

Adult Media Literacy

A review of the research literature

on behalf of Ofcom

By

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Preface

Ofcom is the independent regulator for the UK communications industry.

As part of Ofcom's work to promote media literacy we plan to undertake or support a range of research activities to monitor people's skills, knowledge and understanding of communications technologies and the content they watch and listen to either through broadcasting or online.

Ofcom defines media literacy as the ability to access, understand and create communications in a variety of contexts. We have published our strategy and priorities for the promotion of media literacy and these can be found on our website.

In October 2004 we commissioned Professor David Buckingham and Professor Sonia Livingstone to report on recent relevant academic and other publicly-available research into children's and adults' media literacy respectively. The purpose of this work was to outline the range of studies conducted, the gaps in research, provide examples of innovative methodologies, and outline possible barriers and enablers to media literacy identified by these studies.

These reviews have admirably fulfilled their task, and provide a stimulating point of departure for informing and refining research strategies and methodologies. Some of the recommendations can be taken forward by Ofcom; others may be more relevant to other stakeholders including content producers, broadcasters, platform and network providers, educators, government departments, parents, children's charities and other organisations. The assumptions, conclusions and recommendations expressed in this review are those of the authors and should not be attributed to Ofcom.

This review is published together with *The Media Literacy of Children and Young People: A review of the research literature*, by Professor David Buckingham. Further copies of both reviews are available from our website at www.ofcom.org.uk.

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Section 1

Executive summary

Introduction

With the growing importance of media, information and communications in society, media literacy can be said to serve three key purposes, contributing to (i) democracy, participation and active citizenship; (ii) the knowledge economy, competitiveness and choice; and (iii) lifelong learning, cultural expression and personal fulfilment.

Following the requirement of the Communications Act (2003) that it “promote media literacy”, Ofcom has defined media literacy as “the ability to access, understand and create communications in a variety of contexts”. As part of Ofcom’s research programme, this literature review has been commissioned to identify relevant academic research and research methods, barriers and enablers to media literacy, and key research gaps and priorities for future research.

Media literacy can be defined broadly or narrowly. In this review, we have used Ofcom’s general division of access, understanding, and creation, with some expansion of the terms. Access has been divided into four sections: basic access and ownership, navigational competences, control competence, and regulation competences. Understanding includes both comprehension and critique. And creation includes both interaction with media and creation of media by the public. The review is further divided into sections on broadcast media (including digital television) and on internet/mobile technologies, thereby drawing together research on “media literacy” and “information literacy”. In addition, case studies report on particular debates that illuminate the general review.

Access to media and media competences: summary of findings

- Frequent surveys chart the UK population’s access to a range of media goods, mostly in the home. A modest body of academic literature serves to interpret and contextualise the conditions of access to and use of broadcast media. Findings surveying the adult population regarding the adoption and use of analogue multichannel television and the VCR are consistent with research on the barriers to and inequalities in adoption of technological innovation and consumer goods more generally.
- Digital television is attracting a growing body of academic research, much of which has been critical of the design and content offered through enhanced services and most of which suggests low and uneven take-up by the audience. This is especially the case for interactive and complex uses, suggesting a majority audience “mindset” that still divides television (a non-interactive mass medium) from the internet (an interactive “pull” technology).
- Key barriers to access are demographic (age, gender, socio-economic status, disability), these in turn contributing to the material and symbolic barriers of finances, understanding, disposable time, and, also crucial, the production, content and design features of media technologies.
- In relation to the internet and mobile technologies, a great deal of research has focused on understanding the “digital divide” and its potential implications. A strength of this research has been to reveal the complexities of access, showing that content, context, and competences are all important components of “access”. A research gap exists when considering the skills relating to advanced access to internet and mobile content and services, the

public's ability to find appropriate content, and their ability to protect themselves and their children from content they do not wish to see.

Media competences: case studies

- The case study of search engines highlights the key skill of information literacy, and also how that skill may be affected by design and economic factors outside the individual's control.
- The case study of parental regulation of children's use of the internet shows that the family is a key driver of media literacy and that without adequate support parents find the process of guiding and protecting their children online both difficult and worrying.

Comprehension and critique of media: summary of findings

- Research on the audience's understanding of television content is divided between evidence pointing to a creative, sophisticated, "media-savvy" audience and evidence pointing to an often forgetful, confused, biased or inattentive audience low in critical literacy skills.
- A review of this huge and wide-ranging literature suggests that audiences understand, enjoy and trust many broadcast genres. It is less clear that audience trust is always associated with good understanding or critical judgment, especially in relation to the news. As channels of information proliferate, research suggests that many viewers are overwhelmed by multiple content sources that they find difficult to evaluate or compare.
- Much research raises concerns that audiences lack the more complex skills for a sufficiently discerning or critical understanding to deal with the highly sophisticated construction of media messages. Barriers to media literacy include the changing forms of media representation (especially hybrid genres that blur reality and drama) and the demographics of the audience (though their effect is contingent on different viewers' interests, knowledge and experience).
- Little is known about how well adults understand online content, but small-scale studies suggest that they are often unaware of the provenance of information and may lack the skills to take into account the point of view from which information is presented. A considerable gap exists in our knowledge of how people understand advertising and the economic processes of online content production.

Comprehension and critique: case studies

- The case study on the public understanding of health information suggests that advanced types of literacy, such as media and health literacy, demand complex judgements of trust and reliability, as well as the basic ability to read and write. It also indicates that creating media content can have a therapeutic value in a health context.
- The case study on the understanding of news highlights that the interaction between the producers of media content and the audience is key: media literacy does not rest solely with the public but also depends on the quality or characteristics of the content available. It also suggests an urgent need for investigation into the public's understanding of innovative online news sources such as blogs.¹

¹ A blog (weB LOG) is a journal or diary, often updated daily, available on the world wide web and maintained using software requiring little technical competence on the part of the 'blogger'.

Interacting with and creating media: summary of findings

- Creation is the most under-researched of the three major aspects of media literacy, both in its own right and in terms of interaction with the other two aspects of media literacy (access and understanding).
- While interaction with media has long been a feature of talk shows and competitions on radio and on television, there is no doubt that the opportunities to interact are changing dramatically with the introduction of digital television. Relatively little academic research addresses this interaction; what there is suggests that the public has not been very enthusiastic about these opportunities. However, many households now own video-cameras, web-cams and so forth, though their practices of content production have been little researched.
- Interacting with and creating digital content on the internet has been the focus of much popular and academic interest. Both e-government and e-health have been touted as ways in which digital interaction could change society. But early evidence suggests that these services mostly help those who are already advantaged (in education, class, income etc), and further evaluation of specific initiatives is needed.

Interaction and creation: case studies

- The case study on interacting with politics online examines how people are finding a voice outside traditional media and political channels by using the internet as a distribution mechanism. It also highlights how those initiatives easily become part of established political and commercial processes, suggesting that such efforts may widen the gap between the socially included and excluded.
- The case study on digital storytelling indicates the value to the public of opportunities for media creation, as well as key barriers, and it highlights the importance of enjoying media creation in facilitating media literacy.

Conclusions of the review

- Ofcom's definition of media literacy works well in guiding a reading of the academic literature. However, within the academy, definitional issues will continue to be debated. Ongoing debates include whether media literacy is most usefully thought of as a societal capacity ('a media literate society') or an individual competence or skill; whether and how research on "media literacy" and "information literacy" can productively be brought together; and the question of how expectations about the interests and skills of media viewer or user are inscribed within media practices (institutions, representations, design) so as to limit or facilitate opportunities for the citizen-consumer.
- In evaluating barriers and enablers, we note the paucity of research about how these factors interact. The key factors we have identified and discussed as barriers are:
 - age
 - socio-economic status (including education and income factors)
 - gender
 - disability
 - ethnicity

- proficiency in English.
- The key factors we have identified and discussed as enablers are:
 - design of technologies and contents
 - adult education opportunities
 - consumer information and awareness
 - perceived value of media goods and services
 - self-efficacy (skills and confidence in using new media technologies)
 - social networks to support in gaining and maintaining access
 - family composition (especially, having children in the household)
 - work involving the use of computers and new technologies
 - institutional stakeholders.
- Research on media literacy also faces a series of methodological challenges, from conceptual definitions through to evaluation of policy initiatives. The trend is towards multi-method, qualitative and quantitative research designs. It is recommended that future research considers conducting longitudinal surveys to chart change over time, and builds on the range of innovative, in-depth qualitative methods being developed in media research.
- In identifying key research gaps and priorities, we have divided them according to the framework of access, understanding and creation that has structured this review.
 - In **access and media competences**, the priorities are research into inequalities and excluded population segments; research into advanced forms and uses of content and services on digital, online and mobile media; and the public's ability to manage their personal media and communications environment.
 - In **understanding (comprehension and critique)**, more research is needed into understanding and critical evaluation of online content, particularly online news and political information. As advertising practices change, more research is needed into the adult population's awareness of promotional practices. Research is also needed into content "legibility" as a complement to levels of public literacy.
 - In **interaction and creation**, where least work has been conducted, research is needed into the range of experiences of content creation; its social benefits; and the relationship between creative activities and increased critical understanding of media production.
- Priorities that span the dimensions of media literacy include research into consumer choice within media (and constraints on this); the range, depth and sophistication of media uses in everyday contexts; and the skills and requirements or standards that underlie different specifications or levels of media literacy. Also, we need more evaluations of media literacy programmes and initiatives in order to assess the effectiveness of such interventions.
- Research must also investigate the linkage between media and media literacy: how much do specific barriers and enablers relate to particular texts or technologies? How far is media literacy medium-specific?
- Finally, we note that the media themselves can either facilitate or undermine media literacy, and that media providers have a key role to play.

Section 2

Introduction

With the growing importance of media, information and communications in society, media literacy can be said to serve three key purposes, contributing to (i) democracy, participation and active citizenship; (ii) the knowledge economy, competitiveness and choice; and (iii) lifelong learning, cultural expression and personal fulfilment.

Following the requirement of the Communications Act (2003) that it “promote media literacy”, Ofcom has defined media literacy as “the ability to access, understand and create communications in a variety of contexts”. As part of Ofcom’s research programme, this literature review has been commissioned to identify relevant academic research and research methods, barriers and enablers to media literacy, and key research gaps and priorities for future research.

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The context

Section 11 of the Communications Act (2003) establishes a role for Ofcom, the communications industry regulator, to “promote media literacy” among the population of the UK. Why is media literacy important? According to Ofcom, media literacy supports the public – as citizens and as consumers - in taking opportunities, managing expectations and protecting themselves from the risks that are part of a media-saturated world:

“Through confident use of communications technologies people will gain a better understanding of the world around them and be better able to engage with it.” (Ofcom, 2004b: paragraph 3)

Simple definitions of media literacy are much debated in the academic literature, mainly because central to any discussion of media literacy is the question of the purposes of media literacy. Who and what is media literacy for? Generally speaking, the academic literature identifies three broad purposes to which media literacy makes a contribution. These are evident in driving the policy debates currently concerned with media literacy:

- ***Democracy, participation and active citizenship.*** In a democratic society, a media-literate individual is more able to gain an informed opinion on matters of the day, and to be able to express their opinion individually and collectively in public, civic and political domains. A media-literate society would thus support a sophisticated, critical and inclusive public sphere.
- ***Knowledge economy, competitiveness and choice.*** In a market economy increasingly based on information, often in a complex and mediated form, a

media-literate individual is likely to have more to offer and so achieve at a higher level in the workplace, and a media-literate society would be innovative and competitive, sustaining a rich array of choices for the consumer.²

- *Lifelong learning, cultural expression and personal fulfilment.* Since our heavily mediated symbolic environment informs and frames the choices, values and knowledge that give significance to everyday life, media literacy contributes to the critical and expressive skills that support a full and meaningful life, and to an informed, creative and ethical society.

Questions for the literature review

Notwithstanding widespread speculation that the public has become increasingly “media-savvy”, it remains unclear how far rigorous evidence supports or qualifies this claim. In order to inform the development of the media literacy research agenda – including its questions, priorities and methods for research - this review of the academic literature addresses the following questions:

- What do we **know** about media literacy, and what are the **gaps** in our knowledge?
- What are the main **barriers** to, and **enablers** of, media literacy?
- What **innovative methods** have been, and can be, used to investigate media literacy?
- What key areas should be **prioritised** in future research?

The scope of the literature review

To address these questions is to encompass a potentially vast range of research literature. This literature review is a “purposive review”, focussed according to particular priorities, as specified to the authors by Ofcom’s media literacy team:

- It is concerned with research on **adults**, being complementary to a parallel review concerned with children (Buckingham & others, 2005). Paradoxically, while the literature explicitly concerned with “media literacy” is very small for adults by comparison with the literature on children (Dennis, 2004a), the scope of the review is considerable insofar as the fields of media, communication and information studies are implicitly concerned with media literacy.
- It concentrates on **empirical** evidence in the academic literature (rather than that produced by commercial or government bodies), including the identification of gaps in the evidence base, rather than on the many conceptual debates over the meaning or nature of “media literacy”, valuable though these debates are.³ It should be noted that the various authors cited may follow different definitions of media literacy.

² Notably, “the key [to greater economic stability] is to build an economy based on knowledge, on the alliance between technology and human capital, so that we are continually developing more high value-added goods and services” (Tony Blair, November 2002). Quoted in Office of the e-Envoy, UK Online Annual Report 2003: www.e-envoy.gov.uk. The relation between creative skills and the creative industries is also being explored (DCMS, 2001a).

³ We would point the reader to historical and contemporary debates about print literacy (Kintgen, 1988; Luke, 1989; OECD, 2000), to the broad literature on ‘reading the world’ (Freire, 1987; Hirsch, 1987; Street, 1995), and to the fast-growing field of digital- or cyber-literacy (Aitchison & Lewis, 2003; Crystal, 2001; Darley, 2000; Fornäs, Klein, Ladendorf, Sunden, & Svenigsson, 2002; Gurak, 2001; Isaacs & Walendowski, 2002; Kellner, 2002; Kress, 2003; Kress & van Leeuwen, 1996; Kubey, 1997; Messaris, 1993; Silverstone, 2004; Snyder, 1998; Tyner, 1998; Warnick, 2002). For our present purposes, we

- Since Ofcom's remit includes the range of **electronic media**, media literacy is currently being discussed in policy terms mainly in relation to broadcasting and information and communication technologies, with less attention to the convergence among television, film and the press with the internet.⁴ In the present review, we include research on television, including the new literature on digital television, and on the internet, together with the growing literature on mobile phones.
- **Which media** are included is also guided by the uneven attention paid to different media by the academy. Little work addresses radio and radio audiences (although see Crisell, 1994; Tulloch & Chapman, 1992; Verwey, 1990). For reasons of space and focus, we have not included the literature on film audiences (Bondebjerg, 1994; Branigan, 1992; Calder & Sheridan, 1985; Kluge, 1981-2; Stacey, 1994; Williams, 1995), nor the burgeoning literature on computer and video games (Berger, 2002; Gee, 2003; Turkle, 1995).
- Lastly, this review primarily focuses on **recent research conducted in the UK**, referring to an older or international literature only when such research has proved particularly influential or informative for the UK situation.⁵

Conducting the literature review

In preparing this review, we have sought to use as wide a range of methods as possible, given practical constraints of time and resources:

- Updating and extending the initial and recent review conducted by two of the present authors and commissioned by several funders including two of Ofcom's legacy regulators (Livingstone & Thumim, 2003).⁶
- A systematic review of recent academic articles and books, including searches using the catalogue of the British Library of Political and Economic Science and the ISI Web of Science bibliographic database. A broad range of disciplines were searched for relevant literature, including media and communication studies, education, psychology, information and library science and cultural studies.
- A half-day seminar, hosted by Ofcom with academic colleagues in which interim findings were presented and views solicited, together with email consultations with international academics on several continents variously known for their work in media literacy.⁷

resist broadening media literacy so far as to encompass all means of interpreting knowledge about the world, for this loses the focus – crucial in policy terms - on media and communications in particular. We would also express caution about the many and exciting claims about radical new literacies associated with new media technologies, particularly the internet, since at present these have been little examined empirically.

⁴ As specified in Annex B of Ofcom's Media Literacy Statement, the reference in section 11 of the Communications Act to 'electronic media' means that which is (i) 'broadcast so as to be available for reception by members of the public or of a section of the public' or (ii) 'distributed by means of an electronic communications network to members of the public or of a section of the public'.

⁵ It should be noted that research on the question of media literacy in other countries is also limited. Furthermore, international research is not always relevant. Campaigns for media literacy in the USA for example, are a response to a very different media content and history. Even where countries have similar media systems to the UK, contextual differences mean that findings may not be applicable. In short, international research findings are a useful source of comparison and can suggest directions for UK research, but they do not explain the UK situation.

⁶ See <http://www.ofcom.org.uk/static/archive/bsc/pdfs/research/litass.pdf>.

⁷ Thanks to the academics and others consulted, including Amy Aidman, Pat Aufderheide, Cary Bazalgette, Gail Bradbrook, Pam Briggs, Bobby Eisenstock, Jonathan Freeman, Margaret Gallagher,

Defining media literacy

In the academic literature that encompasses “electronic media”, two distinct bodies of research exist. One body of research covers traditional broadcast media (television and radio, and to a lesser extent film) and is called **media literacy** in the literature. The other comes from a perspective on information retrieval and computer training, currently being called **information literacy**, and deals primarily with computers and the internet. The literatures concerned with mobile phones and digital television are both very recent and draw on both traditions.

