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# The information aged: A qualitative study of older adults' use of information and communications technology

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## Abstract

Although it is widely perceived that older adults should be making more use of information and communications technology (ICT), academic studies in this area have been limited, especially from a sociological perspective. We still know little, for example, about the reasons and motivations underlying older adults' adoption or nonadoption of ICTs. We also know little about the nature of this use and the support that older adults draw upon regarding ICTs. Finally, and perhaps most importantly, we know little about the outcomes and "life-fit" of older adults' (non)use of ICTs. Drawing upon in-depth interview data from 35 individuals aged over 60 years (collected as part of a larger research project looking at adults' use of ICT), this article addresses these issues of older adults' adoption, nonadoption, and use of ICT. From this analysis, the article highlights the key issue of many older adults' ambivalence toward ICT in light of the limited relevance of new technologies to their day-to-day lives. The article concludes by considering what steps can be taken to facilitate wider use of ICT by older adults.

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## 1. Introduction

The ability to use information and communications technology (ICT) is now assumed by most commentators to be a prerequisite to living in the "information age." Received wisdom has it that ICT is transforming all aspects of society—from civic involvement to the arts, employment to leisure. Thus, as the UK government has been prone to proclaim, using information technology is nothing less than "the indispensable grammar of modern life" for all adults (Wills, 1999). This civic and societal imperative has given rise to prevailing political efforts around the world to ensure that every citizen has a basic level of "universal access" to information technologies and that disparities are reduced between those segments of society that are making use of ICT and those segments that are not. In particular, social

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commentators are beginning to highlight the fact that the *information* society is also an *ageing* society (Bernard & Phillips, 2000), and that encouraging older adults' use of ICT is an essential prerequisite to overcoming the "digital divide."<sup>1</sup> This has led, in turn, to the recent discursive portrayal of "silver surfers", a popular but nebulous description of the confident and competent older ICT user (Brayfield, 2000; Cody, Dunn, Hoppin, & Wendt, 1999; Copps, 2000).

The "silver surfer" discourse reinforces the notion that older adults stand to benefit from ICTs in various ways, and that the ability to make use of new technology is a ready means through which to "bridge the generation gap" (Burdick, 2001). Previous research has identified a host of benefits of ICT for older adults that can be characterised as leading to either social and self-understanding benefits (e.g., increased access to current affairs and health information), interaction benefits (e.g., increased connectivity and social support), or task-orientated goals (e.g., ICT-assisted work, travel, shopping, and financial management) (Adler, 1996; Cody et al., 1999; Loges & Jung, 2001; White et al., 1999; White & Weatherall, 2000). Empirical studies have also found use of the Internet to lead older adults to lower perceived life stress (e.g., Wright, 2000). In essence then, the use of ICTs is seen as a ready means for older adults to "reconnect or improve their connection with the outside world" (White et al., 1999, p. 362) and "enjoy a higher quality of life" (Irizarry & Downing, 1997, p. 161).

Yet, the *potential* of ICTs for empowerment of older adults has been tempered by a succession of reports that technology is proving *in practice* to be an activity that many older adults are excluded from (e.g., Hanley, 2002; Madden & Savage, 2000; Teo, 2001). Indeed, our own survey data from a randomised sample of 1001 adults confirm the findings of previous studies that age is *highly* significant in whether an individual can access and make use of ICTs such as the computer and the Internet (see Selwyn, Gorard, Furlong, & Madden, 2003). These survey data also confirm that using a computer is not only a minority activity amongst older adults but also highly stratified activity by gender, marital status, educational background, and age (i.e., between the "61–70 years" and "71 years and over" age groups). There is therefore growing concern that older adults must engage with new technologies or be further disadvantaged in contemporary society. As Green and McAdams (2003, p. 8) reason:

to lag in the use of technology is to remain behind a veil of limited knowledge and opportunities. In combination, education and access to information can ameliorate the impact of . . .disadvantage.

However, throughout this body of existing research and the surrounding debate on aging and ICT, there are a number of unanswered questions regarding older adults' use of ICT. We know little about the reasons and motivations underlying older adults' adoption or nonadoption of ICTs. We know little about the nature of this use and the support that older adults draw upon when making use of ICTs. Finally, and perhaps most importantly, we know little about the outcomes of older adults' (non)use of ICTs. As Loges and Jung (2001, p. 536) reason, "underlying much of this research is a presumption that seniors who do not gain Internet access are deprived of a resource for enhancing their lives, a resources to which others (e.g., other seniors or younger people) have access." In short, despite the increasing political, academic, and practitioner interest in older adults and technology, we know little

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<sup>1</sup> In this article, "older adults" are defined as those over the age of 60.

of the realities of how older adults use, and do not use, ICTs in their everyday lives. From this background, these questions now form the basis for the remainder of this article.

