFDS broadcasts gradually withered away.

F 40-54 Anne Latour H: [*When did you get telephone?*]  
I think it's two years now, and that was because it didn't exist up here before that. And yet, in another way, you were more out of touch on the telephone with your community than you were with the radio, which is quite funny but it's – you know, when the telephone goes off [hang up from a call] you're really alone, whereas when we had the radio, even if you couldn't pick up the people close by, there was always someone on the radio.

For people living in cities, that sense of an ongoing community exchange is often supplied by tuning into local radio broadcasts (especially call-back and listener response programmes); watching television; or using the internet. However, even in its role of connecting homesteads into a broadcast community, the RFDS was not always an effective technology. This could be especially true at times when it was most needed: when the weather was extreme.

F 40-54 Felicity Rohrer H: The atmospherics were so bad we couldn't hear half the people and they'd get sick of it and wouldn't come.  
*Right.* [Interviewer though this comment referred to shortwave radio] *and was reception good on RFDS?*  
Well, that's what I mean – it wasn't.  
*Oh. I see.*  
Oh, some times it used to be shocking – you couldn't get through. I often used to worry before we had telephones if we had an emergency. 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 [base station] 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. So you don't always get through.

Alongside the concerns about privacy and reception, which balanced the positives of having access to a neighbourhood on the radio, were comments about control and the hierarchy of status related to RFDS use. According to Greg McGinley, although there might be a large staff on an isolated station or rural property, there was generally only one person with unfettered access to the radio set; the manager's wife:

M 40-54 Greg McGinley H: 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. Only the manager or the owner, if the owner happened to live on a property, he, they had the communication thing with the radio they talk about. But the ordinary worker didn't. He had nothin' [...] 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. Most times the manager would, in the wet, would generally listen at seven o'clock [am, when there was a roll call of stations in the area] because he got all the rainfalls, then he knew what was what – but other than that he didn't spend a lot of time on the radio.

*What? Then he'd know which roads were passable?*

Oh, which roads are passable or, especially if you live down-river, you knew when a flood was coming.

Can the connections forged in a phone call be differentiated from those pertaining to a RFDS 7.00am roll call? Anderson (1991 [1983]) has written extensively about the imagined community and its contribution to nation building, and comments that “It is imagined because the members of even the smallest nation will never know most of their fellow members, meet them, or even hear of them, yet in the minds of each lives the image of their communion” (1991: 6). His view is that “all communities larger than primordial villages of face-to-face contact (and perhaps even these) are imagined” (Anderson 1991: 6). Yet what when the “primordial village” is not a village and is not face-to-face? It may be that where people need not “imagine” the members of their community, but instead know them in face-to-face encounters and regularly meet them in mediated communication, it becomes appropriate to talk about the invocation (the “calling up”) of a psychological community.

According to such an argument, a psychological community might be perpetuated through mediated communications which free a smallish group of people to engage in a community-building project regardless of the absolute limitations of geographical co-presence. The boundaries of RFDS radio reception created a number of radio-based communities around each RFDS base station. The daily managers' roll call, the background exchanges on the radio, and the lack of daily voice contact with people beyond the radio community all helped to construct a sense of community which did not rely upon imagination but upon the limited range of communication technologies available and upon a sense of inter-

dependent reliance at critical times, such as in the face of flood or fire. In domesticating the RFCS service, each homestead was also incorporated into an RFDS community and its residents learned how to look out for each other's interests even as they protected their own.

Each specific RFDS broadcast area was typically centred around a hub of medical, social, educational and economic services, such as located in a regional town like Meekatharra or Carnarvon. The psychological community of thirty years ago, created through RFDS exchanges, might have a number of parallels with a small online community today. The definition that Howard Rheingold gives for virtual communities is that these "are social aggregations that emerge from the Net when enough people carry on those public discussions long enough, with sufficient human feeling, to form webs of personal relationships in cyberspace" (2000: xx). In effect, community is brought into being through affective investment both in mediated and face-to-face contexts. People feel themselves connected through emotional links forged in communicative exchange, rather than simply through co-existence in physical place.

