



This consumer good could save your life: The defibrillator at home

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Abstract:

In the UK, it has recently become possible for the Automatic External Defibrillator (AED), a device that can treat a heart attack, to be sold direct to members of the public, for use at home. This is a significant development, in so far as it prefigures a wider direction for medical technology to be marketed to consumers, rather than being mediated by the medical profession or hospitals. Using insights from Science and Technology Studies, and the sociology of consumption, this paper reports on a qualitative study of UK consumers who have bought an AED. The AED has multiple meanings for the people who have bought one, displaying a rich variety of symbolic resonances, and articulating ideas about community and consumption.

Keywords: Defibrillation, consumer goods in the home, adoption of technology.

**Résumé:**

Depuis peu au royaume uni les membres du public ont eu le droit d'acheter, pour l'utiliser chez eux, le défibrillateur externe automatique (le DEA), un appareil qui peut traiter une crise cardiaque. Ceci est un développement très significatif, dans la mesure où il préfigure une direction plus large où la technologie médicale puisse être lancée directement aux consommateurs plutôt que d'être négocié par la profession médicale ou les hôpitaux. Utilisant des perspicacités des Etudes de la Science et la Technologie et aussi la sociologie de la consommation, cet article rend compte d'une étude qualitative des consommateurs britanniques qui ont acheté un DEA. Le DEA a des significations multiples pour les gens qui en ont acheté un, montrant une riche variété de résonances symboliques et articulant des idées sur la communauté et la consommation.

Mots clefs : Défibrillation, biens de consommation durables à la maison, l'adoption de technologie

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Introduction

While there has always been a mixed economy in health care, including the sale of medical products direct to consumers, the consumer good discussed in this paper is quite different from most of the health care products on sale in UK. The defibrillator (a medical device for the treatment of a heart attack) is expensive, a major treatment for a major acute condition, and, up until quite recently, only used in hospital or in an ambulance, by qualified professionals. It thus differs quite substantially from the health care products and services routinely sold to consumers in the UK like over-the-counter medicines (Edgley, 2007) or aesthetic surgery (Holliday and Cairnie, 2007). In this paper we will analyse the defibrillator, sold to, and used by 'lay' people, as a consumer good. Our analysis will draw on the sociology of consumption, following Warde (1996) who calls for more empirical case studies in the sociology of consumption, and sociology of technology (Timmermans and Berg, 2003). There is an established intersection between studies of technology and the sociology of consumption (such as Silverstone, Hirsch & Morley, 1992). Moorman (2002) points to the importance of empirical studies of the intersection between health and consumption.

Background

The purchase of a complex medical technology by non-medical consumers needs to be understood against the wider context of changes in the knowledge and opportunities available to patients/consumers. There is a general belief (certainly amongst doctors) that patients have become better informed (Judge Institute, 2003), and the idea of patients as active consumers and builders of medical technologies has some parallels with the work of Rapp (1999). This can also be analysed as a policy direction aimed at making people more responsible for their own health (Roberts, 2006). Hardey (1999) shows how the wider spread of professional expertise made possible through the Internet effectively challenges medical expertise. Within this paper we will discuss an empirical study of the processes discussed by Helen (2004). More broadly, Giddens (1991) points to the 'reskilling' of lay people in diagnosis. There is also the possibility of the decline of the importance of the hospital as the main site for medical technology. While what have been termed innovative health technologies have attracted a degree of attention from the sociology of technology community, the focus has been mainly on genetics and informatics which tend to be institutionally based and are still controlled by doctors. The



technologies we are interested in have moved out of the hospital and (largely) out of medical control.

Another significant development, though one where change in the UK has only been at the margins, is the idea of health care becoming a consumer good, or more commonly, users of health care services being described as consumers (Clarke, 2007, Goode and Greatbatch, 2005). Baldock and Ungerson (1996) is one of the few empirical studies of 'consumers' of a service formerly provided by the public sector was effectively privatised. This mixed economy of health care is an example of 'privatism' (Saunders 1990), which is only possible when the things people need are produced and marketed in a commercial way. Pickstone (2001) provides a useful analysis of this 'consumerist' type of medicine where health and lifestyle have become blurred. The idea of selling medical technology direct to consumers appears to be gaining interest among the manufacturers of medical technologies. A report for the business consultants Accenture (Roussell & Nunes, 2005) is enthusiastic about the possibilities of selling direct to consumers. It is possible that this is due to hospitals and health care systems (across the developed world) being under intense pressure to control costs, thus making them increasingly difficult to sell to. This is part of a wider trend in the developed world to try to make people more responsible for their own health (Newman and Vidler, 2006).

