DEMIC DEAL-BREAKERS AND THE STATISTICAL IMAGINARY OF THE DIGITAL DIVIDE

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Introduction

As Australian anthropologist Tim Rowse observes, the idiom of social exclusion discourse is statistics: "in the regime of truth in which social exclusion is meaningful, if you can't quantify something then it is difficult to believe in it" (Rowse 2010,157). In this paper I challenge current conceptions of digital inclusion and exclusion as they are conceived through statistical analysis. Drawing on the findings of a multi-year study of internet adoption in remote Aboriginal communities in central Australia, I demonstrate how particular aspects of remote Indigenous sociality, and some resulting practical considerations, are leading to a particular enactment of 'digital choices' (Dutton et al. 2007) that cannot be understood through statistics alone. These choices produce an 'all or nothing' scenario that manifests at the group level as a digital divide. Understanding how digital choices are unfolding in remote communities moves away from positioning digital exclusion as a symptom of social exclusion, and offers new ways of thinking through policy approaches to ICTs in remote Australia. The paper proposes a new theory – the 'demic deal-breaker' – to explain differential rates of broadband adoption across remote Aboriginal communities.

Researching the digital divide in remote Australia

The recently completed *Home Internet in Remote Communities* project[i] commenced as a digital divide research project, setting out to discover possible explanations for extremely low broadband adoption rates among Indigenous households in remote Australia (Rennie et al 2013). We used a mixed methods approach, including interviews with residents over four years, observation of a home computing trial in three small communities (outstation settlements), as well as case studies in nearby communities with different communications infrastructure arrangements (one with mobile coverage, the other with a shared ICT facility). We attempted to locate data sets that could assist us with understanding the extent of the divide, but found there is limited up-to-date data on internet adoption in remote communities.

Digital inclusion research has mostly been conducted through sample surveys, such as the World Internet Project (the Australian component of which is conducted by the Swinburne Institute for Social Research). These studies show that although the digital divide in Australia is narrowing, it is doing so increasingly slowly (Morsillo 2012; Ewing & Thomas 2011). However, sample surveys of internet use in Australia have bypassed remote Aboriginal communities due to the obstacles posed by lack of landlines (often used to administer surveys), as well as language and cultural barriers.

As a variety of policy attempts have been made to address the digital divide – from Universal Service Obligation to ICT centres and public wifi – any attempt to understand the nature of the divide must take into account the uneven infrastructure and assistance that has occurred. However, there is also no current data on ICT infrastructures in remote communities, making it impossible to provide an in-depth analysis of adoption in relation to different kinds of internet programs and services nationwide. Although ICT infrastructure was included in the Community Housing and Infrastructure Needs Survey (CHINS), the last CHINS collection occurred in 2006 and the survey has since been discontinued. A key report on internet in remote communities produced by the Australian Communications and Media Authority (the communications regulator) and published in 2008 (ACMA 2008) relied heavily on this data, as well as data from Telstra (the provider that holds the Universal Service Obligation), which is not publicly available.

Therefore, research on the digital divide in remote Australia has necessarily relied on the Census of Population and Housing[ii]. The Census asks the respondent whether the internet could be accessed at the dwelling, with the options being 'No internet connection; Yes, broadband connection including ADSL, Cable, Wireless and Satellite connections; Yes, dial-up connection including analog, modem and ISDN connections; and Other (include internet access through mobile phones etcetera)'. Although it should therefore be possible to tell from the Census data what kind of connection households were using at the time they took the survey, this particular information appears to be unreliable for households in remote communities. For instance, in Santa Teresa (an Indigenous community with mobile coverage), out of a total of 95 dwellings, four dwellings were identified as having an 'other' internet connection, 69 'no internet' while 29 houses were 'not stated'. There are a number of possible explanations for such gaps, including whether the question was adequately explained to the respondent (as the Census was administered face-to-face in remote communities), as well as confusion as to whether individual access to the internet via a mobile device is considered to belong to a dwelling or not.

