The experience of connectivity:

results from a survey of Australian Internet users

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Abstract

This article presents the findings from a survey of Australian Internet users (n=1172) conducted in 2007 investigating their overall experience of connectivity at home. Experience of connectivity is defined to mean how people use the Internet to achieve general outcomes of value to them in their everyday lives, and includes both the range of outcomes and the significance of the Internet in achieving them. The survey, thus, reports on the experience of a single behaviour – 'using the Internet' – rather than, as common in other research, multiple specific behaviours conducted while online. The article analyses the data collected to draw conclusions that provide greater depth of understanding of connectivity understood as phenomenon in and of itself. This article contributes important information about the experiences of Australian Internet users, about which there have been only a few and relatively superficial studies. It also provides an example of new approach to surveying Internet users which can lead to more direct conclusions about the value and extent of their uses of connectivity in their lives.

Keywords

Introduction

The research presented in this paper investigates the overall experience of connectivity for Australian Internet users, based on a survey conducted in 2007 (n=1172). This research not only provides an example of a different way of undertaking empirical research into the behaviour of Internet users, but also adds materially to the relatively limited data available on Australians and the Internet. There is very limited information concerning the mindset and understanding of Australians of their overall experience of Internet connectivity. Moreover, aside from these surveys, there is very little work being done in Australia currently which provides the basis for this kind of analysis. There is no equivalent of the Pew Internet Life Project and limited independent academic research is conducted on the basis of surveys. The data on Australians and Internet use tends to be highly specific to particular investigations, in which the Internet features primarily as a means to assess some deeper concern.

Connectivity is defined here to mean having and using an Internet connection at home. The focus on home use was appropriate to the survey's investigation of the personal experience of connectivity for respondents (as opposed to their possible uses in employment) and the relationship of the Internet to everyday life (see Silverstone and Haddon 1996). The experience of connectivity means the way people utilize the Internet to achieve a variety of outcomes in their everyday lives. This experience includes both the importance people place on connectivity for successful achievement of outcomes and also the range of outcomes which it influences. In essence, this research investigates a single behaviour – 'using the Internet' in terms of the

meaning of connectivity which people generate through that behaviour. My research does not construe Internet use from the perspective of the functions, features or applications which might or might not be used (a net-centric view), nor from the perspective that the Internet is a simple technological tool (e.g. Dholakia 2006 and, for a critique of instrumental analysis, Lee 2005). Instead it seeks to know how connectivity is seen from the standpoint of the Internet user's everyday life. It correlates the behaviour of Internet use with outcomes and expectations which are not themselves inherently concerned with the Internet. To put it another way, the research explores users' individual and collective experiences of being a node in a complex network of human-machine interactions that now infuses more and more of our everyday lives, drawing from Molz's argument that network behaviour involves 'electronic connections with embodied routines and emotional attachments' (2008, p.328).

The basis for my research is that there is no longer any significant value in analysing Internet activities outside of, or divorced from, the everyday lives of internet users. While much early research and thinking about the Internet tended to focus on the experience of a distinct realm of cyberspace, more recent research takes as its starting point the close interaction between mediated and unmediated human behaviour even though people using the Internet remain influenced in various ways by the different qualities of cyberspace that, at times, make it seem like another place. Thus, research which attempts to compare 'online' and 'offline' experiences (e.g. Stoneman 2008; Acar 2008) misses the point that, as Hardey (2008) makes clear, computer-mediated interactions and behaviours: they are deeply human engagements pursued variously at different times and in different ways but all part of one underlying endeavour. Similarly, my

research considers the Internet to be something far more than media. While much can be learned from various research projects comparing internet and other media use (see Kink & Hess 2008; also Kinnally *et al*. 2008), when we are considering the overall experience of connectivity, the Internet cannot be understood solely in those terms, as indicated by the work of Hargittai and Walejko (2008) in linking online social media and social connectedness.