## 2. Research methods

The article is based on the data collected from a research project examining overall patterns of ICT use and nonuse by adults.<sup>2</sup> The project focused on four local authorities in the west of England and South Wales. These research areas were chosen in terms of representativeness for population density, economic activity, and levels of educational attainment. A systematic stratified sample (in terms of age and gender) of 1001 adults over the age of 21 living in three electoral ward in each of four different authorities was selected for home-based structured interviews. An analysis of these survey data with regard to older adults' use of ICT is reported by Selwyn et al. (2003). The present article draws upon the second stage of the data collection that involved in-depth, semistructured interviews with 100 respondents covered by the initial survey. This subsample of 100 interviewees was selected to include equivalent numbers of individuals with high/low levels of technology use and high/low educational background; with additional criteria of selection including socioeconomic status, geography (urban/rural), ethnicity, and age. Given our interest in older adults' use of ICT, this article concentrates on data from the interviews conducted with individuals over the age of 60 ( $n = 35$ ).

As can be seen in Table 1, given that the interview sample of 100 respondents was selected to force equivalent numbers of individuals with high/low levels of technology use and high/low educational background, our interview subsample of older adults is obviously overrepresentative of computer users and individuals who are more educated. As a consequence, the interview subsample also overrepresents individuals who are male and/or married in relation to the random survey sample. The ages of the interview sample ranged from 61 to 84 years (mean age = 68 years, S.D. = 7.01) as compared with the ages of the survey sample ranging from 61 to 96 years (mean age = 72 years, S.D. = 7.96).

The interviews focused on individuals' educational and employment "careers" as well as their technological histories and present technological and educational activities. Interviews lasted between 45 minutes and 2 hours and covered a range of areas of open-ended questions relating to ICT use, i.e., respondent's computer (non)use in the home, respondent's computer (non)use in the workplace if applicable, respondent's (non)use of community computer resources, the prevalence and use of computers in respondents' social networks, and respondents' general views on technology and society. Examples of such questions are highlighted in bold throughout the interview excerpts presented in this article. In this way, the interviews approached a life-history or "life-story" method in that they focused on eliciting individual's experiences through a chronological autobiography of education, work, and technology use (see Dhunpath, 2000). Obviously, people's use of technology is a complex and "messy" affair and is inevitably less straightforward in practice than many of the elicited narratives from our interviews (McAdams, 1998). Nevertheless, these interview data do allow for a more detailed

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Table 1

Demographic characteristics of survey and interview subsamples of adults over the age of 60 years, % (*n*)

	Interview subsample of adults over 60 years ( <i>n</i> = 35)	Survey subsample sample of adults over 60 years ( <i>n</i> = 352)
Male	63 (22)	44 (154)
Female	37 (13)	56 (198)
Single/widowed	20 (7)	48 (163)
Married/living with partner	80 (28)	52 (178)
Left school at 16 or before	60 (21)	79 (279)
Continued with education within one year of leaving school	40 (14)	21 (73)
Long term illness/disability	40 (14)	37 (129)
No long-term illness/disability	60 (21)	63 (217)
Frequent user of ICT	34 (12)	14 (50)
Moderate user of ICT	20 (7)	8 (29)
Nonuser of ICT	46 (16)	78 (273)

Categories of ICT user (i.e., “frequent,” “moderate,” “non-,” and “never”) were calculated from survey data relating to self-reported frequency of ICT use in domestic, work, and community locations.

investigation of the factors influencing older adults’ use (and nonuse) of ICT. The article now goes onto discuss the research questions via an analysis of these interview data.

The constant comparison technique was used to analyse all the interview data generated (Glaser & Strauss, 1967). For the purposes of this article, all the interview data were grouped by age (i.e., from adults over the age of 60) and analysed separately. This initially involved one analyst (the author) reading all the interview transcripts to gain an overall sense of the data. All the interview data were then read again and “open-coded” to produce an initial code list until, in the opinion of the researcher, analysis had reached theoretical saturation. Although some *in vivo* codes were adapted (i.e., directly using the language of the participant), the majority were researcher-led and analytic (Strauss, 1987). From this basis, the data were then selectively coded in terms of categories identified with the initial code list directly related to the aims of the study. Analysis of the interview data elicited a variety of influences and factors underlying respondents’ (non)use of ICT. These can be broadly grouped into preexisting aspects of adoption and nonadoption of computers as well as the (ir)relevance to individuals’ everyday lives. These themes are discussed in detail in the following sections.