The adoption of new technologies by consumers has been extensively studied (for example Rogers, 1995 or Silverstone et al, 1992), though as Mick and Fournier (1998) point out, in-depth qualitative studies focusing on technology in the consumer's home remain rare. An interesting perspective on this process is Lehtonen (2003) who uses the metaphor of domestication to analyse the process by which consumers took up new electronic technologies at home. Though this has some parallels with the study reported in this paper, the defibrillator has some important differences, notably that it is (very) unlikely to actually be used. One of the few sociological studies of the use of health care technology in the home is Lehoux, Saint-Arnaud, and Richard (2004), which the use of major medical interventions in the home, interviewing both patients and carers. Though similar in theoretical orientation to the study reported in this paper, there are important differences in the technologies studied, and in the fact that the medical technology studied by Lehoux, Saint-Arnaud, and Richard was provided for the patients, rather than purchased by them. The approach that we have taken in this study is not to consider the AED at home as a simple 'adoption' of a new technology by consumers (Rogers, 1995), but rather taking the view "that the household [is] part of a transactional system, dynamically involved in the public world of the production and exchange of commodities and meanings" (Silverstone et al, 1992, p.19).



Science and Technology Studies (STS) perspectives

Timmermans and Berg (2003), reviewing the relationship between medical sociology and Science and Technology Studies, suggest that 'the recent turn to 'technology-in-practice' requires much in-depth investigation and elaboration' (p.108). In other words, health care technologies need to be studied in the context of their use. They also call for more studies of 'small, home-care technologies'. Thus, this study of the AED, in the context of the home provides a useful opportunity to develop both of these programmes of research.

Oudshoorn and Pinch (2003) have users as the main focus of their book, and explicitly draw on sociology of consumption, as well as Science and Technology Studies as theoretical approaches they employ. They suggest that sociology of consumption has a much longer tradition of studying users than STS, and has placed an emphasis on the symbolic and cultural nature of consumption, which STS has not always focussed on. The concept of domestication is a central theme. Drawing together both the sociology of consumption and STS, Oudshoorn and Pinch (2003) suggest that an analytical approach they have in common is to see users' identities 'are articulated, performed and transformed during the development and use of technologies' (p.25).

Laegran (2003) combines STS and sociology of consumption by using domestication as a way of analysing how technologies can still be reconfigured, even if they would be considered (in classical STS terms) to have been 'black-boxed'. The AED is very strongly and deliberately 'scripted' (Akrich 1992), but can still be reconfigured by users. One of the reasons this is possible is that the AED was not really redesigned at all for the consumer market; AEDs which had been developed for use by first-aiders and paramedics were made available for general sale.

We wish to develop our analysis by using another idea from STS: Hutchby's (2001) notion of affordance. Affordances are defined as "functional and relation aspects which frame, while not determining the possibilities of agentic action in relation to an object. Technologies can be understood as both shaped by and shaping of the practices humans use in interaction with them" (Hutchby 2001, p.444). Hutchby (2001) is arguing that while technologies can indeed be re-interpreted or reconfigured these possibilities are not infinite. With the AED, as with other technologies, there are practical constraints on the use of technology, though users may use technologies in ways other than those intended by the designers. Lehoux et al (2004) support this view: "...specific patterns of interaction result from the constraints and opportunities associated with the technology, the illness, and the place where it is used" (p. 618). Thus, the idea of affordance can be used analytically to explain how the AED became



'domesticated' within a context where there are genuine limits to the degree it can be re-interpreted.

The development of the defibrillator

Though the idea of using an electric shock to treat a heart attack had been discussed as early as 1899, the first successful use recorded was in 1947 (Beck, Pritchard & Fell, 1947). Zoll carried out the first successful external defibrillation of a human heart (Zoll, Linenthal, Gibson, Paul & Norman 1956; Kouwenhoven, Milnor and Knickerbocker 1957). It was already understood that providing a shock quickly gave the best chance of survival (Kouwenhoven and Milnor, 1954). It was also recognised that the increasing incidence of heart disease was resulting in more cardiac arrests occurring, not just inside hospitals, but also increasingly outside of them (Beck and Leighninger, 1960). Inevitably, defibrillation would not be achieved until the victim arrived at hospital, which was almost invariably too late. Pantridge and Geddes (1967) constructed the first portable defibrillator, fitted to an ambulance.