The Experience of Connectivity survey attempts to resolve three primary problems with the majority of approaches to collecting empirical evidence about Internet use. First, many surveys ask for responses about an ever-expanding list of activities online and, in doing so, inevitably fail to capture all possible elements and often produce multi-dimensional domains for analysis because some elements overlap with others or are not equivalent categories, or – in the interests of reducing survey length – do not actually cover all possible varieties of activity (see ACMA 2008 for example). Second, most surveys are very concerned with the frequency of activities; yet, increasingly, Internet use involves multi-tasking (Keynon 2008) and is not understood by those participating in it as quantifiable in units of time. Third, most surveys presume a comparison between offline and online life (as evidenced by the interest in quantifying frequency) which might reflect the fact that people do indeed sometimes engage in life without computer mediated and sometimes do, but which does not capture the underlying *potential* of the Internet to be used by those connected to it across every aspects of life, at any time. This survey explores the gap between this potential and actual behaviour by avoiding the pursuit of excessive granularity in functions and frequencies, and concentrating instead on the generalities of the experience of connectivity.

Survey design and rationale

The survey was designed to focus on the experience of Internet connectivity at home, including all possible uses (personal, study and work), and by the person completing the survey (and not the household as a whole or other people) over a relatively long period of time (months, not weeks). This focus and temporal span was made explicit in the wording of each item, providing users with clear cognitive cues to guide responses. The key items elicited responses to the broad questions: 'What does the Internet help you to do?', 'With whom do you use the Internet?' and 'What if you didn't have access to the Internet?' Extensive demographic information was also obtained. While the survey also included items relating to activities and attitudes towards broadband, they are not reported here.

Item One asked respondents to consider twelve broad outcomes which they might seek to achieve in their everyday lives and to assign to each of them a measure of the importance of connectivity (very important; important; somewhat important, or not important) in achieving those outcomes:

'Using the Internet helps me to...:

stay in touch with people I know

find and interact with people with similar interests

make a statement about who I am

create an alternative world for myself

acquire directly things that I want and need

improve my knowledge

make good decisions

balance competing requirements for work, study and personal life

help other people

share information and ideas with others online

belong to a group of similar people

be part of a wider world than my local area'

In seeking respondents' views of the importance of connectivity, the survey deliberately

left open the question of how *exactly* each individual might use the Internet in pursuit of that end.

For example, while we might normatively imagine that, to achieve the outcome of improved

knowledge, an individual would search for and read information online, it is also the case that

improved knowledge might come from chatting with other people, studying via the Internet,

listening to streaming audio documentaries and so on. The survey carefully avoiding any attempt

to link the 12 outcomes with specific kinds of Internet activity (respondents were cued to

'consider all of the ways' they used the Internet), permitting each individual respondent to

interpret and respond to the items in their own way. Whatever the inconsistencies in response at

that level, the survey as a whole thereby consistently and rigorously focuses only on 'Internet

use' which therefore enables conclusions to be drawn about 'connectivity' as singular

experience. In other words, the survey was designed to investigate 'being connected' rather than what activities were performed via that connection.

The survey was also designed to inquire into the relationship between the experience of connectivity and the kinds of broadly understood social networks that people might form and participate in via the Internet. Since the exact nature of these networks was not the focus of the research, the survey simply elicited from respondents a basic judgment as to which of three 'network' categories they belonged:

'When I use the Internet at home I am doing things that usually involve:

many other people, whom I may or may not know well;
a small number of people, many of whom I know well;
only myself and /or people that I am living with at home.'

The third item, 'What if you did not have Internet access?' asked users to assign a numerical rating from 1 (least affected) to 6 (most affected) to six activities which would be affected if they did not have access at home for a month:

Communicating with people
Expressing myself

Acquiring products, information, and/or services I need

Organising my life

Sharing what I think and do with others

Being part of a group or groups that matter to me

This item was included primarily to check on the consistency with which users responded to both the presence and absence of the Internet, enabling a more comprehensive judgment of the overall experience of connectivity.

Demographic information collected by the survey included gender, age, relationship and family circumstances, employment and study situation, as well as connection type (broadband or dialup), length of time using the Internet, and self-perception of Internet expertise. The inclusion of categories not often used in surveys (such as whether or not employment involved Internet use, and expertise in Internet use) was designed to explore in more detail the relationships between the users' personal circumstances and the different kinds of experiences of connectivity which those circumstances might produce.