### 2.1. Exploring older adults’ adoption of ICT

When talking to computer users a range of motivations and reasons to begin using ICT were offered. Reflecting the “information society” imperative discussed above, some interviewees explained their adoption of ICT simply in terms of feeling that they wanted to “keep up” with computerised technology—thus reflecting the self-referential nature of much computer use apparent in the interviews (i.e., deciding to use a computer for its own sake):

#### **When did you think of getting a computer in the house?**

I retired more or less when I was sixty in 1992. I didn’t even dream of it as I had enough to do. Later this house came up and with some help I was doing that and I wasn’t particularly interested in getting

[a computer]. Then I had a heart attack and bypass and in that last two and a half years I've decided *I need to get with it*. I don't know why. I think not knowing something about it worries you! [Now] I set up email and I use the web for various things but I've had no immediate goal. I decided after a year that I might as well get one so I got one. [Male, 70]

Other interviewees expanded upon this sense of keeping up-to-date in terms of the perceived usefulness of ICT for their near future—especially in terms of maintaining independence in the face of the reduced financial security and reduced mobility associated with old age. As one retired woman reasoned, “we're going to need it, and I can imagine myself at ninety, setting my house in order, doing my shopping, sending emails all over the place. It makes you independent: that's what attracts me” [Female, 64]. Thus, for some of our younger interviewees beginning to use a computer was a way of coping with preparation for old age, as this recently retired man explained: “Old age is coming on and I'm looking at the time when perhaps we may be immobile but we can still do our shopping on the Internet [and] I can get access over the Internet to my bank account” [Male, 61].

Yet these decisions to acquire and use a computer were not always decisions taken on the part of individuals and/or their partners. In particular, we found many examples throughout our interviews of encouragement, or coercion from children who wanted their parents to make use of computers. As this man, who had one of his daughter's laptop computers “lent” to him on a long-term basis explained:

It's [my daughter] actually, who keeps saying to me, “Dad, you know, here's my computer, *use it*, otherwise you'll lose it.” And my eldest daughter. . . she also encourages me, because when I go over to their offices, she'll say, “sit down at the computer, Dad, have a go—do this letter for me.” [Male, 69]

Other interviewees had begun to use computers for specific projects and activities and others had simply continued using a computer after retiring as they had previously done in work and at home. Yet, this theme of encouragement from younger members of the family rather than peers was recurrent. Whereas many interviewees spoke of using a computer as being an unusual activity within their social networks, only rarely (and generally with more affluent interviewees) was having a computer seen as being part of people's cultural and social expectations of being “retired.” As this retired women explains, the computer was an expected status symbol within her and her husband's social network:

#### **How did you end up having the computer in the house?**

Because my brother had one and my husband is going to be president of Rotary. And of course, all these Rotarians, because they're ex-bank managers and that's how they spend their day—faffing around on these things—have set themselves up in their retirement in their spare bedroom, sending each other these little billet-douches [sic], you see, and my husband wanted to have the same sort of situation for him. [Female, 65]

In terms of *how* older adults had adopted and acquired computers, it was noticeable that few of our interviewees had independently purchased a new computer. Wallace (2002) distinguishes between the different economic spheres that household activities such as acquiring a computer can be conducted in, for example, the formal/market economy, the social economy, or the informal economy. From our interviews, it was clear that older adults tended to rely on a variety of informal and social strategies—most notably, the informal acquisition of computers through the extended family, usually in the form of

children and younger relations who were also using computers. As this man explains, his entry into using computers at home came via a combination of having to use a computer in his job in a milk pasteurising plant, support from his then schoolboy son, learning from books and, eventually, from an old computer acquired from a friend:

**How did you learn to use the computer for controlling the milk pasteurising system. . .**

I read the book. Just read a book.

**What, the manual that came with it or. . .?**

The manual that came with it to start with and then I bought a couple of computer books and picked it up from that. My lad showed me a lot because he was—I was at home with him then.