## **Broadcast Radio**

Moving from the potentially-domestic familiarity of the phone, and the psychological community built around the local RFDS service, the wider context of mass broadcast communications proved highly problematic for residents of remote Western Australia at the start of satellite broadcasting. As one Broome respondent commented in the questionnaire phase of the research (1987):

There's a deep need for programs that make people feel good about their region; and no need at all for programs (or a program philosophy) that makes people feel like country bumpkins, second-class citizens, or idiots for preferring simplicity and isolation over complexity, clutter and the cancer-inducing madness of the cities. We like it up here; not all Australians think the same; not all Australians need or want the same television and radio programs. Please help. (Green 1988: 27)

This quotation indicates a different "imagining of community": the perspective of a Broome resident conjuring up a policy maker or service provider intent upon homogenising the wider Western Australian audience, and resolutely determined to position remote area residents as "lesser", for their preferring not to be city-dwellers. A homestead respondent associated with the remote shire of Sandstone commented upon her perception that remote broadcasters focussed upon radio news and information programs at the expense of the music channels typical of city-based radio. This was interpreted as "an aside" about country people's ignorance and their over-arching need for information.

Rosemary Westlake complains that the ABC: (F 25-39 S) "Think that country people are idiots ... they think that all we ever want to listen to is information about what's happening in the world. We get very little music ... Virtually from six o'clock in the morning, all we have is talk-backs or interviews and I fail to see

– if the city people don't need it, why do the country people need it?" (cited in Green 2004). Here, the lack of entertaining radio content was deconstructed as an expression (by city-dwelling decision-makers) that country people are ignorant, if not actually thick. Such constructions were resisted by the remote audience, but they illustrate the importance of understanding the context into which broadcast communications are introduced.

Some young adult listeners could not wait for a "commercial radio" sound to reach towns and communities in remote areas. The loss was particularly acute when the would-be audience member had spent some years in the state capital, and keenly experienced the differences between the commercial radio stations in the city, and the ABC in Broome as a particular kind of loss and longing. With texture, pace, music and advertising, the commercial soundscape has a flavour of its own. Megan Garrard (F 18-24 B): *[Did you feel in any way cut off from your old life {in Perth}]* "Yeah, and also because of the radio. We only got the ABC radio [in Broome]. We didn't like that very much. It was good when we could go down to Perth for holidays and we'd tape 96FM [commercial] and bring it back up with us so we could listen to it." The ephemeral sound track of the city of Perth became this interviewee's abiding companion on the highways of rural and remote Western Australian communities.

There was widespread appreciation that the situation relating to radio broadcasting was overdue for change. Even while waiting for the commercial radio service to be on offer via the satellite, and at a time when audiences were restricted to the ABC regional radio offerings, the relative disadvantages of the outdated technology were clearly remembered:

F 40-54 Heather Bingham B: When we first came to the Kimberley, the only radio that was available was ABC shortwave and that was only – once the sun came up in the morning – that finished. So it was only available when the sun wasn't around. So you couldn't listen to a radio in the daytime.

*Oh. I wonder why that was?*

Because the atmosphere affected it. And that – it would have only been about five years ahead [of] the advent of television, that radio was available..... And even although there was radio during the darkness, this could go out with atmospheric as well, so it wasn't pleasant listening to short wave. Have you ever heard short wave? Beep, squeak, squeak. You tend not to listen to it a great deal.

Cedric Maplethorpe agreed (M 40-54 FX): "It was difficult ... I think I've destroyed two or three radios in my time. You'd used to be that wild – I'd throw them against the side of the wall." Some people, such as Stan Cathcart in Fitzroy Crossing, went to extreme lengths to try to set up systems which would deliver broadcast news and (the all-important) sport:

M 55+ Stan Cathcart FX I had seven radios here when I come to town. We used to have them out in the bush and got them all around the bloody joint and they're all tuned in. There's a dirty great big mark where Radio 2 was, and you'd switch over at bloody 25 past 7, 5 past 6 at night. They'd cut it out and you'd have to find what-saname, so you'd have two radios sitting there and tune the other one in. You just hit the buttons. But half the people up here never listen to Perth anyway.

In the early days – I’m getting back now – when I listened to the cricket in the old police station, we used to go down there and say to the coppers there, and we’d ring ‘em up and we had a dirty great big radio set-up down there, and find out the cricket results. Sit there drinking cans and listen to police reports coming in, and they’d come through to us, listening to what the results were. That’s in the early or late sixties, you know. It’s changed a bit you know, when you think of it.