The design of Item One is novel. Recent Australian Internet use surveys, (such as ACMA 2008; Ewing *et al*. 2008) have focused primarily on what users are doing online, without inquiring into the meaning and significance of the overall state of connectivity; while useful, these surveys and the data they produce speak more to the superficial sense of what people do

online, rather than providing the basis for any attempt to understand empirically the nature,

consequence and meaning of being online as a critical component in everyday life. These

surveys, like many conducted in other countries, normally ask respondents for information about

the weekly frequency of specific online activities (such as emailing, chatting, and so on), and do

not investigate the overall experience (see, for example, the questions in the surveys by the Pew

Internet Life Project, http://www.pewinternet.org/,; or in *Oxford Internet Survey 2007 Report:*

The Internet in Britain (Dutton and Helsper 2007). Similarly, while there have been many

surveys of the extent to which people have Internet access, as part of research on the digital

divide (e.g. Viseu *et al*. 2006; Devins *et al*. 2008), this work tends to focus on technical measures

of access, rather than on the experience of being connected, or on the degree to which speed of

connection may or may not improve access (e.g., Kwak *et al*. 2004; Anderson 2008).

My research, instead, is concerned with the experience of users once they have access

and what the relationship is between that access and their capacity to achieve important life

outcomes. It draws on and extends the approach of Jung (2001; 2008). In developing and use

what he terms the Internet Connectedness Index, Jung is one of few scholars to be concerned

primarily with connectivity itself, but not just from the perspective of whether a person has

access or ability to use the Internet. Though Jung's work is based on media dependency theory

which presents its own conceptual problems and does not inform my research, I have taken from

Jung the concept of using 'goal scope' (Jung *et al*. 2001, p.516) as a means for understanding the

experience of connectivity.

Item Two, inquiring into the kind of social connections involved in Internet use, draws

on the extensive work on the Internet and social networking (e.g. Haythornthwaite 2005;

Gennaro and Dutton 2007; Tufeckni 2008; Hlebec *et al*. 2008). It does not attempt to investigate

deeply the 'social connectedness' of respondents. Instead it provides an additional and important

alternative kind of demographic information, based not on the inherent qualities or situation of

individual respondents, but on their sense of the connectedness which they enacted through the

Internet. It also provides some valuable confirmations of common-sense assumptions about the

experience of connectivity for more or less networked individuals.

Survey method

The survey was conducted via the web in 2007, after receiving clearance from the author's

Human Research Ethics Committee. Two Australian Internet service providers (ISPs) agreed to

distribute information about the survey and promote its completion via their monthly email

newsletters to clients and their websites. The survey was run at different times for each ISP, for

two weeks each in August and September respectively, with a single call for participation at the

start of that period. The scholarly origins and research purpose of the survey were made clear to

potential respondents to distinguish it from marketing and business research also conducted from

time to time by the ISPs. Respondents were encouraged to complete the survey via the chance to

win one of five AUD$100 credits from their next ISP bill. For confidentiality purposes, results

from each of the two ISPs were combined into a single data file and no conclusions are drawn

that differentiate one group from the other; 65% of respondents were drawn from the first ISP –

the larger of the two – and 35% from the second; approximately 15% of all Australian Internet users are connected via those two ISPs. No attempt was made to secure a representative sample of Australian Internet users and the respondents who completed the survey form a convenience sample.

There were 1358 attempts to complete the survey. From this number, 186 attempts were excluded from further data analysis since they contained either no data or so few responses to items as to suggest they were either errors, or possibly attempts to complete the survey multiple times to increase the small chance of obtaining the incentive. Therefore, at the completion of the survey, 1172 valid attempts at the survey had been made. Due to the length of the survey, there were a declining number of fully valid responses through to the end of the survey, but for the items reported here most of the 1172 valid attempts completed all of the items. Data were analysed primarily using simple statistical tools. The demographic information in the survey indicates that, generally speaking, the survey sample is not exactly representative of all Australian Internet users at that time. The survey was more heavily weighted towards males (respondents 67%: Australian population 50.2%), broadband users (74%: 52%), employed users (81%: 74%), and 55+ users (30%: 20%); there was slight underrepresentation of 18-24 year olds (10%: 15%) (population figures from ABS 2008).

Findings, Analysis and Discussion

Life outcomes and connectivity

As presented in Table 1, the 12 outcomes in Item 1 generated a wide variety of responses. The data presented shows both the dichotomy of responses between importance and unimportance; and the variations in the weighting of importance. In the following analysis, responses 'no importance' and 'no opinion' are combined as indicating no significance of the Internet in relation to the stated outcome.