An innovation in 1979 provided a new impetus for the extension of defibrillation outside of hospital. Diack, Welborn, Rullman, Walter and Wayne (1979) developed what they referred to as an 'automatic resuscitator' which they suggested would assess the victim of cardiac arrest and then automatically deliver a shock to the heart if it was needed. They commented that it was 'safe to operate and simple enough for a bystander to use after reading easy 1-2-3 instruction' (Diack et al., 1979, p.79). Unlike manual defibrillators, which required the operator to assess the heart rhythm and take the decision to give a shock, the simplicity of this device appeared to offer an opportunity to considerably expand the range of people who could provide early defibrillation. Some believed that the simplicity of the Automated External Defibrillator (AED) afforded the opportunity to extend its use beyond emergency personnel and in 1986 security guards were trained to operate AEDs for use during the World Exposition in Vancouver (Weaver, Copass, Hill, Fahrenbruch, & Hallstrom et al. 1986).

In the UK the initiative for laypeople to use AEDs has come from private organisations and individuals, as well as the government and heart care charities. AEDs have been purchased for shopping malls, airports, railway stations and other public places, as well as by some large employers for their workplaces. It is, however, only since 2004 that the AED has been marketed direct to consumers in the UK. AEDs for home use have been distributed to patients with an existing heart condition in both the USA and Austria, as part of research studies (Cagle, Diehr, Meischke, Rea, & Olsen et al., 2007; Chen, Eisenberg and Meischke 2002; Haugk, Robak, Sterz, Uray, & Kliegel et al 2006). By contrast, this study is about a group of people who bought



(rather than been given) AEDs, in the United Kingdom, and who do not necessarily have a (known) history of heart disease. This would seem to be consistent with the idea, from both policy and research, that patients are increasingly becoming active 'consumers' of health care, rather than passive recipients.

Most medical technology (as opposed to medicines, which are much more closely regulated) can, theoretically, be sold direct to consumers in the UK. Regulation is principally through the Medicines and Healthcare Products Regulatory Agency. A device needs Medicines and Healthcare Products Regulatory Agency approval, but not specifically for sale to consumers. This is not the case in some countries where having an AED at home would require a prescription from a physician, though AEDs are now being sold direct to consumers in Germany, Austria, the USA, Canada, Switzerland and the Netherlands. In recent years, in the UK, regulation governing the sale of health care products direct to consumers has become increasingly 'business-friendly' (Abraham and Lawton-Smith, 2003; Abraham and Lewis, 2000). The case of statins, which were moved from being prescription-only to over-the-counter medicines, partly at the urging of the state is a good example of this (Edgley, 2007). The regulation is deliberately 'business-friendly' to encourage the development of the medical equipment industry in the European Union. However, the relaxed regulation in this instance is also influenced by a particular direction in health policy. This is the attempt by the UK government (though by no means confined to them) to persuade citizens take more responsibility for their own health. The Wanless report on the long term direction for the UK NHS (HM Treasury 2002) regards this as a key policy goal.

Methods

We conducted a qualitative, interview-based study with a group of people (n=10, five couples) who have purchased an AED. The (only) AED on sale to consumers in the UK is the Philips Heart Start, manufactured by Philips Medical Systems, and marketed by a small UK company (Home Heart Care). We interviewed both partners in a couple, as they would be the potential patient and the potential user of the AED. Interviews were conducted at interviewees' homes. Interviewees were recruited via the company that had sold them the AED. The interviews were recorded digitally, transcribed, and then analysed thematically, using Nvivo. We acknowledge the small sample size, however, there is only a very small population of customers available to sample. Ethical approval was granted by the University of Nottingham Medical School's Ethical Committee. In the extracts from transcripts below, I indicates the interviewer, F the female interviewee and M the male interviewee.



Results and Discussion

Several key themes derived from the data will be presented. These are determined principally by the theoretical and policy debates outlined above. These commence with the more practical issues of how our interviewees came to hear of the AED and why they decided to buy one, before moving on to some discussion of the AED itself, before considering their purchase of the AED in the wider contexts of policy, and the AED's status as consumer good (or otherwise).