There was an audience for sport in remote areas long before there was satellite television: F 40-54 Felicity Rohrer H “*Did they used to do that [talk sport] before you had the satellite dish?*” “Oh, I think so: because we used to get it on the radio.” There are some indications, in the lengths some audience members had gone to in order to secure an audible signal, that some technology consumption reflects the popularity of sports as a program genre, rather than determining it. One of the big advantages of consuming sports news and broadcasts, in a country as keen on sport as Australia is, is that sports programming provides ready access to cultural materials for social exchange. It is likely, for example, that a stranger or newcomer will welcome the opportunity to take part in a sports-based conversation, and a sporting discussion runs less of a risk of polarising a response than with an equivalent exchange around politics. There was some evidence that sports broadcast consumption was used in remote areas, as in some urban communities, to strengthen gendered community:

F <17 Naomi Rowe B: [*Do you think most girls and women are interested in sports programs?*]

Well I know at our school they are. All the schools I’ve been to, all the girls are really involved in sports.

*In watching them as well as playing them?*

Yep. Not all the girls, but most of the girls are.

*Would you say that they are more interested, as interested, less interested, than the boys are?*

Depends on what sport it is. If it’s footy, it’ll be mostly boys. But if it’s tennis or hockey or something like that that involves mainly girls, it’ll be mainly girls that’ll watch it then.

This conversion phase of using the raw materials of sports audience membership to participate in popular culture means that the enjoyment of taking part in the broadcast audience is offered added value in the construction and circulation of “social pleasures and meanings” (Turner 1996: 42) in conversation and exchange.

## Satellite Television

A number of respondents had a vision of the entire process of satellite broadcasting from the recording through to the delivery, with the domestic satellite dish itself providing the final link in a near-miraculous chain:

M 40-54 Carl Brunell FX: Then to see, say, the FA Cup Final in colour. I mean that was just – it was marvellous, but you take it for granted now. And then, satellite TV is the same. I mean, to see it instantaneously from Wembley [Stadium in the UK], I mean that was – I’m of a generation that I can remember, I mean I came here by sea when I first came as a kid. It took us five weeks. I mean, and there was a lot of water

between here and the UK and I've done the trip two or three times, I might say, see, and then to see it instantaneously by satellite, you know, I still can't get over that. That to me is a big deal, but for this generation it's no big deal. For me, it's still a big deal.

Arguably, it may be the physical experience of the five weeks in a boat crossing "a lot of water between here and the UK" that gave Carl Brunell his keen appreciation of distance, and of the technological feats required to deliver a colour picture live from Wembley.

Because of its importance to some community members, the consumption of sport was used by some respondents as a justification for "indulging" in power generation during the day. At the time of the research, many remote area residents were not on "town power", the state electricity grid, but used a diesel generator to make their own power to run electrical appliances. For these respondents, the use of electronic technology involved running a loud, smelly, hot, expensive machine, often in the heat of an Australian summer. Sometimes the extravagance implicated in powering up the generator was justified in terms of owners'/managers' responsibilities to the "staff", rather than in terms of personal pleasure:

F 40-54 Felicity Rohrer H: [*How about the men {working on the station}? Are they keen on sport?*]

Oh, yes, they look at the cricket, test, Sheffield Shield and the footy. They all like the footy. Usually on Saturday afternoon we run the motor for a while, while the footy's on – from 3 or quarter to 3 or whatever it is until 5 – because the staff like to look at it over at the cottage and everywhere. And the Olympics – they like to look at those things.

Such considerations were also relevant when it came to deciding which station to watch, GWN or the ABC. A single feed from a satellite could not be used to deliver ABC and GWN simultaneously, so the person with the power to decide the channel often expressed a responsibility to take into account the (supposed) viewing preferences of other people who may be viewing. This remains a constant difference between consuming television in the city, and in homestead viewing; even after the introduction of satellite broadcasts: F 40-54 Felicity Rohrer H "We don't look at things that we like looking at as much, because we've got to think of the staff. See, they all look at things, so we do look at the commercial channel probably more than I would if there was no one else looking, because they like the ... well, we do too – but they like the comedies and the films and things like that" (cited in Green 2004).