Table 1: Frequency of responses to Item 1

[insert Table 1]

The first useful analysis of this data is to consider the rank order for the twelve items in terms of the judgment of *unimportance*. Many surveys focus only positive experiences of Internet activity and it is useful to see how, for the respondents in this survey, there was clear evidence that various outcomes are more or less uninfluenced by connectivity. Table Two shows the outcomes ranked from first to last based on the proportion of respondents who for each item indicated that the Internet was unimportant for achieving that outcome. This table shows how the experience of Internet connectivity ranges widely across the outcomes: for some, the Internet is important for most users; for others, only a much smaller – though still significant – proportion, find their connectivity has importance.

Table 2: Rank order of unimportance

[insert Table 2]

Turning to the assignment of importance, almost exactly the same order of *importance* emerges as for unimportance. The following table ranks outcomes in terms of the mean score for each outcome of all respondents indicating some importance of the Internet for that outcome, where very important is 3 and somewhat important is 1.

Table 3: Mean scores for outcomes in Item 1

[insert Table 3]

The point of comparison for these mean scores is the overall mean, 1.95, calculated by averaging the response to all outcomes, all scores. Four outcomes exceed this mean; the remaining fall below it, demonstrating their greater significance in the overall experience of connectivity. Furthermore, the rank order itself shows how Internet use is more significant in achieving some goals than others. With one significant exception, the rank of unimportance matches that of importance:

Table 4: Comparing rank orders

[insert Table 4]

The exception here, 'help other people' demonstrates that, while most people (73.5%) indicate the Internet has some importance in achieving this goal, most of them rank it as being only somewhat important (38.4%). In all other cases, outcomes which are highly ranked as important

are also ranked by very few people as unimportant or vice versa. Low-ranked important items take this position because of a small numbers of respondents indicating 'important' or 'very important' (See Table 1 above).

The components of the experience of connectivity

Because of the manner in which Internet activities, regardless of the outcome, all involve similar kinds of sub-behaviors, it is not surprising that there are no distinctive patterns of correlation. Almost all of the 12 elements correlate positively with one another to some extent, with $r < .5$ ($p < .05$), Therefore, at one level, *all* of them – even in the manner by which some choose *not* to consider them important – contribute to the experience of connectivity. However, although respondents' views on all twelve outcomes contribute materially to their overall experience of connectivity, a factor analysis shows that there are three components to the overall list of outcomes, each of which distinctively demonstrates how connectivity is experienced by users.

The factor analysis was conducted via a principal component analysis, using an equamax rotation method with Kaiser Normalisation. Sampling was adequate (Kaiser-Meyer-Olkin Measure = .805) and the outcome significant (Bartlett's test, chi-square 333.75; sig. = .000)). A cut-off of 0.5 was used to group factors into components (with one value of 0.467 included). The results achieved were:

Table 5: Factor analysis (Rotated Component Matrix) of Item 1

[insert Table 5]

These three components can be understood as follows. Component One involves high-loading values for sharing information and belonging to groups of similar people, along with slightly lower values (still >.500) for several other factors such as helping, finding others and belonging to a wider world; staying in touch (.467) is also included here. Component Two show high-loading values for a closely related cluster of outcomes: improving knowledge, acquiring things, making good decisions and balancing requirements; note the low values for all other factors but also the link apparent between knowledge improvement and decision making. Component Three shows the close relationship between making a statement about the world and creating an alternative world, both >.780. The distribution of factors into components was also tested using an oblique rotation and a similar pattern was found.

In overall terms, the factor analysis shows that in most cases individual outcomes group together more or less exclusively of one another, based on the fact that outcomes do not have high values (>.400) in more than one of the three components tabulated above. These components can be interpreted to mean that there are three broad themes to the experience of connectivity. First, people experience connectivity as a process of *collaboration, communication and combination* (component 1); connectivity can also be seen as *knowledge in action* (component 2); finally, connectivity can be experienced as *self-presentation and exploration* (component 3). Any one individual may be involved in one, two or all three of these ways of utilising the Internet to live their lives; but each one is, on the basis of this survey, a different kind of experience. While almost all respondents judged some outcomes involving

collaboration, communication and combination and *knowledge in action* to be important, the fact that the respondents split into a group of around 61% who did not use the Internet to achieve outcomes in *self-presentation and exploration* and 39% did suggests that this component may play a significant role in shaping differences in each individual's experience of connectivity, while almost all respondents engaged in online activities that fit with either the first or second component. People who ascribed some importance to self-presentation and exploration were more likely to find the Internet important for the other two kinds of experiences.