Definitions of media literacy

When a single term is used across diverse domains, definitional differences are bound to arise. In reviewing recent research on media literacy, Potter cites over twenty definitions (Potter, 2004). In a milestone conference held in the USA in 1992 produced a clear and concise definition of media literacy as the ability “to access, analyse, evaluate and communicate messages in a variety of forms”.⁸

Following its 2004 public consultation Ofcom adopted the following definition of media literacy (*Ofcom's strategy and priorities for the promotion of media literacy: A statement*, 2004):⁹

“Media literacy is the ability to access, understand and create communications in a variety of contexts”

In the Communications Act (2003), Ofcom’s responsibilities regarding the responsibility to promote media literacy were formally stated in terms of the development of public understanding and awareness of:

- The nature and characteristics of material published by electronic media;
- The process by which materials are selected and made available;
- The systems by which access to materials is or can be regulated;
- The systems by which the public may control what is received.

Further, Ofcom is responsible for the development of more effective and easier to use systems of regulation and control of media content as well as the promotion and use of those systems. More work is needed to specify in detail the skills and expectations that ‘public understanding and awareness’ includes, together with the standards or levels of understanding and awareness that is considered desirable.¹⁰

Ellen Helsper, Annette Hill, Amy Jordan, Bob Kubey, Dale Kunkel, Dafna Lemish, Peter Lewis, Kathryn Montgomery, Andy Pratt, Elizabeth Sillence, Midori Suzuki, and to the attendees at the Ofcom Seminar on Media Literacy held on 2 November 2004. This followed a series of earlier seminars debating media literacy (Voice of the Listener & Viewer, 2003).

⁸ National Leadership Conference on Media Literacy (Aufderheide, 1993); special issue of the *Journal of Communication* (Christ & Potter, 1998). Many definitions concur with this, though differences remain over whether media literacy should be thought of as an individual accomplishment or a social and cultural practice, whether one should place more or less emphasis on criticising the media, whether media literacy is better linked to education or to citizenship, and so forth (see also Buckingham, 1993; Hobbs, 1998; Livingstone, 2003, 2004).

⁹ Compared with Aufderheide’s definition, Ofcom’s includes both analysis and evaluation in the term “understanding” and uses the word “create” to emphasise the personal and creative dimension of communication.

¹⁰ See, for example, the Department for Media, Culture and Sport’s specification of a series of *critical viewing skills* and *technological competences* as a foundation of media literacy (DCMS, 2001b).

Definitions of information literacy

In the context of computers and interactive media, a parallel series of definitions have emerged for information literacy. A UNESCO-funded multinational gathering of experts organised by the US National Commission on Library and Information Science and National Forum on Information Literacy defined information literacy thus:

“Information literacy encompasses knowledge of one’s information concerns and needs, and the ability to identify, locate, evaluate, organize and effectively create, use and communicate information to address issues and problems at hand.” (*The Prague declaration: "Towards an information literate society"*, 2003)¹¹

Unlike the work in media literacy, practitioners in information science have worked to develop *literacy standards* to help assess the levels of competence, typically for adult learners. For example, the Association of College and Research Libraries (ACRL) in the USA has developed a series of standards, performance indicators and outcomes for information literacy in higher education (*Information literacy standards for higher education*, 2000). Each level, listed below, is associated with performance indicators and outcomes and specifies that the information literate student should be able to:

- Level I. Determine the nature and extent of the information needed.
- Level II. Access needed information effectively and efficiently.
- Level III. Evaluate information and its sources critically and incorporates selected information into his or her knowledge base and value system.
- Level IV. Use information effectively, individually or as a member of a group, to accomplish a specific purpose.
- Level V. Understand many of the economic, legal, and social issues surrounding the use of information and accesses and uses information ethically and legally.

In the UK, the Society of College, National and University Libraries (SCONUL) has formulated an alternative model based on “seven pillars” of information literacy (SCONUL Advisory Committee on Information Literacy, 1999). In this model, information literacy consists of the following skills, in each of which performance can be graded at levels from novice to advanced beginner, competent, proficient or expert:

- Recognise information needs
- Distinguish ways of addressing gaps
- Construct strategies for locating information
- Locate and access information
- Compare and evaluate information
- Organise, apply and communicate information
- Synthesise and create information

¹¹ The Prague declaration also defined information literacy as “a prerequisite for participating effectively in the Information Society” and “part of the basic human right of life long learning.” The UK’s Department for Education and Skills makes a similar claim, arguing that “Nowhere is the importance of sophisticated ICT skills clearer than in the recent DfES White Paper ‘21st Century Skills, Realising Our Potential’. It makes a commitment to help adults gain ICT skills as a third skill for life alongside literacy and numeracy. DfES’ aim is to enable all adults to have the ICT skills they need to learn effectively online, become active citizens in the information age and, with 62% of adults stating that ICT skills are essential to their current or future job, contribute productively to the economy.” (Office of the e-Envoy, 2004: 11).

This model differs from the ACRL model by including basic library skills and IT skills as foundational elements, and by stressing strategies for the location of information as well as the creative dimension of information literacy.

Drawing together information literacy and media literacy

While media literacy and information literacy have developed as separate traditions, they share many of the same values. In general, the “media literacy” tradition stresses the understanding, comprehension, critique and creation of media materials, whereas the “information literacy” tradition stresses the identification, location, evaluation and use of media materials. Metaphorically, we might say that “media literacy” sees media as a lens through which to view the world and express oneself, while “information literacy” sees information as a tool with which to act on the world. Both perspectives are relevant for developing media literacy policy.

Section 3

Basic media access and ownership

The theme of access to media includes not simply ownership of the tools of access (television, telephone, or computer) and the assessment of the amount of time spent with these media technologies but also a wider range of competences. We have divided the competences into three areas:

- Basic functional or *navigational* competences (knowledge, for example, of how to use text messaging and message retrieval on mobile phones);
- Competence in *controlling* the technology (including advanced usage such as searching skills and commercial transactions);
- Competence in *regulating* the technology (including issues such as protecting privacy, getting help when necessary, and filtering inappropriate conduct).

Below, we review the literature on the levels of media access (as defined above) of the adult population in Britain, concentrating first on the traditional broadcast media and then reviewing the literature with reference to internet and mobile technologies before synthesising the two perspectives.

Broadcast

History has repeatedly shown that new technologies generally supplement older ones, despite popular expectations that they will replace them. The result is an increasingly complex domestic media environment (Bolter & Grusin, 1999; Flichy, 2002; Klopfenstein, 1989). As innovations in broadcast media reach the mass market (Rogers, 1995), audience skills are acquired incrementally and require continual updating. These skills include selecting appropriate goods and services and, once in the home, using the increasingly complex range of options and facilities in an effective manner. Many of these skills have been little researched directly but, despite the imperfect relation between adoption and literacy, must generally be inferred from adoption figures. It is likely that low adoption impedes and is impeded by levels of literacy, while increasing adoption is likely to enable and be enabled by media literacy, at least in relation to the dimension of access.

Frequent surveys chart the UK population's access to a range of media goods, mostly in the home. Much of this is conducted by Government or commercial bodies (e.g. *Social Trends*, *Expenditure and Food Survey*, BMRB's *TGI* and Ofcom) and charts statistics on adoption together with opinion surveys on use of and dis/satisfaction with the technologies and contents available. A more modest body of academic literature serves to interpret and contextualise the conditions of access to and use of the changing array of broadcast media in recent years. From this, it is generally concluded that three types of resource - material, social and symbolic - contextualise media use within the home, each being socially stratified and so each affecting social inclusion and exclusion (Murdock, Hartmann, & Gray, 1995).

Qualitative research on family dynamics within households has sought to understand the domestic context of access and use of broadcast media, uncovering the issues of gender, generation and class. These influence, albeit in complex and often context-dependent ways, who in the household gains access to particular media and how these media are then used, discussed and managed in the family's domestic spaces and routines (Gillespie, 1995; Livingstone, 2002; Morley, 1986; Silverstone & Hirsch, 1992).

Drawing on this and related literatures, research has sought to understand the barriers and enablers to effective use of new broadcasting media in accordance with citizen-consumer expectations, this increasingly focusing on the range and depth or sophistication of use rather than “mere access”. For the changing media environment has

“profound consequences not just for the fortunes of the corporations involved, but also for the relationship of producer to consumer, the power and control of the consumer ... [and] the very nature of leisure” (Mackay, 1995: 311).

Moreover, as broadcast media become increasingly diversified, globalised and personalised, and as they provide a platform for information, shopping, communication and participation, the importance of consumers’ and citizens’ skills in accessing them effectively now extends far beyond the domain of leisure (Couldry, 2000; Mansell, 2004). Hence:

“accessibility of public electronic communications is more than ever before a precondition for participation in social, economic and civic activity ... [raising] questions of rights and entitlements to the opportunity to acquire capabilities for effectively using the electronic spaces created by the new media” (Sourbati, 2004: 587)

Yet perhaps problematically, since broadcast media are popularly regarded as part of everyday domestic leisure, their media literacy requirements may go unrecognised (beyond the frustrations commonly experienced during use). Arguably, media organisations themselves play a role in constructing digital television for consumers – disseminating a sense of inevitable technological progress while ignoring “the negative or exclusionary consequences of digital television” (Weber & Evans, 2002: 450). Research has, however, sought to identify these consequences, analysing them - as with the “digital divide” in information and communication technologies - in terms of social and “digital” exclusion (see Bradbrook & Fisher, 2004).

Domestic ownership

While patterns of diffusion through the market differ by medium, the general picture of differences (or inequalities) among adults by social class, gender, age and region is repeated over and over again – for the video cassette recorder, for cable and satellite television (Mackay, 1995) and now for digital television, where low take-up, even resistance, among some population segments is evident (Born, 2003; Collins, 2002). Socio-economic status continues to stratify the audience, with terrestrial-only homes skewed towards C2DE homes (Ofcom, 2004a). Similarly, in the USA, cable access – as for many other media - remains stratified by income and ethnicity (Smith-Shomade, 2004).

The recent take-up of digital television in the UK has been slower than many commentators expected, though both adoption and use continue to rise. Key enablers of and barriers to the take-up of digital television have been identified as technology (both hardware manufacturers and software developers), content producers and government policy (Noam, Groebel, & Gerbarg, 2004; Varan & Morrison, 2003).

Internet and mobile phone

Access to information and communication technologies (ICT) has been a key focus of debate in recent years. On the premise that “exclusion from these [internet-mediated economic, social, political, cultural] networks is one of the most damaging

forms of exclusion in our economy and in our culture” (Castells, 2002: 3), concerns over the gap between the digital (or internet) haves and have-nots have stimulated much debate and research. This “digital divide” is conceived on all levels from the global, where it is primarily an economic phenomenon that distinguishes developed from developing countries, to the national level, where factors of geography, socio-economic status and ethnicity prove crucial, and the domestic level, where gender and generation stratify contexts of access and use.

These concerns have also stimulated a range of policy initiatives and interventions seeking to enhance access to the internet especially for a range of potentially or actually excluded population segments, together with evaluations of these interventions (Bradbrook & Fisher, 2004; Phipps, 2000). In the UK as elsewhere, a series of Government targets to get both the population and government services online have focused attention on those who were “falling through the net” (Compaine, 2001; Norris, 2001).

Is the “digital divide” closing? Research suggests that this may be too simplistic a question, and that the goalposts of what constitutes acceptable “access” are continually shifting. Indeed, increasing internet access seems to maintain rather than eliminate distinctions between the relatively more and less advantaged. It has become widely recognised that a more complex view, going beyond a simple dichotomy of haves and have-nots, is therefore required (Liff, 2001; Selwyn, 2004). As the platforms for internet access (computer, mobile phone, digital television, and a growing range of personal devices), quality of internet access (dial-up, broadband) and the range of locations to go online all diversify, the question increasingly becomes, “access where, how and to what?”

Following a business model of continual expansion, updating and specialisation, technological innovation is a moving target, requiring of the user a recurrent rather than one-off investment (Golding, 2000) in which, once again, social stratification matters. In one substantial international review, the author concludes that increasing internet penetration serves to exacerbate rather than reduce inequalities, precisely because the internet is unlike simple media and consumer goods in which a more-or-less stable technology diffuses from the early adopters to the mass market (Norris 2001). For the internet, the “chameleon-like capacity of digital technologies to morph, converge, and reappear in different guises” (Norris, 2001: 17) means that “the” digital divide is better re-conceptualised as a continuum. Instead of a divide (haves vs have nots), research seeks to map a continuum with “degrees of marginality” (Murdock, 2002: 387), or to see the digital divide as plural, resulting in a number of different divides.

Domestic ownership of media goods

A strong series of reports assesses the levels of ownership and usage of the internet and mobile phones. British surveys include the British Social Attitudes annual survey (BSA), surveys from the Office of National Statistics, and research conducted by Ofcom. In addition some European-wide reports such as the European Commission’s Eurobarometer (*Eurobarometer 59.2*, 2003), and E-Living, a project to assess the impact of information and communication access on home and work life across Europe (Anderson et al., 2004) also includes British data.

For example, using a national random probability survey, the 2003 BSA finds that home access is a key enabler of internet usage, while age, education, income, social class and, to a much lesser extent, gender, represent barriers to use. Of those who don’t currently use the internet, a majority (51%) say they have “no interest” in it. 28% cite a lack of skill, and 29% cite a lack of funds either for a computer or an internet

connection as a reason. Overall, 37% of non-users thought it likely that they would use the internet in the future (Bromley, 2004).

In the last ten years, mobile phone ownership has mushroomed from virtually nothing to encompass circa 75% of UK adults, according to Ofcom figures for 2003 (Ofcom, 2004d). In 1999, just four years earlier, the figure stood at 33% of UK adults (Ofcom, 2003). This rapid growth raises new questions about how mobiles are used (or under-used) in relation to both the opportunities and the risks they are associated with.¹² Research is also needed to establish whether “mobile phone literacy” involves skills that can be transferred from one type of media literacy to another.

One study cautions against assuming that all types of “access” or “use” are the same, suggesting that “issues of time, costs, quality of the technology and the environment in which it is used, as well as more ‘qualitative’ concerns of privacy and ‘ease of use’ are all crucial mediating factors in people’s access to ICT” (Selwyn, 2004). For example, the iSociety has suggested that while initial costs of procuring mobile phones are not an issue, the management of costs and the perception of the risk of high costs may inhibit use of both voice and advanced services (Crabtree, Nathan, & Roberts, 2003). Similarly, perceptions of risk may influence consumer purchase choices: for the mobile phone, fears over children’s safety and reassurance in case of emergency may increase the likelihood of purchasing phones, particularly among women, while concerns over health risks may decrease the likelihood of purchase or use.

For both mobile technology and the internet, more research is needed that asks:

“What is the nature and extent of the use of technologies facilitated by this access? Under what circumstances does meaningful use/engagement arise? What factors contribute to people continuing to be users of ICT and others to revert to becoming non-users?”
(Selwyn, 2004)

After all, to have a computer in the home may be a key enabler for advanced access. But, as one study (Murdock, 2002a) points out, this demands a wide *range* of resources. First there are material resources – income of course, but also importantly free time and available space (especially difficult for many low-income families). Second, social resources are crucial, including someone to call on when the computer breaks or you need advice. Finally, the cultural resource of literacy, as we argue throughout, plays a major role. Taken together, this means that

“affluent users, who have been able to acquire Internet access early, enjoy cumulative rather than one-off advantages since the system has been organised around their needs and demands, making it more difficult for those arriving later to change its basic principles and structures.” (Murdock, 2002a)

With such high resource demands, the public, particularly those with limited resources, need a good reason to access the Internet. Thus the literature leads us to the *purpose* of access as a key element. A US study of low-income populations (Lazarus & Mora, 2000) identifies the content of the Web as a key issue, suggesting that low-income adults want: practical information focusing on a local community (such as jobs listings, local housing listings, community information); information

¹² See the useful literature review from the COST269 project on the User aspects of ICTs at www.cost269.org; see also the archive maintained by the Digital Media Resource Centre at University of Sussex (<http://www.surrey.ac.uk/dwrc/Publications/htm>).

which is presented at a basic literacy level; content for non-English speakers, and cultural information.

A review of 1,000 websites described by an expert panel as being “among the best” revealed that local information was rarely available, particularly with reference to entry-level jobs; limited literacy content was designed for young children; multilingual sites originated in different countries and were irrelevant to their needs; and local cultural information was “insignificant” (Lazarus & Mora, 2000). Such a study could usefully be updated and conducted in the UK in order to guide improvements to the quality of information online.

The quality of online information also matters given the finding that some people find the internet “of no interest” (Dutton & Shepherd, 2004). If online information is of poor quality, their lack of interest may be rational; yet it might be altered if the quality of information improved. On the other hand, using the internet may simply not be appropriate for some people (Foley, Alfonso, Brown, & Fisher, 2003; Selwyn, 2003), or they may wish to undertake activities in a more personally meaningful way, and not be “slaves to the technology” (Durieux, 2003).

Section 4

Navigating – basic media competences

Navigational competences are related to access; and in general refer to the basic competences needed to discover the core features of the media technology. For example, such skills might include both theoretical and practical knowledge of how to open a web page, click a link, or scroll through an online page of text, or how to change channels on a television.

Broadcast

Research suggests that only for the latest innovations does the public attend to interface design; for familiar media, people “see through” to the content. So too has research, for until recently, academic research into adult use of television did not examine technical competence or “navigation” and “control” skills, these being taken as given.