The reverse perspective, from one of the residential staff (of a different station) indicates that these good intentions do not necessarily have the desired effect. Instead, Kylie Molkner F 18-24 H commented that it "can be incredibly frustrating if you're right in the middle of something and the boss doesn't want to watch it and it just flips over and you've got no say". Given the unpredictability of the programming, Kylie tries not to invest too much in planning or hoping for what she would like to see: "We don't buy TV programmes [guides] because we know

what we're missing out on because the big house controls the black box and what they're watching is what you see" (Cited in Green 2004).

The issue of needing power supplies on top of the expensive investment in satellite technology underlies discussion of radio, television, and VCRs in many remote areas. Tried and true strategies were used to circumvent this problem:

F 40-54 Felicity Rohrer H: 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 [satellite] 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.

*So when you have the generator on you'd be recharging these batteries and then you'll use them during the day when the generator's off?*

Yes.

*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.

Throughout the interviews there was a strong awareness of the personal costs of accessing satellite television and the lack of choice in services compared with people in the city. In some ways, even as the satellite broadcasts introduced a link with the capital, they underlined the implications for country people of being located so far from the urban centre, remote from the core.

## Conclusion

A desire to “consume the city” became clear in some comments from country respondents. One such was by a homestead interviewee, Arthur Porchester (M 40-54 H). “As far as I'm concerned, you've got local radios that handle the local area and the last thing you need to have is the ABC that's going to be handling the local area as well..... Now, the contact that I love to have, mode of media, is to keep in contact with the city. So that I'm not just a country boy, if you like to call it.” Here the city axis is not only an emotional attachment; it is an indicator of “the significant other”. In further explanations concerning the inadequacies of a regional service, Arthur illustrated the empowering importance of understanding the city sufficiently, and having appropriate access to city information, to be able to take on the “others” at the essentially-city game of capital accumulation – and win:

M 40-54 Arthur Porchester H: I'm an avid stock exchange watcher, and at twenty past one every day on ABC [there] used to be a report on the stock exchange. That's no longer available to the regional listeners and to get that I have to use my dish and go through the Radio National and that's the only way I can get it [...] I think being, you know, producing an export commodity, I believe anything that's really happening politically, or to the value of the Australian dollar, affects us. Might not affect us right immediately but it certainly affects us in the long run, and I think it's very important.

Another benefit of satellite television was a mini-revolution in the daily experience of farming. Bart Cromack (M25-29 H) commented upon how useful it was that “every night you had an update – you could see the weather map for yourself. You could read what was going to happen the next day and also look at cyclone warnings”. But there was more: for Bart, improved communications helped ease the responsibilities of farming well. “It made life a whole lot more enjoyable, really. Instead of having to listen the radio every five minutes to find out what was going on, you could just go to the satellite and see”. The comments of Arthur Porchester and Bart Cromack underline the valuable economic and safety benefits of the satellite technology, particularly as these impacted upon rural life.

Ultimately, as well as making life easier, and more ordered, satellite broadcasting technologies introduced new ways of doing things, and new ways of seeing the world. One respondent commented on a change of outlook that she had noted within farming families:

F 18-24 Kylie Molkner H: The ones that are growing up, too, are starting to see their life as a business as well as a lifestyle. And I think that [a lifestyle] is what a lot of the old traditional farming families have been – you know, the old salt of the earth. And things – like, they’re televising video auctions of cattle now and this sort of thing. That’s bringing technological media into the farmhouse [...] that was never there before and it’s starting to become a lot more competitive and I think that’s where media has done that.

The Australian domestic satellite, AUSSAT’s initial subtitle, was commissioned to do more than “domesticate” remote Australia, and bring it into line with communities in regional and metropolitan areas. Even so, the translation of the public world of city politics and current affairs into the context of the remote household had the effect of unifying elements of domestic life throughout the nation, regardless of location, as households in remote areas incorporated the broadcast programs into the rhythms of their daily life and into the content of their conversation. The domesticated media product was then converted into public property in the process of community building.

Prompted by the introduction of satellite broadcasts, many remote area residents worked diligently to protect a distinct way of life and to assert the value of relating differently to broadcasting and its products. The introduction of television delivered directly by satellite became the trigger for a redefinition of what it is to be remote or regional, rather than a lessening of the experience of remote or regional life. In many senses the introduction of broadcast television heightened that sense of difference, sometimes by underlining the challenges of procuring the signal and the lack of choice when compared with equivalent broadcast audiences in the city.