The overall extent and significance of connectivity

Each individual respondent provided a variable answer as to the importance of the twelve individual outcomes. However the aggregate score for each respondent across all twelve outcomes to which they responded positively also provides a significant finding, indicating the overall extent and significance of connectivity.[1] There are two aspects to this score generated by aggregating responses to all 12 distinct items. First the score demonstrates the *extent* of connectivity across all twelve outcomes, ranging from none (for no respondents) to all twelve (74 respondents). Second, the score demonstrates the *significance* of the individual's experience of connectivity with higher scores showing greater significance. The variation between scores shows measurable differences in the experience of connectivity between respondents, ranging from a score of zero (no importance in any outcome) to 36 (very important in all outcomes). The mean score of all respondents on this scale then provides a point of comparison for various groupings within the total survey response.

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1   A full Rasch analysis of this data will be presented in a separate paper.

Overall statistics for respondents demonstrate that all fall between these two hypothetical extremes.The mean score, for all 1172 respondents was 15.67 (standard error of mean of 0.18; median 15; mode 13). Scores were distributed from 1 to 36 as shown in the following histogram

Figure 1: Histogram of the raw aggregated scores for all outcomes, Item 1

[insert Figure 1]

The *extent* of the experience of connectivity (being the number of outcomes for which the Internet was important) correlated closely with the *significance* of that experience (the overall score), measured by the mean score for each group of respondents:

Table 6: respondents by number of outcomes rated important, with overall mean score

[insert Table 6]

Thus, the number of outcomes for which connectivity was important also influenced the variation for respondents from the overall mean score (15.67).

It is also possible to identify key differences in responses for various demographic sub-groups, based on a comparison of the mean of the aggregated scores for each respondent, in these

groups. Most respondents completed the full demographic information which is summarized here:

Table 7: Demographic Information

[Insert table 7]

What, then, were the demographic correlations which might shed light on the kind of people who score more highly on the index of connectivity? Firstly, there were no statistically significant correlations between gender and whether or not respondents were employed. Nor did the specific mix of Internet use at home (work, study or personal use) generate any meaningful differences in the mean scores for different groups of respondents. However, higher mean scores were found for the following dichotomous categories, revealing the way that people in these categories have a more extensive and significant experience of connectivity ($p < 0.05$).

Table 8: Significant demographic differences (various categories)

[Insert Table 8]

The survey also gathered information from respondents about their perceived expertise in using the Internet, and higher mean scores for connectivity were recorded at significant levels for the three most populated categories ($p < 0.05$)

Table 9: Significant demographic differences (expertise)

[Insert Table 9]

The survey provided evidence that the length of time of Internet use also influenced the extent and importance of the experience of Internet connectivity. While there were no significant differences for the most experienced users (prior to 1996) or the most recent (after 2001), there was a consistent difference between the mean scores for users by year of first use of the Internet $(p < 0.01)$:

Table 10: Significant demographic differences (time using Internet)

[Insert Table 10]

Similarly, the mean score declined for all users the shorter time they had access to broadband, with the exception that the earliest broadband adopters (before 2001) Internet adopters had a slightly lower mean:

Table 11: Significant demographic differences (Time using broadband)

[Insert Table 11]

The survey produced less clear results concerning age. Using the standard age groupings for Australian statistics the only consistent statistically significant differences were found for the 18-24 year old grouping which, compared to all others, scored higher on the index of connectivity ($p < 0.01$):

Table 12: Significant demographic differences (Age)

[Insert Table 12]

While not all results are statistically significant, the data suggest that the experience of connectivity was most important and extensive for those aged below 35; least important and extensive for people aged between 45 and 64, but became somewhat more so for those aged over 65.

Demographic analysis also enrich our understanding of the experience of connectivity by considering differences in the mean scores for each of the 12 outcomes used in Item 1. The following table shows the variations for each outcome where there was a significant difference for various demographic categories, the results were ($p < 0.05$; in most cases < 0.01):

Table 13: Specific outcome differences, by demographic category

[Insert Table 13]

Crucially, for people aged 18-24, 7 outcomes were significantly more important, with create an alternative world for myself (.434); share information and ideas (.351) being particularly noteworthy. Internet competence correlated with higher mean scores for 9 of 12 outcomes. Notably, the outcomes which are least important, and which form a distinct component – make a statement; and create an alternative world – are the least likely to show significant differences. Further, most of the variations by relationship, and parental situation were found in the outcomes which group in the component *communication, collaboration and combination* suggesting a strong relationship between personal social relationships and the experience of connectivity.