Like television, the VCR has been thoroughly integrated in daily life for some time (Lin, 1994; Tydeman & Kelm, 1986), with the DVD more recently following. Indeed, there are some creative, personalised ways of using the VCR, together with some transferable skills being applied from the computer (Gauntlett & Hill, 1999; Jenkins, 1992). Nonetheless, it is probably still the case that many cannot easily programme the VCR or use the full services of Teletext (Miles & Thomas, 1995). How many digital television viewers manage to use their electronic programme guide or interactive services effectively needs continued research. Early indications are that usability testing raises many as-yet-unresolved issues, though perceptions of ease of use appear to be critical (Lessiter, Freeman, David, & Dumbreck, 2003). A variety of barriers remain, including those faced by visually impaired or elderly viewers (Carmichael, Petrie, Hamilton, & Freeman, 2003; Freeman & Lessiter, 2001).

Internet and mobile phone

Navigational competences include the ability to use essential features of the internet. With respect to computer-accessible media, these have often been considered under the rubric of “computer literacy,” which corresponds to SCONUL’s foundational level of IT skills. However, there exists a clear distinction between “computer literacy” or IT skills and the skills implied in information literacy (Brown, Murphy, & Nanny, 2003; Pask & Saunders, 2004). This is reflected by the inclusion in SCONUL’s model of a foundational level of library skills (based on traditional information search and evaluation skills) as well as ICT skills (based on technology-specific requirements).

Possibly the best assessment of foundational ICT skills for adults comes from the Department for Education and Skills (DFES), which tested basic ICT skills along with traditional literacy and numeracy skills in their *Skills for Life* survey (Williams, Clemens, Oleinikova, & Tarvin, 2003). This large-scale survey covered the English adult population aged between 16-65. The *Skills for Life* authors defined ICT skills in two levels. Level 1 includes an understanding of basic terminology of ICT’s; an ability to use most of the standard features of word processors, spreadsheets, etc; a knowledge of different formats used by different programs and the ability to save data; the ability to copy and paste and standardise formatting. Level 2 includes an additional ability to search for, collect, and assess information using search engines, databases, etc; and the ability to make better use of ICT by actively using tools

provided in the programs. This was then measured by a first test assessing awareness and a second test assessing practical competences through the completion of tasks. The results are shown as Table 1, below.

| | Awareness % of 16-65 year olds | Practical skills % of 16-65 year olds |
|-----------------------------|---|--|
| Entry level or below | 25% | 53% |
| Level 1 | 25% | 38%* |
| Level 2 | 50% | 9%* |

Base: all respondents with ICT level (4,464)

*Tentative division between Level 1 and 2

Table 1: DFES *Skills for Life* ICT skills levels (J. Williams et al., 2003)

In addition to the DFES measures, several standardised measures of computer literacy have been proposed. (Bradlow, Hoch, & Hutchinson, 2002; Richter, Naumann, & Groeben, 2001; Turner, Sweany, & Husman, 2000). On the other hand, basic library skills, the other set of foundational skills in the SCONUL model, have not been adequately assessed in the adult population.

Research on mobile phones suggests that not all users of mobile phones use all phone services. A MORI poll found 63% of Britons used text messaging services (cited in Crabtree et al., 2003). Use of video features is more restricted: only 7% of the UK population surveyed by Oftel used photo messages; only 2% used video clips; and only 1% used video calls (Oftel, 2003). But whether this is due to a lack of competence on the part of users, the relatively recent introduction of the features, or a lack of relevance of the features to users' needs remains unclear. Recent evidence from the United States suggests that "digital divide" issues may be quite different for mobile phones and the internet (Rice & Katz, 2003). However the issue of mobile competences, skills, or literacies merits more research.

Section 5

Controlling – advanced media competences

Competences in controlling media are more advanced than navigational competences, in that they involve a mastery of the more advanced features of the media technology. For example, in broadcast media it would involve both a theoretical and practical knowledge of how to access interactive services online. In online media, it might involve the ability to search effectively for content, rather than simply clicking links. On a phone, it might involve the ability to conduct mobile calls in a socially appropriate time and place.

Broadcast

Ofcom's *The Communications Market* (2004) finds that 43% have used interactive television services. For interactive television as for other interactive media (e.g. the internet), younger people are more likely to have used the services, suggesting age to be a barrier (as is also the case for cable and satellite viewing). Furthermore 68% of all digital viewers had interacted with advertisements (i.e. pressed the red button), though this remains biased towards the early adopters (younger, male, middle-class) (BMRB, 2004; Freeman & Lessiter, 2001).

Of the various enhanced features offered on digital television, far fewer appear to have used the interactive features to respond to programmes (30%) or to purchase products or services (1 in 5) (Atkin, Neuendorf, & et al., 2003; Ha & Chan-Olmsted, 2002; Ofcom, 2004a). Similarly, research suggests that only a minority access the extra features (interactivity, fact sheets, help lines, etc) associated with factual programmes (Hill, forthcoming). Whereas men are still a little more likely to interact with the internet, it is women who make slightly greater use of interactive features on digital television. One study finds UK audiences to be "conservative" in preferring to think of, and use, the television and the computer differently (Theodoropolou, 2003): this suggests interactive skills are being explored more on the computer/internet than via interactive services on digital television (Collins, 2002). Consequently, while television's wider penetration and familiarity could give it an advantage over the internet in relation to the electronic delivery of public services, its limited interactivity and the "relearning" that viewers will need to undergo to move, without sizeable exceptions, towards a different paradigm of television use, is likely to limit its initial applications and adoption (Gunter, 2004).

American research on some of the ambitious hopes for broadcasting identifies familiar barriers. In discussing educational resources available on US cable television for lifelong learners as well as children, one study identifies time constraints, information on available content, skills and training, and control over materials accessed as key barriers (Dirr, 2001). There are also doubts that the growth of narrow-cast television channels in the USA enhances democratic opportunities for minorities via providing public venues for self-representation. Some research suggests that channel multiplication has quite the opposite effect, not because of the lack of skills among minority groups but for reasons of political economy (market competition, advertising revenue, consolidation of ownership, etc) (Smith-Shomade, 2004). On the other hand, some UK research suggests that multi-channel and multilingual audiences, by contrast with mono-cultural and monolingual audiences,

adopt a more diverse, reflexive and critical approach to – in this case – the news (Michalski, Preston, Gillespie, & Cheesman, 2002).

Internet and mobile phone

If basic literacy is equated with basic computer skills, then advanced competences are related to the ability to make those media perform. These could potentially include a range of competences such as the ability to search effectively (see Case study: Search Engines) or to be able to complete a transaction online. Academic research has little examined these advanced access skills, and even their identification is a research need. Research in this area also draws attention to the need for sites themselves to be “legible” as well as for users to be literate.

One advanced skill is the ability to share content through so-called peer-to-peer exchange services (Agre, 2003). According to service Cyberatlas, 19% of Americans over age 12 had downloaded music files from file-sharing systems (cited in Lee, 2003a). These systems also provide video, audio books, pictures, and software: in short, they are a major distribution mechanism for media content which is often created in non-digital formats. The BSA survey found that 16% of British internet users had used the internet to download music through some system (Bromley, 2004). This usage was strongly stratified by age, with 42% of the 18-24 year-old users having downloaded music versus only 1% of those 65 or older. Other social divisions were also echoed: education (12% of degree educated versus 8% of no education); income (20% of highest quartile income households versus 11% of lowest quartile); and gender (19% of men versus 13% of women). An interesting reversal, however, is that 21% of those in semi-routine or routine occupations had downloaded music versus 14% of managers and professionals (Bromley, 2004). A USA study (of students) found that key factors in encouraging peer-to-peer file-sharing include the absence of a fee and the availability of a large number of files, even if this means favouring illegal sites (Lee, 2003b).

Another example of an advanced skill might be to complete some type of transaction. Again the BSA survey found that 43% of internet users had used the internet for shopping, and 37% had used it for banking and bill paying. According to the BSA survey, high education, high income, managerial/professional occupations and male sex are more strongly associated with online shopping (Bromley, 2004). In qualitative research undertaken in London, however, socially excluded residents expressed the views that shopping and banking were not very relevant for them (Foley et al., 2003). Once again, the barrier may be less a question of skills than of content.

Research in the human-computer interaction (HCI) tradition also indicate that user interface design can improve or inhibit effective use of online content (Nielsen, 2000). For example, websites designed for the fixed internet are not always readily accessible using mobile phone screens and keypads (Chae & Kim, 2004; Gutierrez, Barchino, & de Mesa, 2003; Ramsay, 2001; Venkatesh, Ramesh, & Massey, 2003). Further, usability is also often linked to *accessibility*, or the ability of the website to function for a range of users including those with disabilities (Helsper, 2004). A range of organisations have drawn up accessibility guidelines, the mostly frequently cited of which are the Web Accessibility Initiative standards published by the World-Wide Web Consortium (Chisolm, Vanderheiden, & Jacobs, 1999). The BBC reviewed how BBCi met the needs of disabled users, and this review contains a helpful summary of different guideline schemes (Robertson, Shelat, Stewart, Travis, & Tynan, 2002). While there have been some attempts to assess accessibility in particular contexts (Sloan, Gregor, Booth, & Gibson, 2002), there are no wide-ranging UK studies.

There are growing attempts to develop reliable measurement scales to assess levels of internet skills, generally named internet self-efficacy. Skills measured include, for example, the ability to use the internet to gather data, to explain what has gone wrong with a task, to fix internet problems, etc. Since these scales rely on self-reporting, it is recognised that they measure a combination of confidence in using the internet and specific skills. In general, those people with higher self-efficacy have a greater likelihood of using the internet (Eastin and LaRose, 2000), are more likely to complete online tasks successfully (Torkzadeh & Van Dyke, 2002) and are more likely to pass a web-based exam (Wang & Newlin, 2002).

While discussion of “skills” normally focuses on competences, mobile phones raise questions regarding the social aspects of technology (Ling, 2004). The theory of the “domestication” of media suggests that new media have the potential to disrupt earlier patterns of everyday life and even to re-order the ways in which we use time and space (Silverstone, 1994), and mobile phones in particular are said to have this effect, promoting a new, “nomadic” “culture of mobility”(Urry, 1999). Research on these issues has been reviewed on a European basis (Haddon et al., 2003), although competences are not directly addressed. Much public discussion has focused on the etiquette surrounding mobile phone calls (Moisio, 2003; Monk, Carroll, Parker, & Blythe, 2004). Since telephone conversations have traditionally been considered private, bringing mobile phones into public spaces causes social tensions, which are resolved differently in different European countries (Lasen, 2004). Recent research into teenage use has found that mobiles are quickly becoming a medium of social exchange (Taylor & Harper, 2002). Thus social competences may play a larger role in certain media forms and uses than others.

Mobiles highlight the fact that new media are integrated into a “media ecology”: in other words, their interaction with other forms of media is an important feature. The mobile phone is a key case in point: it is currently being used successfully to enable interaction with television, through voting or SMS TV (Galik, 2002). Mobiles now include still cameras, full motion video cameras, and internet connections, as well as being delivery devices for other media such as radio. Research into these areas is sparse. The question becomes, at what point do “mobile” competences and “mobile” literacy overlap with other media literacy skills, as the technologies themselves increasingly converge. Little research, for example, has been done into how people recognise advertising on mobile phones, although early indications are that they are hostile to it (Tsang, Ho, & Liang, 2004).

Case study: search engines: controlling online information

Context

If there are only three primary ways of getting to a website, that is, following a link, typing a URL, and searching, then people's ability to access information and services online will be restricted by their competences in these three skills. Link-clicking is limited to the collections available on the users' home page (usually the default home page); whereas direct URL entry seems to be suitable only for those who already have some knowledge of the subject, in addition to knowledge of the web (Jenkins, Corritore, & Wiedenbeck, 2003). Thus, research has highlighted the role of the search engine as a digital gatekeeper, suggesting that competence in search engine usage is a strong element of people's ability to find information and services online (Hargittai, 2000, 2004).

It should be noted that most available research, including that cited here, has not been conducted in the UK and may, given the pace of change, be already dated.

Findings

- Academic studies indicate that it seems that "the general user population lack the basics of surfing the Web" (Hargittai, 2002). According to one UK study, user difficulties include not knowing how to use the Back button, using only links and browser functions to navigate (i.e., not using search terms or URLs), having difficulty entering valid terms into search engines because of common mistakes, including poor spelling and the entry of search terms without spaces between them. Others were unable to differentiate between the location bar and the search engine search field (Hargittai, 2002).
- A Swedish study found that compared to experts, novice users are highly unlikely to enter the URL of a search engine when asked to complete a search task, clicking instead on the 'search' link provided by the browser. Instead of examining pages from the resulting lists of links, as experts did, they instead retried the search (Hölscher & Strube, 2000). Those novices who lacked experience with the topic they were investigating also made "only small and ineffective changes to their queries, forcing them to reiterate repeatedly." This study also highlights the importance of what might be termed a *flexible search repertoire*, saying "It is not fully clear, if novices browse less useful material than the experts, but once they face a dead end their only way out is to go backwards, while experts have more flexible ways of reacting." Novice users also appear to be entirely reactive to what they see on the screen, whereas expert searchers plan ahead (Navarro-Prieto, Scaife, & Rogers, 1999).
- For those users who do use search engines, most use simple searches, with an average of two terms per query, two queries per session, typically not using complex query syntax and viewing no more than ten documents from the results list (Jansen & Pooch, 2000). On the basis of a large sample of internet queries (over 1 million) another study reports that searchers rarely go beyond the first page of results (Ozmutlu, Spink, & Ozmutlu, 2004; Spink, Wolfram, Jansen, & Saracevic, 2001):

The literature is divided over whether search engines are doing a good job in being intuitive, accessible, and providing an easy to use in terms of their interface.

- On the one hand, users seem broadly satisfied with search services. A recent data memo from the Pew Internet project in the US says that 87% of Americans who use search engines find the information they are seeking most of the time. 32% said they couldn't live without them. And 68% said they thought internet search engines were a fair and unbiased source of information. 92% said they were confident in their use of search engines (Fallows, Rainie, & Mudd, 2004). A German study found 66% of a random sample of internet users considered themselves "advanced" or "expert" at search engine use (Machill, Neuberger, Schweiger, & Wirth, 2004). We have little similar data for the UK, though it might be reasonable to assume that US searchers

would be more satisfied as most search engines are US based and contain more features and more local content.

- On the other, a series of studies have linked changes in search behaviour to poor design of search engine pages and search engine algorithms (Hsieh-Yee, 2001). A large study of European search queries (over 1 million queries) reported that only 50% of pages viewed as a result of a search were topically relevant (Jansen & Spink, in press).

Furthermore, certain studies suggest that search engines may not be doing a good job of representing content accurately and fairly, despite user confidence.

- One study suggests that a range of issues, including policy decisions by search engine providers, can prevent sites from being included in search engine indexes (Introna & Nissenbaum, 2000). For example, search engine providers described tactics such as blacklisting when deciding which sites should be included in the search indexes (Van Couvering, 2004a). The search providers cite the need to prevent spam; however transparency in these decisions to the public is limited.
- Additionally, search-engine optimisation and spam are affecting which sites come first in search engine rankings (Machill, Neuberger, & Schindler, 2003). Current search algorithms favour sites which are already heavily linked (Kleinberg & Lawrence, 2001; Vaughan, in press). Also, American sites are more likely to receive higher rankings (Vaughan & Thelwall, 2004). Of some concern is a knock-on effect that domination of search engine rankings can lead to domination of web content covering political issues (Hindman, Tsioutsoulouklis, & Johnson, 2003).

We also note that the public may be becoming more concerned about search engines. In Germany, a random sample of 1000 users found that most were in favour of either moderate governmental control of search, primarily the control of illegal content (84%), or of self-regulation by search engine companies (73%). However a substantial minority (30%) favoured hard governmental controls, indicating that the state should forbid both problematic and illegal content (Machill et al., 2004). Research on these issues in the UK is needed.

Implications

The challenge of search engines to media literacy in a highly complex media environment such as the internet are threefold:

- Basic search literacy must be assessed and improved by media literacy programmes.
- Search engines may have “illegible” features and therefore all the focus should not be on the user; an assessment of search usability for different types of searches may also be helpful.
- Literacy and presentation may not be the only factors in determining whether search engine users are able to retrieve their desired information. Economic factors may also have a part to play, and public opinion may at some point be roused to favour greater regulation.

Section 6

Regulating – protective media competences

Protective media competences refer specifically to the ability of the public to insulate themselves from harmful or offensive media content. With regard to broadcast media, this might include an understanding of the ‘watershed’ programming regulations so that parents can help their children regulate viewing. Online, it might include the knowledge of how to prevent ‘spam’ email.

Broadcast

UK parents face a range of challenges in regulating their children’s media consumption. While noting the range of informal control mechanisms employed, one study stresses the call from parents for greater support – better information about programme content and improved technological aids to controlling children’s access (Hanley, 2002). Among other strategies, a growing minority of parents is using a “parental lock” to control their children’s television viewing (Ofcom, 2004a), though the effectiveness of such technology has been little evaluated.

Another study reviews attempts in the US to implement age and content-based ratings to support parental regulation, this having been impeded somewhat by the struggle between parents (who preferred a content-based system) and the industry (which favoured age-based ratings) (Kunkel & Wilcox, 2001). The authors express particular concern that the ratings are under-or-misapplied, resulting in misleading information for parents, while the “boomerang effect” serves to make such content more attractive to children, compounding parents’ difficulties in controlling access (see Case study: Parental regulation).

Internet and mobile phone

There are a number of ways in which people can protect themselves against unwanted content and unwanted communication online. These include:

- A conceptual and practical understanding of how to block or allow certain content on the web including use of filters and firewalls.
- An understanding of similar issues on email, and an ability to use features such as blacklisting, filters, and white-listing where available.
- A knowledge of how to judge whether certain sites are “safe” including an awareness of “trusted site” schemes and “secure” transactions and how they compare.
- An understanding of privacy policies and an awareness of the potential issues involved in giving out personal information or publishing content online.