In summary, when considering the research question which informs this paper: “How did the domestication of satellite broadcasting by remote area audiences impact upon their subsequent consumption of communication technologies?” it is clear that the processes by which media products had been circulated in RFDS

communities were harnessed and adopted to the new media technologies. The big differences introduced by radio and television meant that there was more cultural content to consume and convert into social currency, and that this cultural content was more likely to be shared with urban populations. At the same time, the advent of the private telephone offered a greater opportunity to connect with people beyond the range of the local RFDS base station. One impact of the changes in the communications environments is that there appears to have been some “romanticising” of the benefits of the RFDS two-way radio service: although many respondents were also clear about its disadvantages in challenging weather, when it might be most needed, and in terms of the lack of access for most people living on a station property.

When this research is considered in the light of Australia’s forthcoming rollout of the National Broadband Network (NBN), it is clear that the rationale for the broadband initiative runs into a significant problem. Although Australia’s Prime Minister Kevin Rudd couched the NBN initiative in terms of a unifying vision: “Nation building for the 21<sup>st</sup> century lies in building a new national broadband network” (Rudd, cited in IPA 2008) it instead runs the risk of re-inscribing the very communications divide that Tony Staley claimed in 1979 (2225, 2228-9) would be dispelled by the satellite. Given the extent of the Australian outback, it is almost impossible to consider cabling all communities and isolated homesteads. Even so, the proposed \$Aus43 billion dollar broadband service is built upon a fibre-to-the-home “superfast” 100 megabits per second internet service for 90% of the Australian population, coupled with satellite and wireless strategies to ensure a minimum 12 megabits per second service to the remaining 10% (DBCDE 2009).

There is a pattern of an increasing proportion of the population falling on the wrong side of the proposed digital divide. In March 2008 2% of Australia was to be excluded from the superfast broadband (Conroy 2008); but by April 2009 this proportion had risen to 10% (Conroy 2009). The difference indicates a change in exclusion from the full benefits of the NBN of “remote and very remote” Australians, who account for 2.3% of the entire population (ABS 2010), to include almost all Australians living in “outer regional Australia”.

Given that 498,168 people live in “remote” and “very remote” Australia; while 2,062,966 people live in “outer regional” Australia, the total of number of residents in very remote, remote and outer regional Australia totals 2,561,134: about 11.64% of the population of 22 million (ABS 2010). The indication here is that the 12mps service is going to be the default for almost every Australian not living in “a major city of Australia” or “inner regional Australia”. Policy makers are faced with a significant challenge in persuading Australians beyond the urban and regional cores that any equalisation of communication offered in the past 20 years has not been severely compromised by the relative disadvantages to be faced by rural audiences in the post NBN-future.

**Lelia Green** is Professor of Communications in the School of Communications and Arts at Edith Cowan University in Perth, Western Australia. She conducted the fieldwork upon which this research is based in the 1980s, and remains involved in remote area communications research. Lelia is a co-Chief Investigator with the Australian Research Council's Centre of Excellence for Creative Industries and Innovation, and is the author of *The Internet: An Introduction to New Media* (Berg: 2010). E-mail: [l.green@ecu.edu.au](mailto:l.green@ecu.edu.au).