How did they hear about it?

As the sale of AEDs direct to consumers is a relatively new development, and was not supported by extensive marketing or advertising campaigns, it is important to understand how the consumers came to hear of the product in the first place. There were two main routes. The first of these was the extensive news coverage, in a variety of media, both locally and nationally that AED has had, including coverage (in the Daily Mail newspaper and on daytime TV) of the possibility of buying an AED to have at home. The second route was via local initiatives to fund raise for an AED in public places (like a leisure centre and a doctors' surgery). In addition, most of the people we interviewed had some sort of first aid training, though as the AED is not usually included in these programmes, it is unlikely that this was a source of information.

In line with the idea in the literature that patients are becoming better informed (though this is not a simple phenomenon (Henwood, Wyatt, Hart, and Smith, 2003), and less likely to accept unquestioningly the advice of their physicians, several of the our interviewees had asked their doctors about the purchase of an AED. Though they had all been advised against it, they went ahead with the purchase. For example:

I think his [cardiologist] opinion was, 'You're not likely to need it'

And

I But your doctor recommended that you didn't need the machine?



M Well the actual chap at the hospital said that he didn't think... he said, 'You'll be okay until you're 90.' But you never know.

Further evidence suggesting that these were comparatively 'informed' consumers/patients was that several of them had other medical devices at home which they had purchased, rather than being given or prescribed. These were principally blood pressure monitors, though one couple also had a heart rate monitor. Again, all of these can be purchased (in the UK) without a doctor's prescription, and increasingly being marketed direct to consumers.

Why did they buy it?

Three of the five couples interviewed had bought the AED because of their concerns about being at risk of a (second) heart attack. This was explained by their own, and their family's history of cardiac disease. Typical is this exchange:

F Well obviously because I was afraid of something happening... My mother died at 50, and all the females in the family died in their 40s.

I Right. From the same condition?

F Yeah. But with me it happened all of a sudden. I'd no warning. It was just one massive heart attack

One couple had no personal or family history of heart disease, but thought that:

So in sort of starting to think about that, M felt maybe we should have one here in the home, a defibrillator, just in case.

They did not expand on the reasons for the purchase, though it formed part of their concept of having a healthy lifestyle. The fifth couple interviewed also did not see themselves as being particularly at risk of heart attack (again there was no personal or family history) and had bought the AED as a precaution. In this case, the AED was seen as an extension of an enthusiasm for technology at home in general:



So it interested me technically. And I was also the first member of the [social] club to have a PC

The reasons given for the purchase were, on the whole, straightforward, 'rational' accounts of the purchase. While we acknowledge that there may have been a degree of impression management (Goffman, 1959) going on here in the context of the interview, there is nothing else in the data that suggests that there were any other reasons for the decision to purchase.

Symbolism of the AED itself

The device itself is both literally and metaphorically (Latour, 1987) a black box, and is a good example of a machine that conceals how it works from its users. This is quite a significant difference from the physical appearance of the hospital defibrillator, which has controls which allow its settings to be changed, and readouts which give information about the patient, and the machine's performance. This is a good example of what Woolgar (1991) terms 'configuring the user', where the machine embodies a particular conceptualisation of the user by the machine's designers, and, as a result, tries to impose a particular mode of use on the user. In the case of the AED, the user is considered to be someone who does not know anything about the underlying physiology of the cardiac arrest, and cannot be safely allowed to change any of the machine's settings. Hence there are only two buttons on the AED; one to switch the machine on, and another to deliver the shock if necessary. In addition, the AED delivers instructions to the user audibly (e.g. 'analysing [heart] rhythm' or 'shock now'), again directing that the user should utilise the device in a particular way.

However, as Laegran (2003) shows, even after a device has been 'black-boxed' in STS analytical terms, it is still amenable to further reconstruction by users, through the process Laegran (2003) (deriving from Silverstone, Morley & Hirsch 1992) calls domestication. In our data, the AED had to be fitted in to the collection of technology already present in the house, and where it was sited tells us some interesting things about how it was viewed. For some users it was a piece of medical equipment and therefore belonged with other medicines in the bathroom cupboard, while others kept it out of sight, as an object only to be used once (if at all). Other users kept it on view in the living room, while in one house it was kept in the home gymnasium. Its siting alone implies that there were several different interpretations by users of what kind of device it was, and how they made sense of it, though there were limits to this analysis. Presumably its affordances (Hutchby 2001) meant that no one kept it in the kitchen.