As yet we have little empirical evidence regarding the UK adult population on most of these topics.

One study on parents and children (Livingstone & Bober, 2004) reported that 46% of UK parents said they had installed content filters to help regulate their children’s use of the internet (see Case study: Parental regulation). Other applications of filters more suitable to adults might be advertising filters such as pop-up blockers. Little is known of their usage amongst the adult population.

Email spam, or unwanted and unsolicited email, is known to be a large problem in the UK. A recent report from the parliamentary All-Party Internet Group found a consensus between the companies responding to their consultation that about half the overall email volume daily was spam. AOL reported to the inquiry they were blocking over 2 billion spam messages per week worldwide, an average of 76 per customer. Individuals responding to the consultation reported volumes between 20 spam emails a week and 9,000 a day. Costs were incurred in dealing with spam both directly and indirectly through productivity loss, loss of otherwise convenient internet services such as white pages, and loss of confidence in the internet as a whole. There is also a cost to business as users “churn” through internet accounts to leave spam-infested email accounts behind (All Party Internet Group, 2003).

In the UK, the Oxford Internet Survey (OXIS), a large-scale survey of over 1,000 representative users, reported that 23% of UK internet users reported receiving obscene or abusive emails, and 17% of people said they received foreign fraud or confidence scam email such as the notorious “Nigerian fraud”. Bad experiences such as these on the whole made users less trustful of the internet (Dutton & Shepherd, 2004). On the other hand, familiar brands offer a degree of ‘psychological security’ than enhances trust in e-commerce (Morrison & Firmstone, 2000).

How individuals cope with their experiences of spam is unknown for UK adults. In the US, however, Pew Internet reports that 37% of those who have personal email accounts apply their own filters, while 86% of users “immediately click to delete” their spam messages (Fallows, 2003).

UK adults are concerned about privacy online. The OXIS survey found that 54% of adults in their representative sample of over 2,000 individuals agreed or strongly agreed with the statement that “going online puts privacy at risk”. 41% agreed or strongly agreed that “going online permits people to get information about you”. People who currently accessed the internet via broadband were most aware of these risks (Dutton & Shepherd, 2004). In the US, Pew Internet reports that while Americans are also very concerned about people getting information about their surfing habits, only 43% of internet users could identify a “cookie,” the primary mechanism for tracking people online. Only 24% of those – 10% overall – had set their browsers to reject cookies (Fox, 2000). Similar research is not available for the UK, but these findings suggest that literacy issues may be a factor in the public’s ability to control their privacy online.

Data security is another area of concern. More research is needed on how confident and able people are to protect the data stored on their computers as more and more of the UK population switch to “always on” connections like broadband. In the US, Pew reported that 56% of broadband users had installed firewalls (Horrigan & Rainie, 2002).

For mobile phones, the most active research has been into health risks and into public perception of those risks (Hutter, Moshammer, Wallner, & Kundi, 2004). Other risks which the public may be less aware of are risks to privacy, especially as mobile phones are seen as key elements of location-based surveillance (Thiede, 2003). These are balanced by the perception that mobiles given to children may provide some type of security for them, and perceptions of children’s safety enter into parental purchase decisions (Haddon et al., 2003).

Case study: parents' regulation of their children's internet use

Context

As the internet is increasingly adopted in homes, parents are developing new skills and competences to assess the online risks to their children, together with the skills required to protect and guide their safe use of the internet. This is made difficult by the pace of technological change, by the unequal balance between children's literacy and parents' literacy, and because of uncertainties over the relevance of pre-existing parenting skills to the new medium.

Pressure to ensure that their child is not "left out" or "falling behind" tends to lead parents to invest in home access to multiple new technologies, though this is often experienced as demanding in terms of families' financial, technical and social resources. National surveys in the UK (Livingstone & Bober, 2003), Canada (Media Awareness, 2000), the USA (Kaiser Family Foundation, 2003; Turow, 1999; UCLA, 2003) and Northern Europe (Larsson, 2003) reveal high levels of parental concerns about their children's access to and use of the internet. These centre on inappropriate, unwelcome and risky forms of content and contact, including pornography, hateful and violent content, paedophile activity, invasion of privacy, bullying, commercial exploitation, and disclosure of personal information.

Research on parents' management of online risks extends a long-standing tradition of research on children's use of television showing that parents, mainly mothers, regulate in a number of ways, combining "positive" (or empowering) and "negative" (or restrictive) strategies (Bulck & Bergh, 2000; Bybee, Robinson, & Turow, 1982; Lin & Atkin, 1989; Ofcom, 2004a). Since the internet encompasses many dimensions of daily life – entertainment, education, music listening, employment information, social networks, opportunities for participation and citizenship, etc, simple restrictive strategies (banning, controlling, etc) are problematic; hence, parents (and children) seek safe and productive ways of engaging positively with the internet.

Findings

There are growing attempts to assess parental practices in monitoring and regulating their children's internet access:

- A UK national survey found that 43% of parents set rules for how much time their child can spend online; they also restrict whether their child can give out personal information (86%), fill out forms online (57%) or visit chat rooms (62%), though children are much less likely to report these rules. Further, 57% of parents say they help their child in using the internet, 32% sit with them, 63% keep an eye on the screen, 46% claim to have installed a filter; 41% check the computer later and 25% check their child's emails (Livingstone & Bober, 2003).
- An American survey found that 61% of parents stated that they had rules about internet use, while 37% of teens reported being subjected to internet time-use restrictions, 61% of parents reported checking websites their teen had visited, while only 27% of teens believed that they had been checked on (Pew, 2001).
- A Canadian survey found 70% had set rules for their children's internet use; 67% checked bookmarks or browser history to see what websites their children visited; 17% used blocking software and 16% filtering software (Media Awareness, 2000).
- Eurobarometer surveyed a range of European countries, finding that 60% of parents restrict the sites their child can visit, 52% limit time online, 49% forbid giving out personal information and 39% do not allow their child to meet offline a contact they made online (European Opinion Research Group, 2004; Larsson, 2003).

Overall, these findings suggest that between half and two thirds of parents set rules for their children's internet use, although children report lower levels of rules than do parents (Larsson, 2003; Livingstone & Bober, 2003). Little is known of parents' capacity to support children's

online activities, and there is a discrepancy between concerns expressed and actual behaviour (e.g. Turow, 1999; Van-Rompaey, Roe, & Struys, 2002). Lastly, it is not clear that parental supervision or use of filtering software reduces the incidence of risky online encounters (Mitchell, Finkelhor, & Wolak, 2003).

Implications

While parental concerns are widely shared, parental expertise and resources in regulating their children's internet use is unequally distributed. Key barriers include income, education, socio-economic status, parental working status, and parents' internet experience and skills.

- Perhaps because it requires parental time and communication skills, domestic regulation is inconsistently implemented and not always effective (Facer, Sutherland, Furlong, & Furlong, 2001; Ribak, 2001). One small scale, qualitative study suggests that parents – particularly mothers - in low-income homes can feel ill-prepared for the task of supporting their children's educational uses of technology (Bird & Jorgenson, 2003), while Facer et al (2001) are critical of the "middle-class expectations" that advice on parental regulation can impose on families.
- Technical proficiency in the use of software for filtering, blocking and checking relies on finances, skill and, often, social support via a local internet "guru". Livingstone and Bober (2004) found that 23% of parents of 9-17 year olds do not know if their child's computer has a filter installed, only 15% of parents who use the internet say they know how to install a filter; 10% say they do not know what their child does online, and 18% say they do not know how to help their child use the internet safely.
- The expertise gap between children and parents poses particular difficulties: children become skilled at evading parental attempts to regulate their internet use, making the issue of trust (rather than authority) within the family of paramount importance (Hanley, 2002; Livingstone & Bober, 2003). Children's desire for, rights and actions to protect privacy can also be a barrier to parental regulation.

While parents consider themselves responsible for their children's internet use, the evidence suggests that relying on parents is not an effective regulatory strategy.

- Such responsibilities are, arguably, better shared with regulators, educators and industry, as parents agree (European Opinion Research Group, 2004; Livingstone, 2001; Livingstone & Bober, 2003; Livingstone & Bober, 2004). There are increasing calls for public policy initiatives to inform and support parents in the task of regulating children's internet use in the home (Carr, 2004; Internet Crime Forum, 2000; Palmer, 2004; Williams, 2001). Others are concerned that such initiatives risk inflaming moral panics by stressing the vulnerability (rather than the agency and good sense) of children (Buckingham, 2002; Oswell, 1999), inappropriately displacing concerns about social ills onto parents (Drotner, 1992).
- Only a patchy evidence base underpins policy regarding the risks children are encountering and the responses of parents (Livingstone, 2001). Some issues have received little or no research attention, for example the issue of children and parents' awareness of online marketing to children (Montgomery, 2001). Further, legal frameworks are not always implemented satisfactorily, as in the case of privacy policies on children's websites (Turow, 2000).

Section 7

Comprehending media

This section concentrates on the first element of “understanding” media, comprehension of information. Most of our findings are derived from media “audience studies”. Curiously, from our present perspective, most research on audiences does not explicitly claim to concern “media literacy” – the term rarely appears in indexes to media/audience books. But by contrast with the modest literature on the public’s access to broadcast media, the scope of relevant research here is enormous, encompassing the relation between media representations and public perception of crime (Dickinson, 1993), the environment (Hansen, 1993), news (Jensen, 1998), health issues, (Reilly, 1999), the family (Bryant, 1990) and much more. Hence, we must be heavily selective, pointing readers to the present bibliography and to recent overviews of research on broadcast audiences’ understanding (Brooker & Jermyn, 2003; Hagen & Wasko, 2000; Nightingale & Ross, 2003)

Although generally addressed together, research addresses “understanding” in two key ways:

- How do people understand the media (a matter of decoding or interpretation, of recognition of textual construction, generic conventions, rhetorical devices, production imperatives and institutional structures);
- How do people draw on the media to understand the world (a matter of uses and gratifications, media dependency, influence and effects and the social construction of reality). In what follows, we draw out some recent findings that indicate what is known and not known about adults’ understanding of broadcast media.

Broadcast

Media literacy challenges in a complex communication environment

The media are, increasingly, thoroughly embedded in and diffused through daily life. It is not easy for either researchers or audiences to determine just how the media contribute to, or constitute, the knowledge, values and practices of everyday life (Abercrombie & Longhurst, 1998). Traditionally, for both the public and researchers, a critical analysis of media content has relied on identifying a contrast between the media’s view of reality and the daily experiences of the audience (Ball-Rokeach, 1985; Eldridge, 1993; Gamson, 1992; Gerbner, Gross, Morgan, & Signorielli, 1986; Livingstone, 1998; Philo, 1993; Schlesinger, Dobash, Dobash, & Weaver, 1992; Signorielli & Morgan, 1990). As media and non-media experiences become less easy to distinguish, it becomes less clear how to ‘distance’ oneself from a mass mediated world view, relying on one’s own experience in order to critique the media. This suggests the need for a more subtle approach to critical literacy on the part of the audience.

How do people make sense of the abundance of images and ideas disseminated through broadcast media? On the one hand, research argues that the vast amount of information poses a growing problem – people must “tame the information tide”, they suffer from information fatigue, they are besieged by de-contextualised messages that blur familiar forms and incorporate subtle commercial and political meanings, and they exhibit biases in making selections (Curran, Ecclestone, Oakley, & Richardson, 1986; Gerbner, Gross, Morgan, & Signorielli, 1982; Graber, 1988a; McChesney, 2000; Philo, 1990; Potter, 2004; Wicks, 2001). On the other hand,

research recognises that audiences enjoy a greater array of opportunities and perspectives than ever before, more closely tailored to their interests, to which they respond critically, creatively, pleasurably, thoughtfully integrating some media images into their lives while keeping others appropriately at bay (Bird, 2003; Brown, 1994; Corner, 1991; Gledhill, 1990; Hill, 2002; Jenkins, 1992; Schroder, 1988; Tulloch, 2000; Wood, 1993).

In researching audiences' understanding, judgments about both media and audiences are inevitable. For the most part, media and communications research has been critical both of media texts and of audiences' abilities, albeit from very different theoretical perspectives (though this is less the case for research from a marketing perspective). Research on audiences has more recently qualified these critiques, arguing for a rebalancing towards empowering texts and active, creative, or even resistant audiences. While valuable for countering the image of the "passive" and "vulnerable" audience widespread in popular and elite discourse, arguably this in turn has resulted in an overly-celebratory, sophisticated conception of the audience, to the relative neglect of evidence for uncritical, confused or undiscerning responses on the part of audiences.

Generally speaking, studies of audiences' understanding of broadcast media adopt either a defensive or empowering conception of media literacy (Buckingham, 1989). Under both approaches, media literacy, like other forms of literacy, is theorized as the interaction between encoding and decoding. For example, many argue that since the media offer a selective and particular construction of the world, this impedes informed choices by audiences. Further, audiences are also, necessarily, highly selective and, by framing television as "relaxing", or as "leisure", people are not always sufficiently critical, failing to recognise potentially problematic consistencies in media content. Hence, audiences introduce their own cognitive biases – of selection, attention, memory and recall – that affect the interpretation of messages. Many of these chime with parallel biases in the media resulting from institutional, production, commercial and technical influences on the structuring and dissemination of media content (Wedell & Luckham, 2001).

Dealing with the volume of information available

A large body of research paints an uneven picture. On the one hand, the public appears well able to select and account for their media choices, indicating a complex understanding of television genres, of the fact/fiction distinction and of the place of commercial messages. On the other hand, the public seems much less equipped to comprehend or critique the news, it appears to be inconsistent in its critical evaluation of much audiovisual content, and it may have only a poor grasp of the economic and regulatory contexts which shape the audiovisual contents they view.

- While channel and genre preferences are stratified by audience demographics, uses and gratifications research suggests that people are well able to explain and justify their media choices (Rosengren, Wenner, & Palmgreen, 1985), although other research suggests audiences are less selective (Kubey & Csikszentmihalyi, 1990).
- Crucial questions arise regarding the interpretation of particular contents and genres. Can people recall the source of an idea or image, contrast media and non-media sources of knowledge, detach information from the way it has been framed? In answering, broadly speaking, "not really", the social psychological approach to audiences demonstrates a wide range of ways in which the public's understanding of the world is instead shaped by the world view portrayed by the mainstream media, precisely because the encoding of

media messages relies upon – exploits, perhaps – the cognitive processes of audiences (Hojjer & Werner, 1998; Iyengar, 1991; Potter, 2004; Wicks, 2001).

- These cognitive biases include a range of attribution errors (in which people inappropriately infer causation in events), illusory correlations (in which they identify false relations between observations), framing effects (in which the form or context of a message affects its reception), representative and availability heuristics (in which people reduce uncertainty through unjustified inferences or assumptions based on the salience of events), various misunderstandings of scale, probability, comparative risks, and many more (see Potter, 2004, for an overview).

Internet and mobile phone

Understanding internet and mobile technologies

There is little direct academic research into how people interpret and understand websites, although one important strand of work focuses on health information presented to the public (see Case study: Understanding health information). As most websites are text-based, we may expect comprehension to be strongly linked with traditional literacy measures.

One key difference is highlighted by the literature: navigation and understanding are crucially linked in the online atmosphere of media plenty. Previously, information offline has been organised according to the nature and quality of the information, placing fewer demands on the individual's critical/information skills. On the internet, the information literate person is still able to find the information he or she wants by searching among a wide range of relatively disorganised sources and by being able to compare and evaluate them, sorting authoritative from non-authoritative and relevant from irrelevant documents. However, a less information literate person faces difficulties in navigating online, even if they have some technical skills, precisely because they lack the skills for comparing and evaluating information evaluation.

- For example, one useful study from a South African context makes the point that adults using the Web face challenges to the values they have learned to associate with (printed) texts in school (Walton & Archer, 2004). Instead of the authoritative and carefully selected texts that one might find in a library, a huge variety of primary sources confronts the often under-prepared users online. In addition, people's rather broad searching strategies - which work well in a closely-monitored database such a school library, for example - are unsuitable for large-scale search engines, which return a vast number of often unsuitable results.
- Without the presence of large-scale studies, it is difficult to assess how widespread this potentially inappropriate belief in website content is. One medium-sized US study assessed verification behaviour among students and non-students for accuracy, authority, objectivity, currency and coverage of websites (Metzger, Flanagin, & Zwarun, 2003). Both groups reported that they verified information only rarely to occasionally. Another study concludes that web users rely on the design and look of a site rather than on the author credentials and expertise (Warnick, 2004). UK-based research is needed here.

Case study: understanding health information

Context

In recent years the medical profession has become concerned about the effects of low literacy levels on the ability of the public to understand written and oral medical information, and the potential impact on the ability of those with low literacy to consent to treatment, to follow complex instructions relating to treatment, and to answer key diagnostic questions (Parker et al., 1999).

A recent comprehensive review of health literacy carried out by the National Consumer Council on behalf of the Department of Health, gave this definition of health literacy:

“the capacity of an individual to obtain, interpret and understand basic health information and services in ways that are health-enhancing” (Saranjit & Lennard, 2004).

This definition has clear overlaps with the definition of media literacy as given earlier. It lacks the “creative” dimension as a part of its definition but, as we shall see, the empirical evidence points to this potentially being an important element in patient empowerment and self-care.

Note that in this area small-scale studies are common, which limits our understanding of how health and media literacy interact generally. Because of this, systematic reviews of small-scale studies such as Eysenbach et al. (2002) are extremely helpful. Similarly, Rich (2004) is an excellent example of an evaluative study, as well as an interesting experimental method in video creation and analysis.