## References

- ABS (2010). *3218.0 Regional Population Growth, Australia, 2008-9*, Canberra: Australian Bureau of Statistics, <http://www.abs.gov.au/ausstats/abs@.nsf/Products/3218.0~2008-09~Main+Features~Main+Features?OpenDocument#PARALINK3>
- Anderson, Benedict (1991 [1983]): *Imagined Communities*, Verso, London.
- Conroy, Stephen (2008): *Government Announces Panel of Experts to Assess National Broadband Network Proposals*, Media Release 11 March, [http://www.minister.dbcde.gov.au/media/media\\_releases/2008/government\\_announces\\_panel\\_of\\_experts\\_to\\_assess\\_national\\_broadband\\_network\\_proposals/](http://www.minister.dbcde.gov.au/media/media_releases/2008/government_announces_panel_of_experts_to_assess_national_broadband_network_proposals/)
- (2009): *Tasmania First to Receive Superfast Broadband*, Joint Media Release 8 April, [http://www.minister.dbcde.gov.au/media/media\\_releases/2009/023/](http://www.minister.dbcde.gov.au/media/media_releases/2009/023/)
- DBCDE (2009): *National Broadband Network: 21<sup>st</sup> Century Broadband*, Department of Broadband, Communications and the Digital Economy, [http://www.dbcde.gov.au/broadband/national\\_broadband\\_network](http://www.dbcde.gov.au/broadband/national_broadband_network)
- Gillard, Patricia, Amanda Bow & Karen Wale (1994): *A Major Line to the Outside World from the House: Defining the Significance of Telecommunications in Social Contexts*, RMIT, Melbourne.
- Glaser, Barney & Anselm Strauss (1967): *The Discovery of Grounded Theory: Strategies for Qualitative Research*, Aldine, Chicago.
- Green, Lelia (1988): *"Television and Other Frills": Public Demands of Broadcast Services in the Satellite Age*, WACAE & Media Information Australia, Perth.
- (1998): "(Not) Using the Remote Commercial Television Service to Dispel Distance in Rural and Remote Western Australia", *Media International Australia*, no. 88, August, 25–38.
- (1998a): *Communications and the Construction of Community: Consuming the Remote Commercial Television Service in Western Australia*, [unpublished PhD thesis] Murdoch, WA: Murdoch University.
- (1999): "Focusing upon Interview Methodologies", *Australian Journal of Communication*, 26:2, 35–46.
- (2003): "Attempting to Ground Ethnographic Theory and Practice", *Australian Journal of Communication*, 30:2, 133–145.
- (2004): "Wanting it Both Ways? Homogenisation or Differentiation – the Western Australian periphery talks back to the core about satellite broadcasting", *Off the Shelf or From the Ground up? ICTs and Cultural Marginalization, Homogenization and Hybridization: Refereed Conference Proceedings*, Cultural Attitudes towards Technology and Communication Conference (CATaC'04), Karlstad, Sweden, 27 June–1 July, <http://www.it.murdoch.edu.au/catac/>
- (2005): "Scanning the Satellite Signal in Remote Western Australia" [feature article], *M/C: A journal of Media and Culture*, 8:4, "Scan", <http://journal.media-culture.org.au/0508/01-green.php>
- Hearn, Gregory N., Tom Mandeville & David Anthony (1997): *The Communication Superhighway: Social and Economic Change in the Digital Age*, Allen & Unwin, Sydney.
- IPA (2008): *Submission on [sic] Senate Select Committee on the National Broadband Network, Infrastructure Partnerships Australia*, 19 August 2008, [http://www.aph.gov.au/senate/committee/broadband\\_ctte/submissions/sub011.pdf](http://www.aph.gov.au/senate/committee/broadband_ctte/submissions/sub011.pdf)
- Miller, Daniel (1987): "Towards a Theory of Consumption" (chapter 10), *Material Culture and Mass Consumption*, Basil Blackwell, Oxford, 178–217.

- Moore, Shaun (1996): *Satellite Television and Everyday Life: Articulating Technology*, Acamedia Research Monograph 18, University of Luton Press, UK.
- Paltridge, Sam (1990): "AUSSAT and remote area television", *Media Information Australia*, no. 58, November, AFTRS, Sydney, 136–146.
- Regional TV WA (1984): *Remote Commercial Television Service, Western Australia*, Regional Television WA Pty Ltd, Perth.
- Rheingold, Howard (1993/2000): *The Virtual Community: Homesteading on the Electronic Frontier*, Cambridge, MA: MIT Press. A version also at <http://www.rheingold.com/vc/>
- Silverstone, Roger, Eric Hirsch & David Morley (1992): "Information and Communication Technologies in the Moral Economy of the Household", Roger Silverstone & Eric Hirsch (eds):, *Consuming Technologies: Media and Information in Domestic Spaces*, London: Routledge, 15–31.
- Skelton, P. (1989): "Institutional and Policy Framework", *Australian Satellites: Policy Options for the Future*, CIRCIT, Melbourne, 51–56.
- Staley, T. (1979): *Commonwealth Parliamentary Debates*, House of Representatives Hansard, AGPS, Canberra, 18 October, 2225, 2228-9, quoted in Hazelhurst, C. 1990, "The Dawn of the Satellite Era", *Media Information Australia*, no. 58, November, AFTRS, Sydney, 9–22.
- Turner, Graeme (1996): *British Cultural Studies: an Introduction*, 2<sup>nd</sup> edn, Routledge, London.
- WA Govt. (1990): *Review of Remote Area Television Services*, Office of Communications, Perth, November.