Could the AED be considered to be a status symbol or an example of conspicuous consumption? It is, after all, at the expensive end of consumer goods in the UK (£1000/\$2000/€1600). This seems unlikely. Physically it is a fairly unremarkable and surprisingly small electronic device, barely indistinguishable from many others. A large screen TV is much more impressive. Most of our interviewees kept the AED out of sight in a cupboard. What might be being said, symbolically, with this device is, "I am a person who looks after my health". Following Campbell (1995) we do not intend to concentrate exclusively on the symbolic, communicative aspect of the AED, but also consider a more instrumental approach (Aldridge, 1998).

One potential critique of the AED at home is that it represents an example of what Habermas calls the systems colonisation of the lifeworld (Fredriksen, 2003). Habermas argues that what might be termed 'everyday life' has increasingly become 'colonised' by technology, bureaucracy and expertise, substituting 'purposive-rational' ways of knowing for 'communicative action' (Habermas, 1984). Fredriksen (2003) shows how medicalisation (Illich, 1977), particularly when it involves technology is a good (perhaps the best) example of this process at work. Though this is a helpful analysis, it would not be pursued at this point, as it does not explicitly address the issue of consumption.

Privatisation

As discussed above, the purchase of the AED could be seen as being part of a wider policy agenda of the privatisation of health services, and attempts to make people more responsible for their own care. This view is supported by some of our data. One of the reasons given by our interviewees for the purchase of the AED was concerns about inadequate response times by the ambulance service:

- M The thing is being where we are my wife's had to send for an ambulance several times – can't remember how many – they take a long time. I mean this nonsense about eight minutes is absolute rubbish. On one occasion...
- F Two hours.
- M ... it took two hours because they got lost.

The purchase of the AED is thus the substitution of something privately purchased for themselves in place of a public funded and provided service. In the case of these interviewees,



the AED purchase (in some respects) was seen as enabling them to carry on living in the (idyllic) rural setting that they enjoyed. This is also the case, though in a slightly different way, with another couple interviewed. They lived in a gated community, though they were younger (40s-50s) than our other interviewees. Having no history of heart disease, the AED for them was not about dealing with a specific risk, but more as part of a 'healthy lifestyle'. This was a well-off couple who had a home gymnasium, heart monitor (for use during exercise) and blood pressure monitor. The AED was seen as part of this collection of goods intended to promote better health, thus differing from the drugs considered by Bolton, Reed, Volpp, & Armstrong (2008) where the purchase of drugs had a negative effect on consumers' efforts towards a healthy lifestyle. Here, an STS analysis would point to the importance of the technological context; one device can only be understood in the context of others in a specific setting (Giere, 1993), as well as its users.

The purchase of the AED here seems quite different from Baldock and Ungerson's (1996) analysis of 'privatism' (the passive consumption of standard mass-market products), which they describe as the least successful of their typologies of relationships with care. For our interviewees the purchase of what was a standard product appears to have been quite successful, at least in their terms. It may be that Baldock and Ungerson's 'consumerist' typology may describe our interviews better, though, again, we would hesitate to claim this as the definitive analysis, as the purchase of the AED seems not to have been as 'active' as their model of consumerist might suggest.

However, to view the AED purely as a way of privatising health care is an oversimplification. One of the topics that several interviewees wished to talk about was how (and with whom) the AED might be shared.

Well I bought it but there's a few people that I've said, if anything happens phone me (laughing), as well as the ambulance – the ambulance first and then phone me ... when we had the demonstration I called in me sister, her husband, next-door neighbour.

Another interviewee said:

...she [neighbour] came in when we had the demonstration ... to learn how to use it. And I said to her, 'Well if you're worried at all and Jack's heart does stop give me a shout and I'll nip over as fast as I can with the machine'.

The AED could be viewed as an object articulated within family and community relationships and, indeed, binding those relationships in some form of 'gift' exchange. It



provides an interesting parallel to the seminal work of Titmuss (1970). This analysis is confirmed by data from our interview with the couple who lived in the gated community, and apparently had the most 'privatised' lifestyle, who did not seem to have considered the possibility of offering the use of the AED to anyone else. This is an example of what Oudshoorn and Pinch (2003) would analyse as both the reconfiguration of the user and the technology. The technology, sold to one person (couple) has been reworked as a resource for the community. Simultaneously, the AED has made possible (via its affordances (Hutchby, 2001)) the reconstruction of the user as a kind of first-aider.