Findings

- “Health literacy” has been found to be strongly linked to traditional literacy, and indeed to levels of education in general (Parker et al., 1999; Saranjit & Lennard, 2004). Tests of levels of medical literacy have not typically included any type of media literacy indications. However, the NCC/DoH study stresses that health information needs to adapt to a patient’s limited ability to assimilate health information particularly during the early stages of a disease, pointing to the *legibility* of content as a key issue.
- The internet seems to have a key role to play in delivering health information. Many internet users are seeking information about health-related matters online. According to the British Social Attitudes survey, 47% of internet users in Britain think that the internet is a reliable source of information about what is best for your health (Bromley, 2004). Medical experts, on the other hand, are not so sure. Many studies have reported on health information available on the Web, primarily using indicators of quality such as accuracy, completeness, and design. A study which evaluated these reviews said that 70% of the reviews conclude that quality of health information is a problem on the internet (Eysenbach, Powell, Kuss, & Sa, 2002). However, the very activity of searching, provided that one has the literacy to undertake this successfully, may have advantages: searching for information online offers a way of integrating one’s doctor’s advice into one’s everyday life, taking responsibility for one’s own health (Kivits, 2004).
- One small-scale study of 15 women (Sillence, Briggs, & Fishwick, 2004) investigated in-depth how the public comes to trust online medical information. They outline a three-stage model of trust (of which the first two stages were investigated). First, users determine – often very quickly - whether a site is suitable for further investigation; at this stage, *regardless* of the content of the site, users often rejected sites for their design features, including an inappropriate name, complex layout, lack of navigation, “boring” design (especially colour usage), pop-up adverts, slow introductions, too much text, inadequate search or corporate look (see also Warnick, 2004). Second, users were more analytic, evaluating the content of the site in more depth; while design continues to play a role, content becomes the major factor

influencing trust, with sites being rejected at the second stage for being sponsored by pharmaceutical companies or selling products (though as the authors, experts may recommend pharmaceutical sites because of their accuracy); other factors that encouraged trust in this study were, for example, that the author of the site was similar to the person looking for information. In the third and last stage, users begin to build an ongoing trusted relationship with the site as a provider of information.¹³

- Other studies suggest that the creative dimension of media literacy may be important for health, facilitating patient empowerment within the medical relationship. According to a review of recent research, “powerlessness is a significant health risk factor and conversely, opportunities to experience power and control in one’s life contribute to health and wellness” (Bergsma, 2004). A study of low-income asthma sufferers invited them to create video footage in order to “teach [their medical practitioners] about their asthma”. This gave both patients and medical practitioners much more awareness of the patients’ health issues and needs (Rich, 2004). Another study of breast cancer sufferers using online communities also found that the ability of women to tell their stories in an online context was an important feature of coping with their disease (Orgad, 2004b).
- Traditional broadcast media are typically linked with health in the context of public health awareness. In the 1980s, for example, media were crucial in developing AIDS awareness. Today the media play a controversial role in the genetically modified food debate. Broadcasting, print and the internet are all involved in communicating with the public during public health emergencies, such as the anthrax scare in the United States in 2001 or BSE in Britain (Miller, 1999). But the interaction between various parts of the media and audience groups is complex. Research into how audiences understand public health communication is therefore also vital (for example, Kitlinger, 1993).

Implications

- Research is needed into whether and how far the UK public is beginning to rely on online medical content and in what ways they evaluate and use such information. Further, because health is an important issue for everyone, and public health announcements are often carried by the media, a basic level of media literacy is arguably essential for the entire population.
- Those who most need health information may also be those who are more likely to lack basic literacy skills, computer skills and home/private access to the internet in a potential compounding of disadvantage (Parker & Gazmararian, 2003).
- Sillence et al. (2004) suggest that finding content which originates from a source resembling the viewer is a powerful enabler of trust. Similarly, content which is too complex may be a barrier for those in pain and distress. Further, content which does not make its assumptions, and its limitations, explicit may impede critical assessment of its value (Miller, 1999).
- This case study highlights once again the power of well-designed content to augment the understanding and trust of the audience. It suggests too that creative use of media can be a powerful therapeutic factor, empowering patients to negotiate and contribute to their own care in a variety of ways.

¹³ Sillence et al.’s (2004) insightful and theoretically informed study will be extended longitudinally, using a combination of observation, verbal protocols, and group discussions to understand how trust is attributed online.

Section 8

Critiquing media

Critical media literacy, the ability to evaluate texts and sources and to differentiate in levels of trust between them, is the subject of this section. This includes, for example, the ability to identify commercial messages, whether received in the flow of television or as a link on a web page. A large literature is available on the subject for broadcast media but much less for internet media or mobile phones.

Broadcast

Critical evaluation and trust

Research on this theme has concentrated on public understanding of the news, although questions of critical evaluation and trust arise in many other broadcast genres.

- Television is the main source of national news (for 73% of the public), international news (78%) and local news (44%) (Ofcom, 2004a). The same survey finds that 2 in 3 trust television to provide the most fair and unbiased news, though interestingly those of higher socio-economic status are less likely to prioritise television news (preferring newspapers or radio). Why this is the case, and whether it reflects a relation between socio-economic status and media literacy remains for further research.
- According to a recent study, UK audiences generally value the truthfulness and informativeness of traditional factual genres, and they tend to make clear if not always consensual distinctions among programmes, often being confident that they learn from viewing (Hill, forthcoming).
- When people distrust media representations, they may seek out a wider range of information sources or they may “dismiss coverage” altogether (Reilly, 1999). This critical rejection – or lack of trust - is partly a matter of education, but it is also characteristic of some disadvantaged or marginalised populations (Michalski et al., 2002; Morley, 1992; Towler, 2001). On the other hand, diasporic groups have been found to be particularly broad-ranging and motivated in their news consumption, with national media playing a key role in furthering social inclusion or exclusion (Christiansen, 2004).
- Not all are so trusting or engaged. In political science and youth studies there is a growing literature charting the declining interest of young people in news, participation and politics, thus proposing youth to be particularly lacking in the media literacy (or the motivation) required to attend to, appreciate and critique political information. For others, however, it is the news media that are failing young people by focusing on traditional information to the neglect of the single issue politics and social movements that do engage youth (Barnhurst, 1998; BBC, 2002; Bennett, 1998; Dahlgren, 2003; Gandy, 2002). In addition to the greater scepticism of young people, there is also evidence that audiences from lower socio-economic status backgrounds and from ethnic minorities are more sceptical of broadcast news (Hargreaves & Thomas, 2002a; Michalski et al., 2002).
- Despite high levels of public trust in the objectivity of television news, this does not imply high recall or understanding of the news. Research equally

consistently shows that few can recall many of the news items watched just a few minutes before, and many confuse, or misunderstand key aspects of the message content (Graber, 1988a; Gunter, 1987; Robinson & Levy, 1986). Key barriers are identified as the use of technical terms, lack of context or explanation for events, the rapidly shifting news agenda, and mismatches between visual and verbal information, among others.

- 15% of respondents to Ofcom's *The Public's View* said they "do not know" if television news contains political bias (Agyeman, 2003; Ofcom, 2004a). This suggests that some do not grasp the economic, cultural and presentational imperatives in news management, or advertising, for example (Agyeman, 2003). BBC research found that the increase in media coverage results in less not more clarity – "more discussion of the small-print and less clear communication of the basic facts and the bigger picture" meant that "many people do not have a grasp of the basics of on-going political and news issues ... or even democracy's structure and workings" (BBC, 2002:4; Hargreaves & Thomas, 2002a). These reports suggest that this is failure of the news media as much or more than a failure of the public: literacy results from the interaction between the two (see also Michalski et al., 2002).
- Audiences' complex and ambivalent responses to media images of human suffering around the world illustrates the difficulties of responding "as a citizen" to highly emotive issues over which audiences have little control (Hoijer, 2004). Looking beyond simple notions of "compassion fatigue", research suggests that audience responses are subtle and discerning, yet also dependent in ways people do not always recognise on the journalistic conventions and economic imperatives that frame the media reporting.
- Whether positioned as citizens or consumers, when the media challenge their values, audiences are faced with an often conflictual negotiation over meanings – as in the case of pro-life women watching pro-abortion drama (Press, 1991a), or men watching male violence against women (Schlesinger et al., 1998). In these studies and other studies, gender, class, ethnicity and religion also emerge as key differentiators of audience understanding (Christiansen, 2004; Gillespie, 1995; Hoover, Clark, & Alters, 2004; Michalski et al., 2002; Press, 1991b).
- Similarly, particularly at times of conflict, television continues to be the main source of international news for the majority of the public (Cohen, Adoni, & Bantz, 1990; Cumberbatch, Brown, McGregor, & Morrison, 1986; Morrison, 1992; Robinson & Levy, 1986; Sancho, 2003; Schudson, 1995), although audiences may well be critical of the coverage (Michalski et al., 2002). Despite the valuable body of research here, there is still much to learn about the basis for audience judgements (e.g. that television coverage of the Iraq war, unlike that of the press, is balanced). How do people make decisions about trust, reliability and fairness?

Implications for a changing broadcasting context

The continual innovation in broadcasting content, while in many ways exciting and fruitful, provides audiences with new literacy challenges. Genres represent an unspoken "contract" with the audience, specifying expectations and conventions to guide interpretation (Livingstone & Lunt, 1994). Given the emergence of many blurred, hybrid and multi-media media forms, media literacy is vital to an awareness of the rhetoric of design, the semiotics of different forms of representation, and the critical assessment of claims to truth and authority (Kress, 2003). While we need not

agree that a “true” understanding can be obtained if only biases in encoding and decoding are eliminated (Potter, 2004), many are concerned that the public increases its understanding of how the form of messages encodes particular meanings, including particular power relations and persuasive or ideological assumptions (Hall, 1980; Morley, 1992; Poster, 1990; van Dijk, 1991).

- Reality television, through its intertextual and interactive incorporation of audience-generated content, along with a play on other cultural forms, demands considerable media literacy from its audience (Holmes, 2004). If not always successful, determining what is “real”, “authentic” or “constructed”, and joining the critical debates about these and other conventions, is undoubtedly pleasurable, key to the contemporary audience’s response to new genres; see also audience research on *Big Brother* (Jones, 2003), and on talk shows (Livingstone & Lunt, 1994).
- While soap operas are popularly denigrated as making few media literacy demands, it may be precisely the accessibility and openness of this genre that permits viewers to make highly media-literate interpretations that relate the ongoing drama to their personal experiences. This may even have therapeutic consequences (Madill & Goldmeier, 2003) (see also Geraghty, 1990).
- However, many uncertainties and confusions accompany innovations within and across genres: “there are grey areas within factual programme, where audiences are unsure of the categorisation, truthfulness and informative elements of specific sub-genres, including documentaries and popular factual programming” (Hill, forthcoming: 1). Indeed, determining the boundary between fact and fiction remains an issue for all age groups, especially given the playing with formats that now characterises broadcasting. Hence, viewers are continually developing and rethinking their understanding of “the real”. Analysis of focus groups suggests that audiences employ (at least) six criteria for evaluating the realism of media texts – plausibility, typicality, factuality, emotional involvement, narrative consistency and perceptual persuasiveness (Hall, 2003).
- As channels multiply, finding the broadcast content one wants will become a media literacy task of increasing significance, partly amenable to signposting (to help audiences locate specific contents). This is important if the media are – through news, drama and other genres – to sustain shared experiences. The potential fragmentation of a common culture has implications for social capital (Brookes, 2004) and, as one US academic found in researching listeners to right-wing radio talk shows, one consequence may be opinion polarization as audiences seek out partisan sources of political information (Jones, 2002).
- Some fear that the fragmentation of audience tastes and preferences may undermine audiences for public service broadcasting, involving valued but less profitable programming (Bazalgette, 1999; Born, 2003; Webster & Phalen, 1997). Media literacy is in this sense *appreciation* (analogous to the appreciation of high quality cultural forms in print, film and related arts). Others argue that such fragmentation has advantages: in critiquing the image of “Britishness” promoted by public service broadcasting, Creeber welcomes the diversification of the broadcasting environment for supporting the “do-it-yourself citizenship” of multicultural Britain (Creeber, 2004; Hartley, 1999).

- Lastly, although research suggests that the public is supportive of current levels of broadcasting regulation (Agyeman, 2003), little is known of what adults understand about the production and distribution structures which shape broadcast content. Indications are that they have little idea of the processes by which materials are selected and made available. Adults' awareness and understanding of the concept of public service, the commercial context, the role of media regulators, international or national distribution and ownership, and so forth, all require more research.

Internet and mobile phones

We noted in the comprehension section of the review that understanding the difference between the authority of online sources as opposed to conventional printed textual sources may be an issue for the public.

- A further challenge is one of overconfidence on the part of technically literate adults. One recent US study found that even those who possess a high degree of ability to navigate between websites lacked the critical verification and evaluation skills which are integral to the middle standard of information literacy (Brown et al., 2003). Another reported students using very few sources other than the internet, having little understanding of how search engines guide them to a topic, and expressing confidence in "misinformation" presented online in terms of advertising claims, government misinformation, and propaganda, as well as being "somewhat susceptible" to scam sites (Graham & Metaxas, 2003).
- We know comparatively little about how adults understand advertising online. Indeed one can question whether the homepage of any business should be considered "advertising" or not, or whether the term advertising should be limited to paid-for messages on other websites. Specific challenges in this area also include new forms of advertising that are growing with the new technology. These include invasive advertising such as email and mobile spam, targeted advertising based on data mining, electronic product placement in computer games, and "paid inclusion" links in search engine indexes, to name a few.
- Further, there is little evidence to show how consumers understand the different ways in which different websites or mobile services are funded, or how that might affect their content. Whereas this might seem quite straightforward in the case of an e-commerce site or a e-government site, many sites have more complex models funded by advertising. One study that polled a random sample of 1,000 German search engine users found that users believed that search engines were funded by payment by webmasters for high-ranking results or by "data-mining" or selling user information. They thought that advertising was much less important (Machill et al., 2004). However, the contrary is the case: in 2003 96% of Google's revenue came through advertising and none through direct payment for inclusion in the search engine or through data mining (Van Couvering, 2004b). Thus what little data we have suggest that the public may be quite uninformed on the commercial and economic processes of online content.

Case study: understanding news

Context

There is a well-established tradition of researching adults' understanding, evaluation and recall for broadcast news (Eldridge, 1993; Gamson, 1992; Graber, 1988a; Gunter, 1987; Robinson & Levy, 1986). Although audience research has found that the public can be critical in relation to familiar television genres such as the soap opera, when research asks concrete questions about comprehension and recall, a complex picture emerges about the public's understanding of the news. Such a picture is limited by methodological difficulties in researching understanding (Tewksbury, 2003).

There is limited research on news and audiences that addresses the consequences of the proliferation of a multi channel environment, digital media and the internet. The public now receives news in a context of multiple potential news sources. As anyone can post content on the web, there are issues of credibility of news sources on the web (Gunter, 2003; Katz, 1998). Further, because it is interactive, the internet user can choose to follow only the news that interests them (Tewksbury, 2003). In this context it is vitally important that the public can evaluate competing news sources critically.

Findings

- Research consistently finds that people's interest in news is shaped by whether or not they understand: if they do not understand, they lose interest. People want an understanding of context, history and causes of the events depicted. Because much news does not provide this context, people do not understand, lose interest and disengage (Graber, 1988b; Hargreaves & Thomas, 2002b). "There was a strong demand for clear direct explanations from journalists which cut through 'waffle' and 'spin' and which explained why these events were happening" (Philo & Berry, 2004:257).
- Research has also found that people were more engaged if they felt they could empathise with the people depicted, if they considered the news concerned people similar to themselves, or if there were "common or universal values" in the news which they could relate to (G Philo & Berry, 2004). Moreover, the ways in which people and events are depicted in the news influences how people understand the experiences depicted and so who they identify with. This means that where adequate context is not provided people may misunderstand the causes and contexts of a situation. In Philo and Berry's study, when people were provided with more contextual information some changed their view of information depicted in the news.
- In the USA recent research on public opinion and audience mistrust of television news in finds that: "When people did not trust the media, they tended to reject the mediated climate of opinion. On the other hand, when people had faith in the media, they tended to consistently converge with the media's election predictions" (Tsfati, 2003:65). This raises the general question of whether low trust reflects low interest and knowledge, or high critical literacy.
- Despite the diversification of the media environment broadcast news remains the public's main source of news and audiences do trust television news (Hargreaves & Thomas, 2002a; Klein, 2003; Michalski et al., 2002; Ofcom, 2004a; Philo & Berry, 2004). However, the American case suggests that the internet may become an increasingly important source of news, especially for young people. For example, a Pew Internet study found that "When the terrorist hijackings occurred in September 2001, internet traffic soared... Nearly half of internet users looked on-line for news about the terrorist attacks, and about 25% "sought out information about Osama Bin Laden or Afghanistan" (Hamilton & Jenner, 2003:136). Also in the US, research suggests that increasing numbers are using the internet as a news source (Eveland Jr, Marton, & Seo, 2004). See also Ofcom's PSB Phase 1 report, which reports on viewers' use of 24-hour news channels and the Internet at times of breaking news (Ofcom, 2004c)

- The news people choose to read online can be different from that which they would receive from offline news sources. It seems that online news is used in addition to broadcast news, rather than as a replacement (Althaus & Tewksbury, 2000), although this may yet change further as the internet becomes further embedded in daily life. The “literacy task”, for the public, is thus to compare and contrast different sources. On the other hand, American research also suggests that users frequent the websites of big media brands much more than other sites, so that they may obtain very similar information on television and online (Tewksbury, 2003): if this is the case in the UK, the literacy task would be that of locating and evaluating alternative news sources.
- Research on media credibility suggests that as people become more familiar with a medium, they perceive it to be more credible. At the same time, familiarity with a medium seems to lead to more critical understandings of information received via that medium (Gunter, 2003). Research has also investigated how multimedia presentation of news might affect comprehension. Some find that the use of multimedia and links means users forget news more easily (Sundar, 2000 in Gunter, 2003). People who use the web often may benefit from the use of hypertext and links (Eveland Jr et al., 2004).