**That's when he was still at school?**

No, he'd left school then. He was into computers when he was at school, from about thirteen, but we hadn't got one at home then. He got an old one, a very old one, from somebody we know and he sort of showed me one or two bits from that. And then he bought one himself, when he started work. Then I got this one. [Male, 63]

Family and friends are therefore very important elements in many of our interviewees' adoption of ICT. Throughout the interviews there were examples of computers being acquired through "unpaid community exchanges" where computers, software, and peripherals were exchanged on an unpaid basis within the extended family and social or neighbourhood networks" (Williams & Windebank, 2000). This non-market-orientated acquisition of goods was a recurring theme through our interviews with all age groups, but in the case of older adults, it was predominantly initiated and executed by grown-up children:

My stepson arrived for my birthday in August and he said, "I've brought you a present" and he put it on the floor there and it was his old computer, fully set up. Well, he plugged it in and set it up, put it on the Internet, everything was done for me. And I would have never gone into that, if I hadn't been pushed by Steven, that's my wife's older son. And he just pushed me willy-nilly into the whole Internet fiasco. [Male, 61]

Interestingly, the prevalence of mutual aid and unpaid exchange was not confined to those respondents on lower incomes or in lower socioeconomic groups, with some of our more affluent respondents also acquiring and using computers via nonmarket means. That said there were noticeable differences in the nature of these exchanges, as our Rotarian's wife again explains:

My brother had one. His son, my nephew, Timothy, is in the business. Timothy's company sets up these systems all over the world. And so Timothy is always dealing with the next wave of improved computer. And my brother had one, courtesy of Timothy, when they upgraded. And then Timothy, bought his father a garden planner thing that would draw out your garden, only to find that the system which my brother had wasn't quite compatible with this package. So Timothy, of course, said well that's alright, and set Laurence up [with a better computer] and my husband, had already spoken to my brother saying "look, can have we have the next one in line when Timothy's you know, his company's sorting out." So that's how we got one. I think most people like us get them like that. Our friends who have them, none of them have bought them; they've retired and it's been part of the

retirement package. They come away with the one that was in their office. Because as they've gone, [the computer's] come with them. And then the incoming chappie, whosoever, he wants the latest all-singing, all-dancing affair, so that seems to be how it works. [Female, 65]

Interestingly, as Williams and Windebank (2000, pp. 134–135) observe, such examples of self-help are “not a strategy pursued solely out of economic necessity or simply because the household has the tools to do it. Instead, over half of all self-help is undertaken by people themselves out of preference.” Thus, many of our interviewees had benefited from this constant process of the recycling and informal redistribution of computers from the workplace to the family and from family member to family member. Given the rapid “hi-tech” obsolescence of computers, older adults were often at the end of such recycling chains, with knowledgeable younger family members “setting them up” and “sorting them out”.

## 2.2. *Exploring older adults' nonadoption of ICT*

As we had found that the majority of older adults from our survey data (77%) were not computer users at the time of study, understanding why individuals were *not* making use of ICT is also an integral part of understanding older adults' engagement with the information age. In line with the findings of previous research, some of our non-computer-using interviewees offered practical reasons of cost, health, and lack of exposure in the workplace as underlying their inability to now use a computer. For example:

It depends on the old finances, actually, to be honest. Because I'm not always going to be working or able to work, probably—touch wood I'll go on for a few years yet, you never know. [Male, 69]

I have an affliction. Though I can do lots of things with my hand, I have never been able to operate a keyboard. I can never operate a typewriter, I was never able to play the piano. Yet, I can do plenty of other things. [Male, 84]

I wasn't [at work] long enough to go on further with [computers]. [Female, 71]

Whilst these practical “barriers” are undoubtedly important, a significant amount of our interviewees were simply not interested in using a computer—especially when compared with other pastimes and activities that they were participating in.

We have got so many friends now who talk about the Internet and you sort of feel a bit out of touch but I don't know that I would have the use for it, I've got neighbours who use it to find hotels but I can do most things over the phone.

**So you haven't heard of anything someone has done and thought “wow!”?**

No. . . I like gardening, painting and decorating, anything creative. I can't think of anything else apart from going on holiday which is my biggest hobby! [Female, 61]

This equating of computer use as a hobby akin to gardening as opposed to a valuable life-tool is an interesting reflection of many older adults' perceptions of the computer as something to be used for its

own sake rather than as a genuinely useful tool. This feeling of a lack of usefulness was also echoed by other nonusing interviewees:

I suppose I'm up in the library three or four days a week really one way and another, looking up things. I use the libraries a lot. If not to take books out, to look things up. Using the Internet is the modern thing to do [but] I have never actually asked them to find something on the Internet.