Connectivity and social relationships

In Item 2, respondents nominated one of three broad patterns of Internet use, based on the kind of interpersonal relations that their Internet activities involved. The responses were:

Table 14: Respondents grouped by social relationships online (Item 2)

[Insert Table 14]

This information enables a different kind of demographic analysis based on the self-identified difference in how Internet use connects the respondent with other people. Taking each group and comparing the mean score for respondents across all outcomes in Item 1, the following significant differences were found (p<0.01 in all cases)

Table 15: Differences in connectivity for different social relationship groupings

[Insert Table 15]

The data show that, as we would expect, there are significant differences in the extent and importance of connectivity for those who have greater numbers of online interactions with other people. The experience of connectivity is, therefore, strongly moderated by the human, as well as other, forms of connection to be had online.

The degree and character of users' online social networking also provides a way of analysing the 12 specific outcomes. There were significant differences between those whose experience of the Internet involves either broad or small online social networking and those whose experience was more and self-centred for the following six outcomes, all of which were shown to form a single component of the experience of connectivity; the other two components do not show significant differences.

Table 16: Differences in specific outcomes for different social relationship groupings

[Insert Table 16]

Notably, between the two groups involving online social connections, the only category in which the small/known respondents valued connectivity more highly was for 'staying in touch with people I know'. This finding once again demonstrates the need to understand social connectedness as an interdependent relationship with Internet use rather than as a consequence of it. Similarly, there were no significant differences between groups for the outcomes such as acquiring knowledge which, normatively, are less directly associated with social relations.

These differences demonstrate that, for people who do not have an online social network, their overall lower scores on the index of connectivity are explained primarily by the lack of value attached extensive online networking. The lower overall mean score for those in smaller, known social networks is explained by the comparative lack of importance attached to outcomes around finding, belonging and sharing that are intuitively more important to broader and looser online social networkers. Thus the experience of connectivity can be understood as being part of the wider life circumstances of individuals varying according to their social connectedness. The tendency to form a looser social network involving Internet interactions with a variety of people is closely correlated to the extent and significance of connectivity. Of course, neither can be said to cause the other: they operate in concert, reinforcing each other.

The loss of connectivity

Survey respondents were asked in Item 3 to provide a rating of the degree to which they would be affected by the *loss* of connectivity. This item provides a useful complement to the main focus on the positive experience of connectivity, while noting that some respondents chose to score the items uniquely (1 through 6) in ordinal rank whereas others used a variety of responses (some 6s, some 1s for example). However, analysis of both the total responses and those which only used ordinal ranking shows no significant differences in overall pattern of results. The six possible 'losses' which respondents could rank were aligned with the twelve outcomes for Item 1.

Table 17: Mean scores of responses to what would people miss most, Item 3

[Insert Table 17]

Given the importance of staying in touch in the experience of connectivity, it is not surprising that respondents were most likely to miss 'communicating with other people'; similarly, the strength accorded to improving knowledge and acquiring things in Item 1 is consistent with the significant emphasis in this Item on missing 'acquiring products, information, and/or services I need'.

Of equal interest is the way that different social network groups provide significantly different responses (p <.03, in most cases <.01):

Table 18: Differences in what would be missed by social relationship grouping

[Insert Table 18]

The data reveal that people in online social networks of either character are more likely to miss communicating, belonging, sharing, expressing; people with a home or self focus are more likely than other respondents to miss acquiring things and information. Organising is the only 'absence' which is not missed significantly by any of the groups. Communicating was more likely to be missed within the online social networking groups by those in smaller and better known networks; belonging was significantly more likely to be missed by those in broader networks. A

factor analysis confirmed that acquiring and organising form one component of what might be missed; all other items group together.

Limitations and further research

The limitations of the research presented here are, firstly, that the sample – while relatively large for a convenience sample – was not entirely representative of Australian Internet users; in particular, given that significant differences in the experience of connectivity are associated with access to broadband, computer expertise and time using the Internet, the fact that the survey polled a relatively small number of people in some categories means some caution must be exercised in extrapolating from the data. Second, the survey may be too focused on 'home Internet use' (traditionally used to discriminate between personal use and work or educational use) which may imply a fixed connection in one place. Recent and significant shifts in Internet use towards mobile devices in numerous locations would possibly limit the applicability of key findings to that small sub-set of Internet users who are ubiquitously connected.