Implications

- Barriers and enablers to understanding news in the online environment, unsurprisingly, are different for those who are regular web users and those who are less familiar with the web. The use of multi-media in the delivery of news may pose a barrier to users’ recall of news items. The use of hyper-text linking structures may pose a barrier to people’s learning from the news among those less familiar with the internet while enabling understanding by those more familiar with the internet.
- Lack of historical context and concentration on violence in television news coverage can be a barrier to viewer engagement and critical understanding. While researchers often call for the provision of historical, social and political information to contextualise news coverage, it remains unclear whether this would successfully engage viewers, by encouraging understanding and discussion.
- Research on news audiences suggests that media literacy depends both on viewers’ motivation and understanding, and also on the production, framing and presentation of the news itself. It may seem inconsistent that the public tends to trust the news as a source of factual information, often does not view the news critically and yet is frequently disengaged from the news (Hargreaves & Thomas, 2002b). How news literacy can be increased, and to ways in which this depends on public motivation/interest or public understanding, remains a research challenge for the future.
- US research suggests that online news sources, formal and informal, are becoming increasingly important. Research examining how people understand such web-based news sources in the UK is urgently needed to see whether, for example, lack of context leads to disengagement and misunderstanding in the online context, as it appears to do in the broadcast context. Future research should also explore who is using online news and who is not benefiting from these opportunities (Tewksbury, 2003). Research on people’s understanding of online news sources would benefit from adapting methods used for researching broadcast news audiences.

Section 9

Interacting with media

This section covers interaction, an aspect of use in which the public creates their own media content very much within the bounds of a media programme. There is no doubt that being able to interact with media, particularly in the context of political debate, for example, is an important aspect of media literacy. On broadcast media interaction may now include such diverse activities as participating in a radio phone-in or voting on a reality-TV show. Online, it may include discussions in news forums or even e-voting. There is no doubt that interaction with media is growing rapidly, and research in this area is quite active.

Broadcast

There is an established tradition of research into public participation in radio and television through talk shows, phone-in programmes, and more recently the reality TV genre. Some authors view as positive the provision of spaces within the media in which members of the public can express their views (e.g. Blumler & Gurevitch, 1995; Livingstone & Lunt, 1994; Zoonen, 2001), while others are more negative about the opportunities this type of interaction provides (e.g. Coleman, 1997; Couldry, 2002). There is no doubt however that the opportunities for the public to interact with content and services in broadcast have changed dramatically. Digital television presents new opportunities for interaction by the public. However, there is at present little publicly available research on adults' interaction with the content and services provided with digital television, although it seems that use of interactive facilities is increasing:

“43% claim to have used interactive television services via their remote control (up from just over a third in 2002) with 21% doing so at least once a week (15% in 2002)” (Ofcom, 2004a: 73).

It is also clear that the use of these services is more prevalent among the young, and among women: young people more often buy products and services via interactive television, and are more likely to respond to television programmes via phone, text, or email. Though this is still a minority of the public, and something they do not do very often.

Ofcom research also details viewer opinions about the value of interactive services on television:

“In general, there is some doubt about the value of interactive services delivered through the TV. Only half agree that services such as email, games and internet access delivered through the TV are attractive, although this rises to 69% of 16-24s and 62% of multichannel viewers. Almost eight in ten say they would not be willing to pay for services such as banking, home shopping and Internet access” (Ofcom, 2004a: 74).

While it delivers an important general picture, survey research may not provide sufficient detail regarding the nature and determinants of people's use of interactive services.

Research on UK adopters' of Sky Digital television in its early days provides some insight here (Theodoropoulou, 2003). A nationwide survey in January 2001, together with in-depth interviews with Sky subscribers suggested also that only a minority of subscribers at that time used interactive services:

“The findings show not only that the use of interactive services is fairly marginal but most importantly that what consumers want from DTV is, simply put, more TV.” (Theodoropoulou, 2003)

This finding is repeated elsewhere (e.g., Gunter, 2004). Theodoropoulou's research distinguishes contextual and non-contextual interactive services. Contextual services refer to those services which are complementary to a particular TV programme. Non-contextual services refer to those services which are separate from the programmes (TV banking, shopping, email, etc). Subscribers were not interested in the non-contextual services, with the possible exception of games. Theodoropoulou suggests that people see the internet via the computer as the preferred site of banking, shopping etc, whereas contextual services on interactive TV are becoming more popular, because they add to the viewing experience. Since viewers appear to be choosing not to interact much with their television, this raises questions about how they might, in the future, develop the skills to do so. This has significant implications for the government's agenda for e-government services being provided via digital television:

“While DTV can provide wider access than the Internet in terms of demographic reach, its limited interactivity and the re-learning that viewers will need to undergo may limit its initial applications and adoption. ... Significant problems remain with the usability of basic DTV Services, resulting in certain sectors of society being excluded.” (Gunter, 2004)

As noted in the discussion of controlling (advanced media competences), usability remains an issue (Carmichael et al., 2003; Freeman & Lessiter, 2001; Lessiter et al., 2003). Gunter specifically links usability issues to the take up of interactive services such as government online services (especially those particularly aimed at the elderly, arguing that:

“The first step must be that viewers as consumers become accustomed to the DTV environment as a 'normal' scenario as far as TV watching is concerned. While practice in the use of the range of basic DTV facilities will produce competence, consumers must be encouraged to engage in trial and error exercises. More must be done up front by manufacturers and retailers as well as government to inform consumers about what DTV can do and how it works – at least at the basic level of use.” (Gunter, 2004)

Internet and mobile phone

Creativity in relation to internet and mobile content is being researched in relation to responses to interactivity as well as content creation, for both re-position the audience or user as producer as well as consumer of messages. Research on people's interaction with content and services in the UK provides mixed results. Research in the 1990s on people's interaction with online newspapers suggested that some were taking up the opportunity to email newspapers, though it also seemed that journalists might not respond to users' emails, thereby limiting the interactive possibilities:

“Evidence concerning the take-up of interactive facilities has been conflicting. In the United Kingdom, both the Times and Electronic Telegraph were receiving up to 100 emails a day in 1996... According to staff at News International, The Times and Sunday Times were receiving six times that average by the beginning of 1999 ... The Guardian reportedly received as many readers’ letters via email as through other media” (Gunter, 2003: 71).

We highlight in this report two examples of arenas in which the public interacts with digital content and services, online public services and online health services. Although they note that they have not collected data specifically concerned with the public’s interaction with online public services, the authors of the recently completed European e-Living longitudinal study write:

“The evidence we have for the continued ‘exclusion’ of various social and economic groups from access to ICTs and, in particular, to internet based services should cause some pause for thought. If overall penetration rates are stalling (Raban, 2004) then what social benefits accrue from online public services and to whom do they accrue? They rather clearly accrue to those best able to take advantage of them – the well educated, the skilled and the well-off.” (Holm, 2004)

An important part of online public services is the case of e-voting. Research with focus groups, the majority of whom considered themselves computer literate, found that while the public is enthusiastic about the advantages that e-voting can bring – such as enabling people to vote when they are unable to visit a polling station; nonetheless they are very concerned about the potential risks, particularly the security of the system, the possibility that some might be excluded, and the potential for voters to be influenced by others (Oostveen, 2004). The use of, and interaction with, online public services will (unsurprisingly) be shaped by issues of access and familiarity with the technology, familiarity which research suggests grows out of regular use.

Qualitative work in the UK and elsewhere is exploring the value of participation in online health forums for the people who take up this opportunity (see Case study: Understanding health information). Orgad suggests that “people use the Web, to help themselves, for example, to gain support in coping with chronic illness or a traumatic stage of life” (Orgad, 2004a). Yet the e-Living study found that only a small minority (7%) reported obtaining medical assistance online in the 3 months prior to the e-Living 2002 interview (Holm, 2004):

“Yet again we would caution that those who are most in need of easy access to health information may well be those who remain ‘digitally excluded’ and we would echo some of the calls for a focus on ‘digital literacy’ to help citizens identify those sites and information services which are reliable and evidence based rather than attempting to enforce some sort of formal control or regulatory system” (Holm, 2004).

Research into these two areas of public interaction with digital content and services both emphasise the issue of the link between the social inequalities which shape access, and the possibility for members of the public to interact with online products and services. At the same time, Orgad’s research does suggest that some people are finding interaction via the internet a useful and important activity, although she

does also strongly emphasise both the cultural specificity of this activity as particularly US-American, and the socio-economic factors shaping who participates online (Orgad, 2004b).

Case study: interacting with politics online

Context

In the debate over e-democracy, the public or user is positioned not as consumer or skilled worker (as in the digital divide debate) but rather as citizen. Academic research debates whether the internet facilitates political participation, revitalising the democratic process. It also asks whether the mass communication model - with its centralised organisation, elite gatekeepers and established relations with institutions of power - no longer has a monopoly, with new opportunities for the public to communicate, connect and deliberate online.

In policy circles also, it is increasingly asserted that “internet access has become a basic entitlement of citizenship in the digital age” (Murdock, 2002b: 386) and that there threatens to be what Norris terms a “democratic divide”, distinguishing “those who do and do not use the multiple political resources available on the internet for civic engagement” (Norris, 2001: 12) (see also Gandy, 2002).

Following Habermas (Habermas, 1969/89), Bentivegna argues that the internet is “democratic” in the sense that, while each of its features are not intrinsically new, in combination, the internet introduces a qualitative shift in the potential for democratic communication (Bentivegna, 2002). The features she identifies include interactivity, enabling citizens to be senders as well as receivers of messages; the facilitation of communication not only between elites and citizens but also among citizens; disintermediation, by which the power of traditional gatekeepers is undermined in favour of more direct communication among interested parties; the reduction in entry costs to participation for small groups/individuals; the speed of communication together with flexible organisation across a considerable geographic range; and the relatively free circulation of information and opinion.

On the other hand, some are concerned that the internet may prove undemocratic, reducing the diversity of voices and increasing the power of dominant commercial players (McChesney, 2000). Here, then, is a rich agenda for empirical research on public participation.

Findings

- Worldwide there has been an explosion in projects and initiatives – on global, national and, most often, local levels – to exploit the potential of the internet to draw citizens into civic participation and so enhance democratic participation (Tsagarousianou et al, 1998). One success was UK Citizens Online Democracy in 1997, which conducted the first online scrutiny of proposed government legislation (the Freedom of Information White Paper); one third of the many who participated were individual citizens, deliberating with each other and with the government minister responsible (Coleman, 1999; Tumber, 2001). Another was the Move On campaign in the US to persuade Congress to drop impeachment proceedings against Bill Clinton in 1999, mobilising half a million online messages sent by citizens to Congress (Graber, Bimber, Bennett, Davis, & Norris, 2004).
- At the level of local communities, Rakow’s account of a “televillage” in North Dakota, USA provides valuable lessons for the democratising potential of the internet in community decision-making, though her story ends with a secret business deal, through which the local (commercial) paper takes over the (public) city website (Rakow, 1999). In the Blacksburg Electronic Village, the experiment proved disappointing for a different reason. Although in this community the internet was used effectively to mediate local, social capital-building activities, those involved were precisely those in the community who were already actively involved, already high in civic engagement and social status, the internet merely providing a new conduit for their established interests and activities (Kavanaugh & Patterson, 2002). In that case, Jankowski observes that the wired community had been constructed top-down by local elites, positioning ordinary residents as consumers rather than citizens from the start (Jankowski, 2002).

- Even when online community is organised in a more inclusive, democratic fashion as a virtual public sphere, it seems that familiar social patterns are reasserted online. For example, in the Digital City Amsterdam, “now one of the largest online communities in the world” (Slevin, 2000: 68), citizens transferred offline norms online in order to govern this space (limiting space for each “resident”, banning pornography, vandalism, harassment, etc), rather than developing new and original forms of social organisation.
- Away from community-centred and e-democracy initiatives, citizens have also been challenging more established media for the right to interpret public discourse, particularly through citizen-created online magazines or “blogs” (Boczkowski, 2004). One report calls this “participatory journalism” (Bowman & Willis, 2003). Some have suggested that they constitute a new kind of governing institution, a “fifth estate” that “keeps watch over the mainstream media” (Drezner & Farrell, 2004b).
- In the US particularly, bloggers have been influential in, for example, securing the resignation of Republican Senate majority leader Trent Lott (Drezner & Farrell, 2004a; Regan, 2004). At least from the US, there is evidence that media elites including leading editors, publishers, political reporters and influential columnists all read blogs. However, of 140 editors, reporters, columnists and publishers who responded to a survey about which blogs they read, the top 10 blogs were responsible for 54% of the citations, and the skew was even more marked among “elite” publications (Drezner & Farrell, 2004a). The authors caution that:

“To the extent that blogs become more politically influential, we may expect them to become more directly integrated into ‘politics as usual,’ losing some of their flavor of novelty and immediacy in the process. The most recent evidence of co-optation was the decision by both major parties to credential some bloggers as journalists for their nominating conventions.” (Drezner & Farrell, 2004a)
- We lack comparable evidence in the UK regarding the spread, distribution, and influence of blogging. One study by the Hansard Society attempts to understand what blogging might mean for politicians and the political process, arguing that “it is as an extension of media freedom that blogging should be taken seriously” (Coleman, 2004). The media literacy required – in terms of access, skills and creative participation – represents a key issue for future research.

Implications

- Online skills increasingly give more opportunities for citizens to participate in politics, either directly, through collective or community initiatives, or as commentators and bloggers. One important question could well be which citizens have this opportunity, as research about who participates is patchy to date.
- It seems easier to attract the already-interested or politically active than it is to draw in new initiates to democratic deliberation: consequently, initiatives directed at the marginalised risk instead further advantaging the privileged. At the worst, “individualisation, unequal access, and disenfranchisement may be the outcome of net politics” (Golding, 2000: 176)

Section 10

Creating media

There is a consensus that in addition to the ability to *access* and *understand*, media literate people should also be able to *create* media content. There are many reasons why *creation* is a central component of media literacy. Most obviously, just as print literacy encompasses writing as well as reading, media literacy should involve creating as well as receiving, especially as the tools to create and disseminate media are ever-more widely accessible. Also of considerable importance is the relation – as yet little researched – between amateur production and the creative industries for which the UK is justly known (Cornford & Naylor, n.d.; DCMS, 2001a). Further, in research on children and young people's involvement in production it has been suggested that experience of production encourages a critical understanding of media products and their production processes and this suggests that such experience would encourage critical viewing in adults as well. Small-scale research supports this supposition (e.g. Thumim, in prep.).

In short, in a fast-changing media environment, the ability to interact with and create media is becoming of increasing importance to cultural expression, citizen participation, and for developing a skilled workforce and innovative creative industries. However it must be noted that the term *create* is extremely broad and we should note the difference in opportunity and skill development between the member of the public who makes a digital story, writes a web-log, or sends an email to a television programme. There is always the promise that the computer “will democratize cultural production,” but we must also guard against celebratory views of everyone as producers (Sefton-Green & Buckingham, 1998). Indeed, as we shall see, research suggests that:

“Despite the growth in the numbers of internet users, a rather small minority of these users has the capability to use the internet in ways that are creative and that augment their ability to participate effectively in today's knowledge societies” (Mansell, 2004: 179).

Broadcast

Typically, the public has few opportunities to create audiovisual content, though amateur and more formal or professional opportunities exist. Exceptions include those engaged in community/access radio, in amateur film or video production and, in limited ways, users of digital cameras, and so forth (Merry & Titley, 2002). Community-based initiatives often have a specifically political purpose, and are often developed in the context of community-building practices (Echchaibi, 2002; Jankowski, 2002). Research also indicates that there are barriers to people's participation in such initiatives based on people's socio-economic status and gender (Gunnell, 2002; Rodriguez, 2001).

Engagement in community access radio/television/print has a long history dating back to the 1930s (Jankowski, 2002). In the 1960s and 70s the direct cinema movement in the US and Cinema Verité in France offered a specific response to a perceived failure in attempts to represent “ordinary people”. Both movements claimed to represent “ordinary people” with minimal mediation, and influenced subsequent documentary television and development of access television in Britain the 1970s (Corner, 1994).

The BBC's Community Programmes Unit's *Video Diaries* and *Video Nation* are the most well known outputs of this unit. In these initiatives members of the public were trained to use camcorders and invited to film material from their daily lives. These were then edited by the BBC and shown on terrestrial television (Carpentier, 2003; Dovey, 2000). The impact of this in terms of media literacy has been little evaluated (though see the Case study: Media production by members of the public).

The *Public's View 2002* records 25% of the UK population owning a video camcorder (Towler, 2002). An earlier study of UK television consumption found that 17% of survey respondents owned camcorder, but had little to say regarding its use (Gauntlett & Hill, 1999), and such studies now merit updating and extending. It may be that the published research literature underestimates the extent of actual activity in relation to amateur audiovisual production. Certainly, anecdotal evidence on the use of home video, combined with the sales of camcorders, web-cams, scanners, suggests that such activity may be widespread. This is often part of being a fan: "fan art is important as a means of commenting on the original program, as a form of cultural creation with its own aesthetic principles and traditions" (Jenkins, 1992: 248).