**Have you ever been tempted to have a go?**

No, I have just no interest. I go to friends' homes and they say, "come and look at this" and they fiddle about a bit and it seems to take ages to get onto it and then they press the wrong key or something and it's not engaged. No, I'm afraid I haven't. I've got no need, no intention or need to use it. If I was working I probably would. [Male, 72]

No, no, no, no need. If you could type, you don't need one. There's a library if you want to find things out; there's a telephone if you want to ask somebody a question or you can write a nice letter as quick as a flash... It's a myth; people have been sold a myth to say they can't live without one. They could live extremely well. [Female, 65]

It is worth exploring this recurrent reason of "not being interested" or "having no need" to use computers in more detail. One interpretation of these data could be that these individuals have a lack of interest in new technologies due to a lack of skills, knowledge, or opportunities to use technology. However, for many of our respondents this lack of interest and subsequent nonuse was not for a lack of "computer rich" social networks or opportunities to use computers if they wished:

You can always scan the papers for cheap flights. I don't think there is any way we can apply it to our lives to make such a vast difference. We are happy as we are. My sons would say "why don't you get a computer?." My son was a computer advisor for schools in the city and was producing educational software in tandem with being a schoolteacher and then he was bought out for millions of pounds. [He] despairs of us but we are not interested. [Male, 67]

We also found that many nonusing interviewees could be classed as "lapsed users" (11 of the 16 nonusers); i.e., they had previously used a computer at earlier times in their life but now were not doing so. Thus, a lack of familiarity or skills was not a problem—rather a genuine lack of interest in computers once having finished work. As this man who has retired from a career where he used laptop computers and email on a daily basis to schedule and coordinate a team of maintenance engineers explains:

**Have you got a computer now?**

No.

**What about your children and grandchildren, do they have one?**

Yes they have actually. My oldest one has a computer; my daughter's husband had the lot. It can be quite handy. They've got the printer, the lot. My other grandson has his own computer and so does my son. My youngest daughter, the office she is working in got rid of all their computers and she got one for my grandson.

**You've never thought of getting one?**

No.



### **Why's that?**

I don't know, I'm not really interested. I have other hobbies, books... I walk quite a lot, go on holiday, go on a ski holiday—spend the kid's inheritance! Coach holidays. We see things in the paper and ring up and book. [Male, 69]

Throughout our interviews, we found many individuals who had used computers at work but now chose to make no use of them. In our interviews with individuals in higher socioeconomic groups, there were some interviewees who had retired from executive or managerial jobs where the computer was ostensibly an integral part of their work but now did not see it as having any role to play in their retirement:

Yes, of course, like any manager I had a computer on my desk, of course, because I needed to know factually what was happening on the financial situation on a day-to-day basis. And my secretary had a word-processor, of course, so consequently all these things had to be tied in. And I had a computer connected to the whole financial system in the organisation, on my desk,

### **Did you first learn how to use computers at work?**

Yes but... I haven't got one now. My son, who is in the industry, he always says to me, "I'll drop one off to you, Dad, one of these days," but—I don't know what I'd use it for at the moment. It's not something that terribly interests me, you know. I've got other interests that take my time. If I was somebody who liked sitting at a computer and playing with it, then that would be fine, I'd get one, but it doesn't interest me very much. In fact, I'd rather not, because there's all sorts of things that could get in the way of my other activities. [Male, 72]

Individuals' nonuse of computers was therefore often based on a complex and interdependent on a series of events over time. Some interviewees had attempted to adopt but then given up and moved onto other activities, as can be seen in the example of this woman who bought a computer toward the end of her career to work from home:

### **How did you end up with a computer?**

Well, it seemed the sensible thing to do, like... it makes your life easier and I was thinking, well I could spend more time with my daughter or my mother... It would save time for my real life. [Working on the computer] wasn't a part of what I consider my real life. You know, my real life started when I went home, so, maybe that was why, I never took [the computer] seriously enough. That's why I was a complete idiot at it... I think I got it for the wrong reason. And my concentration level at that time was sorely under par, I had too many other things going on in my life at the time so, again, I didn't really stick at it. I didn't see it through, which is very unlike me, I've got to tell you.

### **What jobs was it that you wanted to do on the computer?**

I wanted to put all my client base on it and obviously wanted to—a lot of my job was investments, accounting, book-keeping—I could have put all that on the computer.