However, despite these limitations, the research shows a clear direction for further study and analysis. First of all, and most importantly, additional and more diverse surveys need to be conducted to both test the unidimensionality of the 12 outcomes which analyse the specific single behaviour of 'using the Internet'. Additional surveys conducted at regular intervals, with representative samples, would provide the opportunity to compare the growth in the importance and extent of connectivity in people's lives. Second, further work needs to be conducted on

constructing meaningful measures of the variety and intensity of specific Internet behaviours that can be correlated with the scores on the overall experience of connectivity item to discern whether there are certain ways of using the Internet which more closely align with achieving one goal or another, or whether indeed the experience of connectivity is entirely independent of underlying behaviours.

Summary and Conclusions

Several insights into the overall experience of connectivity emerge from my research. First, the experience of connectivity is shown to be associated far more strongly with some specific life outcomes than others, demonstrating how the Internet is more or less valuable across a spectrum of activities which are all theoretically made easier by the Internet, but which are not in practice equally valued. In particular, there is a strong emphasis for almost all users on experiencing connectivity through communications and acquiring knowledge and goods/services; some users, around one quarter, explore and present themselves through statements and alternative worlds, and these outcomes distinguish them as highly connected individuals. Second, the close correlation of some outcomes with others demonstrates three underlying components to the experience of connectivity, which I term collaboration, communication and combination; knowledge in action; and self-presentation and exploration Regardless of the extent to which one or all components are important, each of the three serves to explain how connectivity is understood by users; moreover, the most connected respondents are distinguished by the much greater involvement in using the Internet for making statements about themselves and exploring alternative worlds. Third, there are discernable differences in the degree to which people

experience connectivity as important for their lives depending on demographics: in particular, younger users, and those without relationships and children, and those with Internet expertise are more deeply and extensively connected. Fourth, and similarly, the experience of connectivity varies significantly depending on the kind of social relationships that are involved: broader, and looser online social ties correlate strongly with more extensive and significant experiences of connectivity across many outcomes; that said people with smaller and tighter social networks online emphasize one outcome – staying in touch with people I know –more. Finally, by considering what respondents believe would be most affected if they *lost* connectivity, the research confirms the positive findings for what is important, but also reveals that people whose primary orientation is social relationships within the home (and not online) are much more likely to miss the ability to acquire knowledge and products, and not the chance to reach out to create connections.

Two broader issues emerge in conclusion. First within the sample, there were clear differences in the degree and range of connectivity in Internet users, ranging from those for whom it was barely relevant except for specific purposes to those who integrate Internet use into achieving all of their goals. This insight should give researchers pause for thought about too easily assuming that all Internet users are relatively homogenous. Even when performing the same specific behaviours (for example twittering), different users will approach this activity from different foundations, depending on the particular experience of connectivity within which this specific activity occurs. Second, despite the current fascination with shared and co-created content (Deuze 2007; Bruns & Bahnisch 2009), there is evidence from my research to show that

this activity is not experienced, or reported, in ways that explicitly speak to the self-identifying and collaborative practices which are normally asserted to be primary motivations for such co-creation. The result suggest that only a proportion of people understand and experience connectivity in terms of social media, collaborative content and so on; this result confirms direct surveys of such activity (e.g. Ewing *et al*. 2008). It also provides a rationale: that, unless a life goal can be achieved through such social media engagement, the affordances of such media will not themselves motivate people to take them up. That said, the fact that so many people, over many years, have understood the Internet in terms of collaborative communications suggests that the difference Web 2.0 makes is rather less in terms of a new phase of Internet development, but a restatement of some of the Internet's most basic and attractive affordances (an argument explored in Allen 2009) which have always been central to the experience of connectivity. Finally, the research demonstrates conclusively that an individual's experience of connectivity is deeply entwined with the kind of social networking behaviour they activate via the Internet: but it is not possible to say which might cause the other. Rather, being connected in human terms is, still, a vital component of experiencing oneself as a node in an informational network: the duality of being human and being informational (what Floridi 2007 termed an 'inforg') remains central to investigating the Internet in society not just theoretically, but also empirically.

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