At the aggregate level the Census data does show a significant digital divide. In the Northern Territory (where 27 per cent of the total population identify as being of Aboriginal and/or Torres Strait Islander origin), 31per cent of Indigenous people living in the capital city of Darwin reported that they did not have an internet connection at home during the 2011 census, compared with only 11 per cent of non-Indigenous people. The divide is greater in regional and remote areas. For the rest of the Northern Territory outside of Darwin, 75 per cent of Indigenous people did not have an internet connection at home, compared with only 15 per cent of non-Indigenous people. Aggregate figures, however, cannot tell us how internet adoption varies across communities. As discussed

below, we discovered uneven patterns of adoption between communities that shared a similar socio-economic profile.

The digital divide and social exclusion

Current thinking on the digital divide draws a link between digital exclusion and social exclusion (see Helsper 2012), achieved by comparing internet adoption and use with variations in socioeconomic status, including income and education level. The same framework of analysis has been applied to the digital divide in Australia. Indigenous people living in remote communities are undoubtedly the most disadvantaged group in Australia across a range of standard measures including education, health and workforce participation (Taylor 2006). They are also the least likely to have an internet connection at home, seemingly supporting the hypothesis that social exclusion and digital exclusion influence each other. In its analysis of the 2006 census data, the Australian Bureau of Statistics suggested that 'the lower rate of connectivity for Indigenous people might be attributed to a range of several socio-economic factors' (ABS 2007, 7). The above-mentioned report by the Australian Communications Media Authority (2008) observed that in addition to supply-side factors are compounded by 'demand-side factors, particularly the disadvantaged socioeconomic status of many residents in remote communities' (17).

The problem with this explanation is that its suggests that we can only solve the digital divide by solving other social problems first, which would lead us to abandon the concept of the digital divide as just another symptom of social exclusion. What if that assumption is not correct? The findings from the *Home Internet in Remote Communities* project suggests that the digital divide is not intractable and that there are concrete steps that can be taken to address it.

A tale of two communities

Towards the end of 2013 we undertook two trips to Ali Curung, a community of approximately 500 people, to interview residents on their internet use, assisted by two local women and one local man. We spoke to 85 people from 45 households, representing 58 per cent of Ali Curung's total Indigenous households. From this research we discovered that 89.5 per cent of people were using the internet or had used it at some point in the past. Almost 1 in 7 people that had used the internet were not using it at the time of the interview, demonstrating that many will fall in and out of internet connectivity.

Ali Curung is only 30 km from one of the outstations we worked with over the project's four year duration. Not a single house in Imangara (a population of approximately 100 people) had an internet connection when we commenced the project in 2010. As both communities have a similar socio-economic profile, affordability was not likely to be the reason for the difference, even though Imangara residents had indicated that 'money' was a reason they did not have internet connections at the start of the project. Some Imangara residents appeared to spend time in Ali Curung on occasion (one Imangara resident relocated to Ali Curung during the course of our research), suggesting that some level of knowledge transfer between the communities was likely. Ali Curung did

have a computer room, but it was not in use and hadn't been for some time. The most significant difference between the communities was that Ali Curung had mobile broadband coverage, whereas the only available internet in Imangara was satellite broadband. Significantly, no household in Ali Curung had satellite internet either, even though it was cheaper than mobile broadband due to government subsidies. Why did people prefer mobile broadband to the cheaper option of satellite broadband? More importantly, why did they prefer no broadband to satellite broadband? Our research in Imangara and the other two outstations was key to understanding what was occurring. We found that Indigenous households are generally only acquiring broadband services under certain conditions. Identifiable 'digital choices' were being informed by the practicalities and capacities of remote communities, and were compounded by social norms.

During the course of the research, three small communities were provided with satellite internet services for two years. At the conclusion of the trial period, we continued to monitor those households that chose to progress to the NBN Interim Satellite Scheme (over half of total households). Facilitating the application process for NBNCo Interim Satellite Service (ISS) services proved to be time intensive (see Crouch 2014). We concluded that households are unlikely to carry out the various steps independently given their limited access to telephones and knowledge of the processes, combined with the NBNCo and ISP staff's relatively uninformed perceptions of remote community circumstances.