### **So then what actually happened?**

I don't know what it was, it was probably an electrical fault or a problem with the computer so I gave it up. I doubt I've used a computer since then... I don't think it's an age thing either, I think it's mental, I don't want to be bothered with it. I haven't, I've had no great ambitions. And I think I obviously didn't treat it with the respect it deserved. [Female, 62]

### 2.3. Exploring older adults' use of ICT and its "life-fit"

Having considered how and why older adults were either using or not using computers we can finally consider the nature and outcomes of their technology use when it occurred; in particular, how ICT use fitted with the rest of people's lives. As was reflected in our survey data, older adults' use of ICT was more limited in its range and frequency in comparison to the whole population. That said, although 12 interviewees were classed from the survey data as "frequent" users of computers, a minority ( $n=4$ ) could be classed as "heavy" or extensive users of computers, engaging with a range of technologies and applications and, in one case, having used computers at home for over 40 years. For these individuals, computing could be classed as one of their primary interests and hobbies:

I should think I'm on [the Internet] every day for something. . . , and if I want some information, I'll stay on there, you know. . . All that information is on there if you keep looking for it. Ask Jeeves, "could you please state where all television transmitters are." And then it will give you a list of websites to go into. . . I've got a programme on there that will tell me where every speed camera is in England! So if I'm going somewhere long distance, I'll tap out the journey. There's a link to everything practically. I find I can get—well you can get in anywhere round the world. You can actually get into space satellites now.

**Yes. I remember when you could look down the Hubble telescope. . .**

You can still get in it now! I've got that on there [points to the computer]—I can just go into what that's looking at the moment. [Male, 63]

Most computer-using interviewees, however, were less extensive users with many using a computer for a restricted range of applications with one or two specific main uses. Unlike many of our interviewees in other age groups who tended to use computers on a more frequent basis and for a range of purposes, older adults were more likely to be using a computer for a specific "project" or use—be it emailing one or two specific individuals or cataloguing or digitising collections of photographs, music and books. In this way, the computer was a specific and purposive event:

Well I use it as a word processor for letters. I store a few. I'm the sort of bloke in the office where papers are all over the place. Once a month I have a blitz and tidy up. There's rubbish on there I haven't bothered to clear off. So, I use it as a processor. [Male, 70]

We chat with a chap called Mike who's up in Essex. He's a bit of a war historian as well. And of course, we talk a lot about this and we go on and on. We have to stop it, otherwise it costs a fortune. But that's the sort of thing I do and nothing more than that really. [Male, 69]

I have a scanner and I'm in the process of scanning all my black and white negatives into the computer. They're over 40 years old; they're from when I was a teenager. [Male, 61]

Well, the first thing I wanted to do was to create a sort of database of all my books, which I have maybe about 2000 books. And I want to put everything down. [Male, 61]

There was therefore a strong sense of older adults using ICT to sustain and support non-computer-based hobbies and leisure activities (Savolainen, 2000):

**And so the computer was the first thing that inspired you to go out and start doing some classes?**

Yeah, having got the computer, I thought I want to find out how to use it. It really exercises the grey matter, because if you don't exercise your brain you just become redundant, you know. It's good because it does challenge you in many ways—makes you work, makes you exercise your brain and there are end results as well. It's helped my tennis coaching immensely. All the lesson plans and I'm secretary of the club as well. Letter-writing, minutes, and I'm into tennis all round the area actually—groups and community tennis partnership. I've got tennis coming out of my ears. [Male, 63]

This interviewee's initial allusion to using ICT as a medium for a specific activity in itself reflects the perceived importance of remaining active. Activity has long been thought to be related to successful ageing, with social and productive activities being argued to afford physical benefits, and more solitary activities, having more psychological benefits (Menec, 2003). Of course, computers can fulfil both types of activities—acting for some people as a means to “keep the brain ticking” and “filling a void in your life”:

I always said when I'd left work I'd had enough [of computers] but I think it fills a void in your life. It's a useful tool. Its good if you've got any grandchildren, two or three of mine are computer literate so I try to keep up with them. But it can be a bit boring talking to people about computers.

**Do you have people you can chat to?**

My friend who I used to work with. He became a computer buff because he had to do it—he was on a supervisory grade. He had to learn. When I said I was going to have one he said don't! It's a waste of time, you realise two or three hours have gone by and you haven't achieved anything. [But] it keeps the brain ticking a bit. [Male, 70]

There was, therefore, a recurring sense of ambivalence from many of our interviewees, acknowledging on the one hand the “amazing” and “miraculous” nature of computers but struggling to fit them into their day-to-day lives:

My daughter went to New Zealand on her own just before Christmas for a month and she set up the email thing and we went to a friend's house and I actually sent one. I tapped it out and my friend sent it, yes. We had a laugh and I thought that was amazing. . . But then, I've got an uncle in New Zealand, but he's on the phone. It's nice to hear a voice. I really don't know what we would use one for. [Female, 63]