Since it is recognised that the experience of content production improves children's media literacy, research is needed on whether the same is the case for adults. If so, the provision of opportunities to create content would, in turn, enable media literacy for adults. The internet opens up new opportunities for content production (through sending digital photos, use of web-cam, creating websites, etc), raising many as yet barely-researched questions regarding the nature, reach and consequences of such activities.

Further, research is needed to determine whether adults lack access to technology or skills training, or whether they have access but do not take it up in significant numbers, or indeed whether they are gaining skills in audiovisual content production, in which case this would require both recognition and evaluation. The evidence thus far suggests that there are widespread initiatives encouraging adults to take part in content production in the broadcast domain (see Case study: Digital storytelling) and many of these are now converging with online (e.g. *Capture Wales*; *Telling Lives*; *Video Nation Online*).

Internet and mobile phone

Some of the grander hopes for the internet are centred not on entertainment or even on education, but on participation – as a citizen, as a cultural actor, as a participating member of a social group. For these hopes to be realised, the public must be sufficiently media literate, and sufficiently connected to civic organisations, not only to receive but also to produce content. Producing content may be conceived fairly minimally – sending emails, visiting chat-rooms, creating a web-page – but even this, if used for civic or cultural goals, may be of significance. However, while there are many hopes for the potential for members of the public to participate in online debate, the actual levels of participation are often very low (Jankowski, 2002; Schneider, 1996, 1997).

Producing content may also be conceived more ambitiously, in a manner generally not possible for audiovisual media, precisely because in relation to the internet the limitations on volume and accessibility of content, and on the tools to produce content, are modest. The world wide web includes many sites constructed by ordinary members of the public, both as individuals and as part of their local or community roles:

“The web directory Yahoo lists 32,701 personal home pages in its home page section as of April, 2002, 8% of which are collective home pages run by families (2,172), or informal small groups (351).” (Doring, 2002)

What is less clear is what proportion of the population has or wishes to thus participate in the construction of the content. Based on her review of thirty empirical studies, Doring suggests “tentatively” that “Home page owners...constitute a minority of 10% within the internet population” (Doring, 2002). In the US a Pew Internet phone survey conducted in 2003 found that “44% of Internet users have created content for the online world through building or posting to Web sites, creating blogs, and sharing files” (Lenhart, Horrigan, & Fallows, 2004). However only “13% maintain their own website, and between 2% and 7% of internet users publish a web-log”. Research is needed to examine the nature and reach of such activities in the UK.

Research has suggested that particular sectors of the population are more likely to participate in the production of content: “students seem to be the most active group of home-page owners overall” (Doring, 2002), and her review indicates that more men create home pages. It is interesting to note that these are the sectors of the population (male, highly educated) that research has found are more likely to take part in community radio initiatives (Gunnell, 2002; Rodriguez, 2001) (indeed, they mirror the sectors of the population more likely to be online). Thus it seems as though largely the same issues which shape who gets involved in the creation of old media are also shaping who gets involved in the creation of digital media, and who does not. However, the Pew research suggests that in the US at least the gender gap in internet content creation (and use) may be reducing (Lenhart et al., 2004).

Case study: media production by members of the public – BBC digital storytelling

Context

The digital storytelling projects *Capture Wales* and *Telling Lives* are examples of projects that involve the BBC in media literacy training. The BBC's digital storytelling workshops begin with a storytelling circle, followed by a day of image capture, and culminate in three days of production workshop during which the ten participating members of the public are taught to use non-linear computer editing to make short (usually) stills-based films. Participants produce two-minute digital stories using voice-over recording of their own stories combined with photographs from their own collections. The digital stories are displayed on BBC websites, and in addition a selection are shown on television.

Digital storytelling began in the US, particularly at the Centre for Digital Storytelling in Berkeley, California (Meadows, 2003a, 2003b). Digital storytelling initiatives are now taking place internationally (Rennie & Hartley, 2004). However, because these initiatives are relatively new, no established method for reviewing this kind of work has emerged and little empirical work has yet been completed, though much is in progress (Kidd, 2004; Rennie & Hartley, 2004; Thumim, in prep.)

Findings

- While storytelling and having “a voice” were seen as important, “it was learning the technical skills that performed less well, though they were recognised as an important means to an end” (Sparkler, 2004).
- Digital storytelling contributes to the media literacy agenda in terms of *access*, *understanding* and *creation*: it familiarises people with new media technologies, has the potential to encourage people, through the experience of production, to view media productions more critically, and enables people to *create* media. The research suggests that different opportunities in terms of time commitment would enable more different people to take part. Indeed BBC Wales is developing different formats with this in mind.
- The creative aspect of digital storytelling provides a good vehicle for introducing people to media tools since people are very enthusiastic about the opportunity to produce their own digital story. However emphasis should be placed on ensuring sustainability for participants beyond the end of a particular workshop.

Implications

A range of barriers and enablers can be identified from this case study:

- The term “media literacy” itself might actually function as a barrier to the aims and goals of a media literacy agenda. Indeed, by not foregrounding the skills training, but rather focusing on the storytelling, people who might not otherwise approach these media technologies are introduced to them.
- In the projects discussed here, participants gained skills in, as well as a general demystification of, complex technologies. Evaluative research suggests that in making their own content, participants gain new knowledge of how television in general is constructed.
- The resource-intensive nature of such projects means that limited numbers of people can take part. Projects involving a sizeable time commitment may deter some people from taking part while attracting others. Further, marketing is an issue: while participants are enthusiastic, the public at large do not always know about the existence of these projects. Partnerships between media organisations and community groups are required to facilitate sustainability.

- However, research on community media has shown that the people who take up the opportunity to participate are often drawn from the already media literate, young, middle-classes (Gunnell, 2002; Rodriguez, 2001). Outreach projects such as digital storytelling as run by the BBC can tackle this problem because they reach a broader range of people including those with no experience of computers.

Section 11

Conclusions

Summary of findings

- Ofcom’s definition of media literacy works well in guiding a reading of the academic literature. However, within the academy, definitional issues will continue to be debated. Ongoing debates include whether media literacy is most usefully thought of as a societal capacity (‘a media literate society’) or an individual competence or skill; whether and how research on “media literacy” and “information literacy” can productively be brought together; and the question of how expectations about the interests and skills of media viewer or user are inscribed within media practices (institutions, representations, design) so as to limit or facilitate opportunities for the citizen-consumer.
- In evaluating barriers and enablers, we note the paucity of research about how these factors interact. The key factors we have identified and discussed as **barriers** are: **age, socio-economic status (including education and income factors), gender, disability, ethnicity, and proficiency in English.**
- The key factors we have identified and discussed as **enablers** are: **design** of technologies and contents, adult education opportunities, **consumer information and awareness, perceived value** of media goods and services, self-efficacy (skills and confidence in using new media technologies), **social networks** to support in gaining and maintaining access, **family composition** (especially, having children in the household), **work involving the use of computers** and new technologies, **institutional stakeholders.**
- Research on media literacy also faces a series of methodological challenges, from conceptual definitions through to evaluation of policy initiatives. The trend is towards multi-method, qualitative and quantitative research designs. It is recommended that future research considers conducting longitudinal surveys to chart change over time, and builds on the range of innovative, in-depth qualitative methods being developed in media research.
- In identifying key research gaps and priorities, we have divided them according to the framework of access, understanding and creation that has structured this review.
- In **access and competences**, the priorities are research into inequalities and excluded population segments; research into advanced forms and uses of content and services on digital, online and mobile media; and the public’s ability to manage their personal media and communications environment.
- In **comprehending and critiquing media**, more research is needed into understanding and critical evaluation of online content, particularly online news and political information. As advertising practices change, more research is needed into the adult population’s awareness of promotional practices. Research is also needed into content “legibility” as a complement to levels of public literacy.
- In **interacting with and creating media**, where least work has been conducted, research is needed into the range of experiences of content creation; the social

benefits of content creation; and the relationship between creative activities and increased critical understanding of media production.

- Priorities that span the dimensions of media literacy include research into consumer choice within media (and constraints on this); the range, depth and sophistication of media uses in everyday life; and the skills and requirements or standards that underlie different levels of media literacy. Also, we need more evaluations of media literacy programmes and initiatives in order to assess the effectiveness of media literacy interventions.
- Research must also investigate the linkage between media and media literacy: how much do specific barriers and enablers relate to particular texts or technologies? How far is media literacy medium-specific? Finally, we note that the media themselves can either facilitate or undermine media literacy, and that media providers have a key role to play.

Revisiting the definition of media literacy

In this report, we have reviewed a wide range of dimensions of, and research on, media literacy. From the outset, we identified the *purpose* of media literacy as a central concern. Academic research points to three fundamental societal purposes to which media and communications and, therefore, media literacy, make a substantial and growing contribution in a media-saturated “knowledge society”. These are (i) democracy, participation and active citizenship; (ii) knowledge economy, competitiveness and choice; and (iii) lifelong learning, cultural expression and personal fulfilment.

We acknowledge, however, that the definition and scope of media literacy will continue to be much debated, for diverse intellectual traditions and economic/social issues are at stake. Indeed, the purposes of media literacy will continue to be discussed, since these are concerned with societal goals, values and choices. In drawing our conclusions, we recall that the present review is a purposive review: hence, we draw out three key distinctions which run through all the debates on media literacy, below, and then in the last section, we summarise our findings in terms of the four questions asked at the outset.

First, a key distinction is between **media literacy as a societal capacity or an individual competence**, a social practice or an individual skill. In determining the purpose of media literacy, the inevitability of differing levels of media literacy across individuals within society must be recognised. The purpose of media literacy policy cannot be to ensure that everyone reaches the highest level on all dimensions. But one would be concerned if a certain proportion of the public did not do so. And one would be concerned if a certain proportion did not achieve some minimum level also, even though the early adopters will always be “ahead” of the majority, while others, whether as a result of disadvantage or choice, will always risk being “left behind”. Yet there are growing calls for a rights-based approach to self-expression and creative capabilities, suggesting that citizens are entitled to public policy intervention to promote such skills (Mansell, 2004: 179). The questions that follow for media literacy policy are:

- Given differential take up of, say, the latest mobile device or the latest digital news service, or given that some will choose, for example, to create a blog or a web-page and others will not, what information, opportunities and skills should be available to all, and how can this be achieved?

- Further, what factors structure the field of information, opportunities and skills, so that some are disadvantaged, excluded, even vulnerable? What are the upper and lower bounds of the range of media literacy in society: how far behind can some be permitted to fall, how far ahead must some people get; and how can these differential levels of media literacy be assessed?

A second key distinction is between “**media literacy**” and “**information literacy**”. The former has been defined and developed in relation to well-established audiovisual media, the latter has been defined and developed more recently in relation to systems of representing and distributing information. As broadcasting, telecommunications and computing increasingly converge, diversify and specialise, the emerging array of electronic forms of media, information and communication available to the general public are all encompassed by a converged concept of media literacy, as envisaged in the 2003 Communications Act. In this review, we have sought to identify ways in which the audiovisual tradition of media literacy can learn from the information literacy tradition, and vice versa.

- Traditionally, media literacy has been more focused on cultural matters, information literacy on employment skills, and with these different foci, both have been closely linked to pedagogy.
- Each could be strengthened in relation to supporting citizenship and participation, with development of a more critical dimension of information literacy having something to learn from approaches to media literacy.
- Similarly, each is comparatively weak on the creation of meanings or information, though media literacy may here have something to learn from approaches to users, user-centred design and user-generated content.

We have argued that both perspectives are central for developing policy regarding media literacy. Further, as media and information technologies converge, we need to explore more deeply how far these two traditions of framing and researching literacy could and should converge.

The third key distinction is between media literacy as a property of the individual or the society alone, and **media literacy as the result of the interaction between people and media**. More work is needed to unpack how far the conception of the media viewer or user inscribed within media practices (institutions, representations, design) limits or facilitates the skills and opportunities of the citizen-consumer. After all, while media literacy is, of course, a matter of individual and societal skills, knowledge and competences, it is also dependent on the institutions, textual forms and technologies that mediate information and communication.

The media, in short, have built into their design and dissemination an imagined or anticipated expectation of how they will be used, and what knowledge and skills are required to do so (Eco, 1979; Isaacs & Walendowski, 2002; Livingstone, 1998; Woolgar, 1996). If a book is badly written or type-set, we do not call the reader illiterate. If the news provides no accessible information about its sources, journalist conventions or editorial policy it is not the viewer who is at fault in struggling to evaluate the message. If a search engine appears to offer unbiased access to information resources while operating with commercial priorities invisible to the user, this limits how the user can critically evaluate the information accessed. Media literacy, in short, derives from an effective interaction between the public and the media – the term “media literacy” is thus better thought of as referring to a process rather than a “thing”. The effectiveness of this relationship may be both facilitated and

impeded by individual or societal factors or by a range of institutional, textual and technological factors which shape the interface with the user or audience.

Barriers and enablers of media literacy

Throughout this review we have sought to identify key barriers and enablers of media literacy, as identified in the academic literature. Often, barriers and enablers tell the opposite sides of the same story: lack of finance acts as a barrier to access, for example, while disposable finance acts as an enabler of access. Main factors that have been identified as affecting media literacy are summarised below, though the list is not exhaustive. Factors are classified as barriers or enablers depending on how they are typically discussed. The extent to which each of these is grounded in strong empirical evidence varies although, in our judgement, the balance of argument and evidence overall supports the inclusion of all factors listed below.

Frequently, the barriers interact with each other, with the combination of older age and lower SES, for example, or of lower income and disability, compounding the effects of individual barriers. The same holds for the enablers, with multiple advantages generating a virtuous circle that magnifies the benefits of media literacy. These interaction effects are, however, much less well understood, however, being too little researched. Research designs often focus on one barrier in isolation or fail to examine the interactions among the multiple factors being measured. The most influential factors may not be, of course, those most amenable to intervention: key to the task of understanding how to intervene in the complex causal web that advantages some and disadvantages other is identifying how particular interventions will alter the overall balance of multiple, interacting factors.

Barriers

- **Age.** Age frequently stratifies the population in their access and response to media, but it works in distinct and often contrary ways. Older people generally have lower levels of access to new media, but their critical understanding can be greater than for the young. Age is also not a simple, linear measure – for both the youngest and oldest groups, different factors come into play, resulting in highly specific but often very marked barriers to media literacy.
- **Socio-economic status (SES).** Across most research domains, SES is a clear barrier, especially to the access but also to the understanding and creation dimensions of media literacy. While this suggests that digital in/exclusion can be explained in similar terms to social in/exclusion, there is more uncertainty over whether the SES effect is primarily one of **income, education, social class** or some combination thereof. For example, income seems to matter more for basic access (e.g. to the internet); education matters more for critical understanding. The cases in which SES is less of a factor are of particular interest also (e.g. access to mobile phones or, before them, the VCR, though SES still stratifies “advanced” uses of these technologies).
- **Gender.** Traditionally a key discriminator of access and skills, gender is, on many basic measures, becoming less important. However, it remains significant in relation to some of the more advanced skills underlying access (navigating, controlling, regulating); this is particularly evident in content creation where men outnumber women in website creation and community media. Since generally it tends to be mothers who mediate and regulate children’s use of media (including the internet) at home, gender inequalities may also impact on parenting.

- **Disability.** Overall, disability is a key barrier for a significant segment of the population, interacting also with other barriers to multiply exclusion. For example, overcoming the negative effects of disability on access requires financial and social resources. But also, different forms of disability matter in different ways depending on the features of the technology and the aspect of media literacy (or the use of the technology). Research is particularly lacking on whether and how different technologies increase – or in some contexts, overcome – the effects of different kinds of disability.
- **Ethnicity.** There are some findings in the research literature that ethnic minority groups are comparatively disadvantaged in relation to certain dimensions of media literacy. As with other barriers, it is unhelpful here to treat all minority groups as equivalent. Nor is it clear from research whether how far and in what ways the observed differences in, say, access, reflect complex but important interactions between ethnicity, socio-economic status, and gender.
- **Proficiency in English.** Most media texts are in English, as are the manuals for using media goods and services, together with the help systems, consumer guidelines, advice phone lines, etc. If English is one's **second or subsequent language**, or if one's level of **print literacy** is low, proficiency in English expression (oral and written) is surely a barrier. Unfortunately, little or no research has addressed this issue, and rarely is this measured in surveys. In examining skill levels in reading, writing, prose interpretation and information use, the OECD (2000) claimed 15% of UK adults lack key skills, with consequences for the ability to access, understand and create in media and information contexts.¹⁴

Enablers

- **Design.** If media and communications texts and technologies are well-designed for their users, the demands on the public's media literacy skills are reduced; conversely, poor design places commensurately greater demands on media literacy. As we have observed throughout this review, responsibility for increasing media literacy, especially in a fast-changing communications environment, lies with those "behind the screen" as well as with those in front of it.
- **Adult education.** Institutions and courses relating to or using media, communications and/or information systems in adult/further/higher education. The curricula of these courses is precisely focused on increasing levels of access, understanding and, more than elsewhere given the facilities available in educational institutions, creation. As noted earlier in our previous review, there is evidence of greater demand for such educational opportunities than is available, albeit among certain population segments.¹⁵
- **Consumer awareness.** Research consistently finds that people under-use the functionality of the media they possess partly because they are not aware of the facilities and services available to them. Public response to consumer awareness campaigns (e.g. bringing advice on internet safety to parents) is

¹⁴ Specifically, they examined "the knowledge and skills needed to understand and use information from texts including editorials, news stories, brochures and instruction manuals", together with "the knowledge and skills required to locate and use information contained in various formats, including job applications, payroll forms, transportation schedules, maps, tables and charts" (p.xiii).