Billing proved to be one of the biggest obstacles to satellite internet services. Despite the willingness of some community members to allocate a portion of household budgets to internet services, navigating and managing the ISP's billing mechanisms was difficult for most. About half the computer owners struggled over the first six months to maintain sufficient balances in their nominated bank accounts to support the monthly payments when they became due, resulting in temporary or permanent loss of internet access in some cases. For others, direct debits of large, unexpected amounts occurred if bills had been unpaid in previous months. Although on the surface such difficulties could be seen as a matter of affordability, common difficulties associated with managing bank balances is also known to relate to cultural factors whereby money is shared with a wide network of kin (Godinho & Singh 2013).

Residents' degree of mobility both within and outside the community also had implications for ICT provision in relation to access, ownership, management of billing and sustainability. For instance, residents moved houses within the community for a range of reasons, including available housing stock, maintenance issues in some houses, the cost of power, and cultural customs surrounding death. Such inter and intra community mobility had consequences for fixed infrastructure costs such as satellite dishes[iii].

Discussion
Tim Rowse has observed that, when used in policy contexts, statistics can create a 'regime of truth' that overrides the lived realities and dynamics of remote communities (Rowse, 2010: 157). Economist Amartya Sen makes a similar point in relation to social exclusion. Exclusion, he argues, needs to be understood in terms of the causal process,

which requires an understanding of the social context. Sen's capabilities approach is a useful framework for considering the digital divide as it asks what substantive freedoms people have given the constraints placed upon them, and their ability to enact the outcomes that they value (Nussbaum 2011). We found that particular deprivations can be difficult to understand when encountering individuals in remote communities when no background information is available. For instance, on an early visit we asked a man if he was living in the community and interested in having the internet in his house. He replied that he did not have a house and was living in the 'windbreak' – a makeshift shelter of branches and found objects in someone else's yard. Whether the man was permanently living an itinerant lifestyle – having fallen through the cracks of welfare and housing – or whether his circumstances were the result of the 'temporary mobility', changes the meaning, duration and consequences of that obvious hardship. Putting up with inadequate shelter because of a willing decision to visit relatives is different to not being able to afford accommodation, or being excluded from a public housing register. As Sen writes, 'The issue, ultimately, is what freedom does a person have – everything considered. It should come as no surprise that a person's deprivation can have diverse origins and may take disparate forms' (Sen 2000, 29). For Rowse, the appropriate unit of analysis is not comparison between statistically identifiable groups, but an understanding of how a people, in a particular place, are 'doing well or doing badly in ways that are specific to region and cultural heritage' (2010, 156). Although we were not able to conduct a nation-wide investigation of internet in remote communities, in conducting our qualitative research on the three outstations (complemented by two case study investigations in two larger towns), we were able to better understand what digital exclusion means in relation to the specific circumstances of remote community life and individual agency.

The digital divide, at the most basic level, fits within broader theories of innovation diffusion, in that it describes how technologies are communicated through networks, resulting in particular patterns of distribution. As Hilbert writes, the digital divide is an inevitable fact when seen as the diffusion of innovation:

> While the innovation spreads through the network and the diffusion curve unfolds, some are included and others excluded from the benefits of the new innovation. The result is an unavoidable divide. This divide is inevitable. It is the inescapable result of the fact that it takes a certain amount of time for innovations to spread through social networks with particular shapes and characteristics. (Hilbert 2011).

The inevitability of the divide exists in relation to the presence or absence of information, in that those without information about the technology are unable to acquire or use it. Once that information becomes available then presumably the divide begins to diminish. However, even with information some will choose not to adopt. In their study of mobile phone adoption in Indigenous communities, Brady and Dyson (2008) write:

> Contrasting the enthusiasm for mobile phones and other ICT deemed valuable by the community […] versus technologies which have been used only with reluctance or for the limited life of one-off projects convinces us that the Indigenous people are making informed choices about their ICT adoption.