Other interviewees, though prepared to offer the use of the AED to friends or neighbours, were more cautious about it:

I If something happened across the way... you think it's a heart attack, would you run over with it?

M I wouldn't actually rush to a neighbour, but if a neighbour said, 'Look, can you do something about my husband or son or daughter who's just gone down', and I would say, 'Well ring for an ambulance and meanwhile I've got this'.

This caution was principally due to concerns about the risk of litigation, and consent to resuscitation. The idea that a rescuer potentially puts themselves at risk of litigation appears to have spread from the medical world. It has been of sufficient concern to the resuscitation community in the United States that 'Good Samaritan' laws have been passed protecting people who have used an AED from litigation (National Conference of State Legislatures 2007). In the UK no such laws have been passed, but the Resuscitation Council's (2000) guidance on the legal status of those who attempt resuscitation states "It is, in practice, extremely difficult to envisage (and no precedent has yet been found) how a victim could successfully sue an individual who rendered him aid in an emergency situation" None the less, concerns remained;

I don't think so because for one thing I wouldn't know the person concerned. I mean it's one thing if it's my husband, but to – unless I were properly trained – I wouldn't go interfering with a stranger

This related to concerns about consent, again echoing debates within medicine:



Her husband said, 'Well I tell you what. If you purchase one, don't use it on me', to which I said to him, 'Why do you say that? Because you don't trust the machine or you don't trust your wife?' He said, 'No, at my age I feel it may save me it may not, and if it doesn't I just say let me go, I've had a good life', and he's accepting that, so I think that's a fair comment

The AED as consumer good

For the interviewees, the AED was definitely not a 'consumer' good, and they were at pains to point this out:

- I So you see it as a different kind of purchase ... a different kind of commodity you feel as to other kinds of purchases that you make.
- F Well they save your life, everything else is just material.
- M It's an emotive purchase isn't it? You're emotionally wanting that. You're not emotionally wanting a television or anything else. That is a different kettle of fish altogether to my mind

Despite the fact that this was a well-informed group of patients/consumers (as we have seen above), it would (practically) have been impossible to engage in the kind of comparison shopping that would be expected of the stereotypical 'rational' consumer (Gabriel and Lang, 1995), not least because there is only one brand and model of AED on sale to consumers. Having said that, some purchasers did seek advice from their physicians (and then ignored it). Though they were concerned to emphasise in the interviewees that this was not a purchase of a consumer good, as far as they were concerned, it is important to point out that the AED is, nonetheless, a commercial product, marketed and sold in the usual way, by a large multinational corporation. Here, STS scholars working in the social construction of technology tradition would point out that technologies can sustain multiple meanings, either within one group of users, or across several groups (Bijker 1995). The Philips brand name was an important factor in the reasons for purchase given by our interviewees:

And I'd heard of Philips. Well most people have heard of Philips. Whether it's the same Philips that makes all the sort of televisions and whatever I don't know. But it was a known make and that's probably what I went for more than anything.



And

M We also know that Phillips in the medical business is a much respected name.

I Yes. So that matters then?

M To a degree.

The trust in Philips as a brand name presumably taps into previous satisfaction or recommendations with their mainstream consumers products such TVs or music systems. It seems unlikely that our interviewees were familiar with Philips as a manufacturer of medical equipment, though Philips have been running advertising campaigns in the mainstream media in the UK, where the message was to exhibit the brand expertise in sophisticated medical technologies such as foetal scanners. It is interesting that while they obviously were not selling their health technologies to the public consumer (though this may have been an intention for the future), Philips do appear to be trying to build a sense of branded trust through a translation of technological expertise from health technology to their entertainment media. This would appear to be an example of a distinctively contemporary manifestation of brand management, as analysed by Arvidsson (2005). The issue of brands also points to some more evidence that, despite our interviewees' claims, the purchase of the AED was in fact, similar to that of other consumer goods, especially electronics. This interviewee was keen to point out his technological expertise, and that he was prepared to buy expensive and high-tech brands.

And I've always been a technical author, been interested in technology and had to follow technology's developments... I mean if I said I want to get a Bose, then we get a Bose.