Yes, you can get information from companies quickly. You don't have to wait for them to send you their brochure. You can go on to their website, as it's called, and there it is in front of you, the answer to your initial question. That's fine. Yes, people can do their accounts if they want to, but that's idleness. That's a lot of money to sort of set out to just merely to have an electrical gizmo that will do what you can do with paper and pencil yourself, or you should be able to. So I say this, because I have

in my mind, my friend, Jenny, who I've been with this morning. And she's given up coming to sewing class with me for why? Because she's always sitting at that damn machine. It takes over your life, it seems to me. It can do so many things that you feel *obliged* to do them. We get pretty pictures from Jenny. She's sitting there, she's obviously waiting for something to come through on a fax machine or something, so she sends us rubbish. Well, I think that's wasteful in a home situation. Now, having said that, yes, they are miraculous. [Female, 65]

### 3. Discussion

It is clear that to conceptualise all older adults as either absolute “nonusers” or highly empowered “silver surfers” is misleading. Indeed, the construction of the highly resourced, motivated “silver surfer” using ICTs for a range of “high-tech” applications is in many cases an erroneous presentation of older adults use of ICT. Older adults' computer use is more basic and mundane than the silver surfer discourse suggests. These older adults who were using computers were mainly doing so for specific purposes; word processing, keeping in contact with others and generally teaching themselves about using the computer. Older adults' computer use mainly takes place at home and where there is support it is from immediate family and close relations. Similarly, nonusers are not a homogeneous group of disempowered, under-resourced, and underskilled individuals. It was not apparent from our interviews that older adults are not making use of computers because they are alienated from or unable to use new technologies.

How then can we begin to develop a more realistic understanding of older adults' (non)use of ICT than exists at present? Firstly, we would not argue, as others have, that technology-using individuals tend to follow a “general life script” or life-course which can be considered typical to all (Green & McAdams, 2003)—neither would we claim that there are necessarily replicable elements of “successful” technology-using older adults who can be encouraged via government policies. Instead, it is clear from our data that using ICT is not merely about having or “not having” access to technologies, but the scope and intensity of the relationships that people develop with technologies and the nature of what they do with them (Loges & Jung, 2001). More importantly, and a point often overlooked, is that older adults are not simply “users” or “nonusers” of computers. Being a “computer user” is not a permanent state-of-being and once having learned to use a computer does not irreversibly make one a computer user for life (and it follows “technological have,” “information rich,” and successful “cyber-citizen”). Instead, as Murdock (2002) reminds us, the influences behind people's (non)use of ICT are multifaceted and historical—with individuals living technological “careers” mediated by “local” contexts of individual and community technology use. Over their lifetime, we have seen examples of how older adults therefore move through different states or levels of technology (non)use depending on their circumstances and context. For example, someone making continuous and comprehensive use of ICT in the workplace may then move into making only spasmodic and limited use of ICT once having retired.

Of particular interest in our data was the often nonenduring influence of the workplace in enrolling people into the information age for the rest of their lives. As we saw from our interview data, the workplace often acts as key site for people having to use, and learning to use, computers. Yet the forced or coerced use of technology at work (as employees do not own the computers they use and their use is often forced, shaped, and structured by their employment) was often not translated into later use in older age. This is an important point, especially regarding the common argument during the 1980s and 1990s that nonuse of ICT was merely a “generational” effect that would soon die away as cohorts of computer-

using workers become older adults themselves (e.g., Negroponte, 1995). Instead, there are deeper influences at play here causing older adults to make less use of ICT despite their prior skills and experience of computers. Thus, in trying to understand this enduring pattern, whilst we did find some evidence of the usually suggested physiological and psychological reasons behind older adults' lower levels of use of ICT (e.g., poorer vision, memory, and dexterity), it seems that there were wider structural reasons to older adults' limited use of ICT. Key here are the two prominent issues from our interviews of ambivalence and relevance of ICT for older adults.

Ambivalence refers to the experience of simultaneous positive and negative affect toward an object. Whereas psychologists see ambivalence arising from intrapersonal conflict, here we can turn instead to the broader sociological notion of ambivalence arising at the level of social structure when an individual in a particular social relation experiences contradictory demands or norms that cannot be simultaneously expressed in behaviour (Weingardt, 2000). Smelser (1998) makes the convincing case that whilst the idea of ambivalence is usually used by academics to explain phenomena such as reactions to death, separation, and relationships, it is also required in our understanding of more prosaic socially structured issues. Thus, with regards to ICT, we can identify older adults' profoundly ambivalent attitudes as reflecting various structural attributes of the "information society"—in particular, where we are surrounded by "macro" discourses and portrayals of inherently beneficial, empowering, and "magical" new technologies from governments, media, peers whilst at the same time experiencing a fairly limited utility and usefulness of the same technologies on a "micro" everyday life perspective.