Recognition of the factors behind these choices may well lead to better ICT investment and implementation decisions in the future (396).

In her study of UK data sets, Helsper (2008) noticed that particular groups were unexpectedly connected, defying predictors such as low socio-economic status: 'some individuals within socially disadvantaged groups are capable of overcoming barriers to digital engagement'. For instance, disadvantaged people from Afro-Caribbean origins tended to be more highly engaged than expected given their social disadvantages. Helsper's conclusion was that digital choices can be 'driven by cultural factors and the social context of individuals, which influence the development of positive or negative attitudes towards technologies' and that 'innovative and creative approaches' might be required to tackle attitudinal and cultural barriers' (10-11). The high rates of internet adoption in Ali Curung also fit within this category of the 'unexpectedly connected'.

Our research suggests that it is not necessarily attitudes to technologies that are influencing digital choices in remote Indigenous communities, but the conditions under which technologies are made accessible. The economic choice theory of characteristic filtering (also known as behavioural lexicographical choice theory) describes instances where choosers set targets for particular characteristics and eliminate products that don't meet those targets completely. In other words, the chooser decides: 'if x does not do y then I will not have anything at all', deciding that the missing characteristic is too important to substitute for something else; for the chooser the missing piece is the deal-breaker. The theory is useful for explaining some instances where choosers do not appear to be maximising their outcomes - 'violating the axioms of rationality' (Earl 1990) – choosing to discount seemingly adequate options. Although useful, the economic theory of characteristic filtering only considers individuals' decision-making; it does not explain when the cultural norms of a group determine why some technologies are adopted and others are not.

Two further concepts are useful for expanding on choice theory to explain how the 'dealbreaker' all-or-nothing decision can result in exclusion for an entire group. In the broadest sense, Indigenous communities, like all communities, are a knowledge group, whereby the groups shares its information, stories and culture, forming a particular set of social norms and influencing knowledge flows. Hartley and Potts (2014) call these 'we' groups demes (stemming from the Greek demos meaning polity). The 'demic' aspect of the 'dealbreaker' scenario describes the way in which the decision only makes sense when seen in relation to group actions, norms and knowledge-sharing systems. The 'demic' quality is thus important in understanding digital choices in remote Australia.

For some no obvious decision is made, rather an acceptance of the status quo based upon what others are doing or not doing. Those who might have little or no digital literacy (for instance, those residents that went to school prior to the introduction of computers in classrooms) are unlikely to receive the information required to consider internet adoption unless those they know share it with them. Therefore, if those who might be considered 'early adopters' choose not to purchase the internet (or choose only to use it in town, for instance), then other potential users do not get exposed to the

technology. Social networks thus affect the quality and flow of information and create community norms (shared ideas about the proper way to behave).

Conclusion

Shifting the discussion of digital exclusion to 'digital choices' restores some agency for those for whom the decision not to adopt is a practical choice, weighed up against a host of trade-offs and inconveniences. When group dynamics are taken into account, broadband adoption is not only a matter of individual choice but a socially-situated understanding of what will work and what will not, where the parameters are understood within that group in ways that might not be obvious to outsiders.

We found that households in remote communities are choosing not to acquire satellite broadband services, preferring pre-paid mobile broadband in areas where there is mobile coverage. The consumer preference for pre-paid billing, as well as practical difficulties associated with satellite internet connections, means that households are more likely to go without internet than enter into satellite internet contracts. Our findings suggest that policy objectives aimed at improving internet quality (such as faster speeds), although desirable for services and business in remote Australia, will not encourage residents of remote communities to adopt broadband. We question whether satellite internet – the Australian Government's response to internet access in very remote areas – can meet the needs of remote communities under current arrangements. However, changes to the way that satellite internet is sold and supported could make a significant difference.

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[ii] Information on the Census can be found at http://www.abs.gov.au/websitedbs/censushome.nsf/home/2011information?opendocument&navpos=310

[iii] The high level of mobility did not necessarily equate to a preference or requirement for mobile devices as PCs can be easier to manage in the domestic setting.