More broadly, our interviewees' trust in the AED seemed quite unequivocal.

I Do you trust the machine to make those ...

M Oh yes.

I Implicitly for all use?

M Yeah.



I I guess it's there's kind of two notions of trust. The trust to actually fire and the trust actually to save a life. Do you reckon those two different things?

M Well if a thing will work and inspire confidence to use it then the tool helps you to save a life, which might be your own.

Despite a wider scepticism about technology:

I Yes that's true. And does that go for all technology that you have in your life? I mean what's your feelings about technology as a general sort of idea?

F I've heard you curse your computer and I've heard you curse the VCR and digibox.

M Depends what you mean by trust. The thing is I know a bit more about the computer and the VCR than I do about this machine, and the more you know about it the more you're likely to distrust, so the best thing is not to know anything about it.

Given the extensive literature on the decline of trust in health systems (Alaszewski, 2003), doctors (Maynard and Bloor, 2003) and technology (notably the MMR vaccination (Hobson-West, 2003)), the trust demonstrated by all the interviewees in the AED is quite striking. However, as Timmons, Harrison-Paul and Crosbie (2008) show, the rhetoric surrounding the AED, especially in the media, is very persuasive in terms of engendering trust in this particular technology.

It is an over-simplification to treat the AED analytically as simply a consumer good, or not a consumer good. Like many technologies, it has a variety of meanings, socially constructed by different actors in different contexts. This is the point at which STS can once again be employed analytically. In this instance, the social construction of technology approach (Bijker, Hughes and Pinch 1987) has shown how technologies can hold multiple meanings, including different meanings for different audiences. While it undeniably can be considered at some points to be straightforwardly like other consumer goods (as, no doubt, Philips would hope), our analysis shows that it can simultaneously support different meanings and even usages. Drawing our analysis together, the best way of understanding the AED is to see it in the context of ideas about consumption. The AED is neither simply expressive or instrumental consumption,



and also needs to be seen in the social context of the 'consumers', an analysis which is in line with what STS might predict.

Conclusions

This study has shown that STS and sociology of consumption can fruitfully be employed in the analysis of technology in practice, and we would argue that there are important commonalities in the two approaches, notably the view of users as actively, reflexively involved in the construction of both identities and technology.

The broader significance of this study is that unlike the existing studies of AED use at home, the devices were not provided free to the consumers (Haugk et al, 2006; Cagle et al, 2007; Chen et al, 2002), with an existing diagnosis of heart disease, nor was this a direct privatisation of health services; a paid-for service being substituted for one that had hitherto been publicly provided. In this case, the AED is, in market terms, much more like any new consumer good being marketed by a profit-making corporation seeking to sell to consumers. As we have outlined above, this is a move which is very much in tune with current health care policy in the UK, and with changes in the regulation of this type of product designed to encourage its sale direct to consumers. However, instances of developments like this actually happening are comparatively rare, and we were only able to find 10 interviewees (reflecting the poor sales of the AED to date).

Despite this, the policy direction discussed above, taken in concert with an ageing but increasingly affluent population suggest that this development is a harbinger of things to come. An increasing range of health care devices is now on sale direct to the UK public, including (but by no means limited to) blood pressure monitors, heart rate monitors and home testing kits for a wide range of conditions and diseases. It is important to emphasise that few, if any, of these products were either licensed or available for sale 20 years ago. There is real enthusiasm for this process to be found in Lewis (2001). In addition, there is a range of more mainstream consumer goods, for which health benefits (real or imagined) are claimed, such as margarine that reduces cholesterol, or probiotic yoghurts. This has raised concerns with health care professionals (for example, Mayo Clinic, 2007).

Both policy-makers and corporations tend to consider that the AED itself is a straightforward and unambiguous technology. As we have shown, the insights of sociology of consumption and sociology of technology demonstrate how the AED, for our interviewees, is a complex, socially constructed object, which is capable of sustaining more than one meaning. For the most 'privatised' of the interviewees, living in a gated community, the AED was part of a



technological assemblage that guaranteed their healthy lifestyle, and demonstrated, symbolically, their commitment to looking after their own health. By contrast, for other interviewees, the AED was a way of dealing with the shortcomings of publicly-provided health services, but simultaneously (and paradoxically) a way of articulating their relationship with friends, family and neighbours, tying those people together in a new way.



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