Thus, on one hand, we found plentiful evidence in our interviews that "the personal computer has become such a symbol of efficiency and participation in the information age that is it often embarrassing for [people] to admit no knowledge of them' (Lupton & Noble, 2002, p. 10). Yet, on the other hand, although we found that older adults are less likely to be involved in the high level use of ICT both in the home and at work, less likely to be involved in the culture of ICT and, most importantly, less likely to be involved in the *pleasures* of using ICT (see Faulkner, 2001). From this perspective, if something is both less useful and less pleasurable in practice then people are understandably less inclined to engage with it. Of course, "the effect of the felt ambivalence about technology is often either immobilising or polarising" (Faulkner, 2001, p. 90). Whilst some of our interviewees were polarised into an almost ideological opposition to computers, the majority were immobilised via an inability to fit computers usefully into their lives and, therefore, made little or no use of them (this was the case with 18 of our 35 interviewees who expressed such tensions, all but one within the initial survey categories of nonusers and moderate users).

Thus, it would seem that a highly salient reason behind the nonuse of computers is simply the (non)relevance of ICT to older adults' lives. Much academic and political interest in older adults and technology has been based on an implicit assumption that ICT use is an inherently useful and desirable activity throughout all sectors of society. Thus, for many authors, the logic behind overcoming the digital divide is an imperative toward "giving people the information tools they need to participate in the decision-making structures which affect their daily lives. It means helping people use these resources to deal with their everyday problems" (Doctor, 1994, p. 9). Yet, the rhetoric of the "information society" belies the fact that for many older people "dealing with everyday problems" does not involve personal use of ICT. As we saw from our interviews with current nonusers of computers, having no need or no interest in using computers is a regularly cited and powerful rationale. There is maybe a need here to reconsider the "relative advantage" (Rogers & Shoemaker, 1971) and "situational relevance" (Wilson,

1973) of ICT use for older adults. As Balnaves and Caputi (1997, p. 92) reason, it follows that where the impact, meaning, and consequences of ICT use are limited for individuals then we cannot expect sustained levels of engagement: “the concept of the information age, predicated upon technology and the media, deals with the transformation of society. However, without improvements in quality of life there would seem to be little point in adopting online multimedia services.” In other words, only “when a system is useful and training is made available, older adults will take part in the Information Age” (Rousseau & Rogers, 1998, p. 427).

This leaves us in a conundrum regarding the policy-orientated concern with how older adults can be encouraged to make more use of ICT. As was intimated at the beginning of the article, much current thinking in this area has been based around the notion of “correcting” the deficiencies of non-ICT using individuals—be it in terms of augmenting their access, skills, or disposition. Some authors contend that computers merely need to be better publicised and “sold” to older adults to persuade their use, for example, “education programs may also be needed to inform the elderly of the potential capabilities of the new technology” (Madden & Savage, 2000, p. 183). Whilst we would not contend that there is no need for computer education and training provision this technologically determinist view of non-ICT using older adults needing to be reskilled and reeducated toward computers ignores the fact that technology is socially shaped and determined (e.g., Edge, 1995; Woolgar, 1996). Indeed, older people are far more likely to be “on the receiving end” of new technologies than to be involved in their creation (Arnold & Faulkner, 1985). It could, therefore, be the case that rather than trying to change older adults, older adults should be involved in changing ICT to be more of an attractive, interesting, or useful option for many older adults.

From this point of view, it could well be appropriate for the government and other interested parties to begin to consider alternative means of “reshaping” ICT to fit better with the lives of older adults—rather than the other way around. The point has been well made recently in that many government websites purporting to offer citizens ready access to state services such as pensions, social security, television licensing, and the like are underused due to their lack of substance and utility (Hedra, 2002; Public Accounts Committee, 2002). Similarly, the modest boom in online shopping has been largely based around a narrow range of leisure and entertainment products such as CDs, videos, DVDs, books, and electrical and computing equipment. One would hardly expect older adults to begin purchasing such products online if they are not already doing so in the high street. The practical barrier to the development of more ICT-based services tailored toward the needs and interests of older adults is that few, if any, companies would likely to be willing to provide them until a ready online consumer base exists. Older people are unlikely to develop an interest in using ICTs until such services are available. Yet whilst such strategies may go some way to increasing the take-up of ICT by older adults, there is also a pressing need to promote more realistic expectations for ICT use. The government and others must accept that, in its present forms, ICT is not universally attractive to, or universally needed by, older adults. Until these circumstances alter it is, perhaps, unrealistic to expect universal take-up of ICTs such as the computer and Internet by older adults as is currently hoped.

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