¹⁵ As other reviews have also noted (Bazalgette, 1999; P. Merry, and Titley, G., 2002; Tuckett & Sargant, 1999). Tuckett and Sargant add, "social class, age and the length of initial education all continue to show a powerful effect on adults' participation".

frequently very positive, but often short-lived and not always effectively targeted or followed through. Consumer awareness is a key factor in generating trust in media contents and institutions and in the regulatory context and, where appropriate, in increasing critical literacy (and so reducing “blind” trust).

- **Perceived value.** The lesson of digital inclusion initiatives with marginalized groups (or those with low media literacy) is that without the strong perception that the internet offers value for them, the outcome of any intervention will be disappointing. Instead of merely going online for the sake of it, for example, the internet has perceived value, linking to and building on individuals’ or communities’ pre-existing interests and purposes, media literacy can be significantly increased.
- **Self-efficacy.** As the outcome of the combination of access, education, experience, and awareness, self-efficacy is itself a key component of media literacy, representing a mix of skills and self-confidence in using media. It is also, however, an enabler of further increases in media literacy, for skills beget skills and confidence leads to more exploration and learning. Conversely, lack of confidence is a barrier.
- **Social networks.** Particularly in relation to the skills required to access new digital technologies, research shows that informal technical support from local contacts is often very effective in gaining and, especially, sustaining access. Since many households contain underused, out-of-date, or broken equipment, the resources required to sustain access are clearly demanding. Unlike for the equivalent commercial support available, informal networks cost nothing financially and may serve to increase social capital in the neighbourhood. Social networks matter in other ways: for example, the more people one knows who use, say, email, the more incentive one has to use it oneself; the more one’s community is “wired”, the greater the benefits of participating online.
- **Family composition.** In two areas especially, having children in the household increases media literacy: in terms of access to new media, households with children “lead”, both because children push for new acquisitions and because parents wish to provide as best they can for their children; in terms of understanding and creation, especially on the internet, there is growing evidence that children are reversing the generation gap and informally teaching or guiding the learning of their parent(s).
- **Work.** The workplace enables those who work with new media technologies, offering a range of resources. These include providing experience of technological resources and training programmes in their use, provision of electronic devices for use outside work, informal technical backup for domestic technologies, cast-off PCs to take home, and so on. The transfer effects from work to home/leisure have been little studied, however.
- **Institutional stakeholders.** People are often motivated and enthusiastic about the changing media environment, this leading them to try out new opportunities. They are simultaneously uncertain, anxious and frustrated with their initial experiences. The more that regulators, educators, consumer groups, industry and government work together to enable people to deepen and broaden their experience and expertise of media, information and communications, the more media literacy will be increased (Dennis, 2004b).

Innovative methods

Researching media literacy faces some serious challenges. Media literacy is concerned with people's generally implicit, yet complex and subtle understanding of the media, and these are difficult to ask about directly. It may be concerned with things they cannot do or have not seen the importance of, although when asked, social desirability may dictate that they claim greater knowledge than is warranted. Specific kinds of knowledge may be tested, following the model of formal education, but this may say little about actual practices in context, and it may put off certain groups more than others. Theories of media literacy for adults, unlike those developed in media education for children, say little about levels, standards or progression. This makes the evaluation of policy initiatives over time particularly challenging, and an extension of the approach to standards developed for information literacy may be useful (e.g. SCONUL Advisory Committee on Information Literacy, 1999).

Moreover, the research literature contains few highly-regarded models of either evaluation studies or studies that track changes. As outlined in our previous review, models for assessing "public awareness and understanding" are well-established in adjacent fields, notably: media education, based on testing for graded levels of achievement following delivery of a formal curriculum; the public understanding of science, where survey methods are used to measure aspects of public understanding and knowledge in the scientific domain; the measurement of print literacy among the adult population, again based on educational testing; and the evaluation of public communication campaigns to alter health practices (Livingstone & Thumim, 2003).

Perhaps in response to these and other difficulties, a wide range of research methods are employed in media, communication and information studies, and most have been applied to the study of media literacy. The focus has been more on analysing the nature of media literacy across diverse populations and for different media, with some attention to barriers and enablers, rather little to levels of media literacy and still less to analysing the effectiveness of initiatives to promote media literacy.

The broad trends in media and audience research is towards the triangulation of qualitative and quantitative methods and towards a pragmatic multidisciplinary (see Alasuutari, 1995; Bertrand & Hughes, 2005; Deacon, 1999; Schroder, Drotner, Kline, & Murray, 2003). The aim is to overcome, or compensate for, the disadvantages of certain methods over others. For example, even with good design and a range of checks to limit biases and social desirability factors, surveys still rely on self-reported attitudes and practices. While qualitative methods sacrifice the advantages of surveys in terms of the diversity and representativeness of the population surveyed, they gain in the ability to pursue issues in greater depth, to contextualise findings, to capture ambivalences and uncertainties, and to cross-check claims against observational data.

Rather than being led by particular theories or disciplines, best practice in research methods currently seeks to integrate useful and effective methods from diverse sources into a multi-method research design. Beyond this general orientation, several specific messages may be drawn out of the literature for future research on media literacy, and we have noted these throughout this report. We summarise these recommendations below:

- Largely for reasons of limited funding, the research literature contains few if any longitudinal studies. Consequently, it is difficult to determine the specific factors that improve (or undermine) media literacy among the population. The lack of resolution, as yet, on the basis for standards (or the definition of levels) of media literacy also hampers assessment of changes in media literacy over time. Cross-sectional panel studies tend to ask different questions in different waves and are less satisfactory than longitudinal studies when it comes to identifying causal explanations for observed changes, making the identification of barriers and enablers hazardous. Well-designed longitudinal studies, based on repeated administration of survey questionnaires, also require a highly specialised knowledge of research design and statistical analysis. Nonetheless, longitudinal survey designs have much to offer in addressing changing levels of media literacy over time and evaluating the relative importance of a range of barriers and enablers (Anderson et al., 2004; Anderson & Tracey, 2002; Kraut et al., 2002; USC, 2004, September).
- There is a strong trend towards increasingly in-depth qualitative methods. This takes several forms:
 - The elaboration of the focus group method, extending the time taken and the complexity of the tasks, games or dilemmas presented to respondents, in order to draw out more subtle responses to specific media texts and technologies than simple opinion statements (e.g. Barbour & Kitzinger, 1999; Eldridge, 1993; Schlesinger et al., 1992). For example, in one series of focus group, participants were asked questions about their understanding of a particular conflict, and the information sources they draw upon. Each group was then given a series of photographs from TV news coverage of the conflict and participants were asked to imagine that they were journalists and write a news story using the images as stimulus. The pictures, the stories and the participants' interest in and understanding of sources were all then discussed (for example, see Kitzinger, 1993; Morrison & Macgregor, 1993; Philo, 1993; Philo & Berry, 2004).
 - The growing use of ethnography or participation observation, in order to observe behaviour in its physical and social context, to integrate and sometimes contrast talk and action, and to analyse relations among different individuals (pupils and teachers, parents and children, those who use and those who work in online centres, etc) (e.g. Bird, 2003; Ginsburg, Abu-Lughod, & Larkin, 2002; Hoover et al., 2004). For example, Wellman (see for example Hampton & Wellman, 2002) has been a pioneer in examining how online ties, such as those we might observe in emails, blogs, or community websites, might be connected to offline social networks. While not directly addressing media literacy as it has been used to date, this type of online-offline method can provide robust data about the interaction between social inclusion or exclusion and online media usage.
 - Establishing resource-rich sites in which people themselves can create media content, and then combining interviews, observations and analyses of the contents produced to understand both the enablers of content creation and people's implicit understanding of the media processes they and others engage in (e.g., Gauntlett, 1997). For example, in the Case study on media production by the public, the qualitative research reviewed combined interviews with people working on community-based creative

projects, interviews with participants, and interviews with “Tippers. People who were very keen on media and learning new things but had not taken part in the projects” (Sparkler, 2004). This case study approach is vulnerable to differences across the projects, for these are indeed diverse, but can be sensitive to contextual factors that influence *how* and *why* adults use the technologies, *what* content they make, and what resources are required, since it is widely agreed that this is a gap in research (Thumim, in prep.).

- There is a growing research literature exploring online activities – communication, community and creativity (Baym, 2002; Hine, 2000; Lyman, 1999; Slater, 2002). These developments seem to us particularly promising for future research. In one example, Drezner and Farrell (2004a) made use of link analysis and statistical techniques to “map” the universe of online blogs, or “blogosphere,” in addition to surveying media workers and conducting an in-depth literature review.
- There are also some attempts to integrate experimental findings with observations and surveys. For example, in the field of online searching, In terms, Hargittai’s random sample experimental observation of the public’s searching skills remains a valuable guide (Hargittai, 2004). Machill et al’s German study, which combines random telephone surveying, observation and experiments, similarly provides a robust account, and the addition of questions on public understanding of search engine income, operation and regulation make it particularly interesting (Machill et al., 2004). However, one notable flaw in many search engine studies is the over-reliance on students as a research group, and studies of how socially-excluded groups might interact with search engines are markedly missing.
- We would caution that particular care is taken in assessing media literacy through opinion surveys, as such data are difficult to interpret out of context. This applies especially to research on the subtleties of access, on understanding, and on most questions relating to the creation of communications. For example, the BSA survey finds that while 65% of broadband users trust the internet as a source of news (the same proportion that trust newspapers), amongst potential and non-users both the internet and newspapers are less trusted overall, and in particular the internet is much less trusted among non users (59% trust newspapers versus 19% trust who internet news) (Bromley, 2004). Does greater trust indicate higher or lower levels of media literacy? Is there a “right answer” to such a question?
- On the other hand, for straightforward measures of access and behaviour, in charting areas of public interest and concern, and in tracking change or differences across subgroups, opinion surveys have a clear value. Here we would register two concerns. First, while their value lies in mapping opinions and behaviours across the population, too often the key variables that capture inequalities are neglected (socio-economic status, income, education, ethnicity, disability, region, print literacy). Second, much data used by industry, regulators and other stakeholders remains proprietary or, at least, not available in the public domain. In order to maximise the value of such data, especially in tracking change and in conducting secondary statistical analyses, we recommend more use is made of public access data archives.

Research coverage, gaps and priorities

In this section we highlight in brief where the research literature is strong and, especially, where key gaps exist. These are organised according to the three dimensions of media literacy – access, understand and create – together with some overarching themes. Our main purpose here is to identify what are, in our judgement, the priorities for future research.

Access and competences

The review has sought to acknowledge the complexity of ‘access’, so as to reveal the skills and competences required by the public to sustain and update their access to the range of fast-changing media and communication technologies. The priority here is to develop as thorough an account of differences and inequalities for non-computer based media as we have for information and communication technologies – little is yet known of access issues in relation to digital television, mobile phones, digital radio, or non-PC platforms for internet access.

- Specific research gaps include the lack of research into inequalities and (potentially) **excluded population segments** – by income, education, ethnicity, region, disability, age, gender, etc. Much research neglects to distinguish, or itself excludes, such groups. Commercial research often does not measure these demographics; public research often does but sample sizes may not permit satisfactory breakdowns and comparisons (especially for different groups in terms of ethnicity, disability or region); hence targeted research is required.
- Nonetheless, we know more about basic questions of access than we do of more **advanced forms of access**: research is needed to track specifically-identified key navigational skills such as internet searching, use of interactive facilities on digital television, searching using public data bases, using the full functionality of mobile phones, etc. Tracking is also needed for the barriers to and inequalities in the acquisition of key operational and control skills (installing, operating, interconnecting, updating and protecting domestic technologies, including the ability to manage payment systems).
- As the content available expands greatly, regulators (and the public) are concerned that people can **manage their personal media environment**: what are the issues in the prioritisation or avoidance of certain kinds of content and services for different constituencies of the population? This includes understanding of the options for regulating content entering the home. It also includes the importance of tracking of parental concerns, competences and practices in managing and regulating their children’s access to and use of different forms of electronic communication, together with children’s experiences of being regulated and their growing skills in self-regulation.

Understanding - comprehension and critique

The balance of research reverses for understanding: most research has been conducted on broadcast media, as yet very little exists for new media (internet, digital television, and other converged or new electronic information services). The priority here is to develop a subtle and detailed account of how people understand, trust and critically evaluate information and communication contents delivered on new platforms and disseminated and regulated in unfamiliar ways.

Specific issues for future research include the following:

- More research is needed into how people understand **online news and political information**, including what they define as news in the online environment. The question of trust is central, but under-theorised and so findings are often contradictory or unreliable. Survey research here should be complemented by qualitative work. The question of levels of critical literacy is of particular importance.
- Although viewers are well aware when they are confronted with commercial messages on television (Sancho & Wilson, 2001), the changing conditions of advertising, sponsorship, branding, merchandising, paid-for-content, and other forms of promotion through broadcasting, the internet and mobile phones, set new literacy requirements. Little research exists on adults' critical awareness of such **promotional practices**, nor on how better to support parental mediation of promotion to children (Kunkel & Wilcox, 2001; Montgomery & Pasnik, 1996).
- Research is needed into the degree of **content "legibility"** as a complement to levels of public literacy. Research on the interpretation of familiar broadcasting genres could be adapted and extended for the changing broadcasting, mobile and online environments, thereby linking processes of encoding and decoding.

Interaction and creation

By comparison with research on access and understanding, we know very little about the creation of messages among the public. Yet the changing media environment potentially serves to democratise content creation and dissemination in hitherto unprecedented ways. Never before have the tools to make content been so widely available. Research priorities include:

- The **range of experiences of content creation** remains unknown. Research is needed to identify how many people have created content, what content have they made and, especially, how far do they achieve their ambitions. We know less here about the barriers and enablers, about what skills people need and difficulties they face. Yet encouraging content creation and interactivity seems more difficult than commonly supposed.
- Content creation represents a central means by which the purposes outlined in the introduction can be advanced. Yet what kinds of content "count" or should count, in public policy? We need to know more about the **social benefits** of apparently mundane content creation (sending text messages to friends, for example) as well as about the conditions to enable self-evidently significant content creation (artistic content perhaps, or democratic participation).
- It is widely believed that creating content results in an **increased critical understanding of** media production processes. Yet, as noted earlier, little research has examined, still less established, that this is the case. Does making content really improve a critical reading of professionally-produced contents? What are the benefits and, possibly, the disadvantages of increasing the ways in which the public not only receives but also responds to, interacts with, and creates its own content?

Linking access, understanding and creation

How do these three dimensions of media literacy relate to each other? Can one have high media literacy on one dimension but not on another? It is widely assumed that skills of access precede the more "advanced" skills of content creation and that

experience of content creation enhances critical literacy. Nonetheless, the coherence and interdependence of the dimensions of media literacy has received little research attention. We suggest several reasons for this, each of which reflects a key research gap:

- For each dimension of media literacy, there is continued debate over the balance between **structural factors and individual choice**. If some do, and others do not, access, understand or create with media in particular ways, does this reflect the advantages or disadvantages of their circumstances or the choices they make as individuals. A more complex account of “informed choice” is greatly needed here.
- We need a better understanding of the **quality or sophistication of media use**. As the digital divide becomes increasingly one that differentiates advanced or sophisticated media users from those making more basic or narrow uses, we need to determine which uses increase media literacy, which advance social goals and which exacerbate existing inequalities. At present we lack an agreed framework of relevant factors and measures with which to assess these emerging differences in levels of media literacy.
- Following such a framework, we can begin to address the question of the basis for establishing **standards that underlie different levels of media literacy**. Which skills and uses constitute “creation” or “critical understanding” at different levels has been little specified. Nor is there much, especially in the media literature on levels of competence in such skills; what are the foundation levels of information skills among the general population, for example? Here research might follow the models established for broadcasting in relation to children’s media education and for ICT in relation to adults’ information literacy. Without such research, hypotheses mapping progression from basic to advanced media literacy remain problematically under-specified.¹⁶
- There are **not enough evaluations** in the literature. There are many exciting but small scale initiatives to encourage content creation or citizenship participation, for example, but these are rarely evaluated and, if they are, these evaluations are not always public. Such evaluations would be an appropriate point at which to assess whether such interventions also increase the other dimensions of literacy (e.g. critical skills or more complex judgements of trust).
- More generally, the **effectiveness of media literacy interventions** remains unknown. It is often assumed that increasing media literacy so that people can recognise rhetorical and persuasive tactics will mitigate against the overall effects of television and guide people to making “better” media choices (Wicks, 2001). However, this assumption has been rarely if ever evaluated in relation to informal and lifelong learning (although, of course, assessment is integral to the formal delivery of media education curricula through further and higher education).

Linking media and media literacy

- As flagged in our discussion of barriers and enablers, more work is needed on how the **barriers to and enablers of media literacy relate to media**

¹⁶ One recent study investigating skills for digital literacy has identified a range of skills not highlighted by the ACRL or SCOUNL standards, including photo-visual skills in reading screen pages and socio-emotional skills in understanding the “rules” of cyberspace in online communication (Eshet-Alkali & Amichai-Hamburger, 2004).

texts and technologies. Do media and communications simply represent yet another domain in which familiar factors (age, SES, gender, etc) stratify people's opportunities in ways that we already know about? Or, do media and information technologies interact with these familiar factors in very particular but significant ways, so that they reduce the effects of some barriers while exacerbating the effects of others? For example, as the delivery of public services moves from face-to-face to phone or online communication, this may advantage the elderly with restricted mobility but disadvantage those on limited budgets.

- How **far is media literacy medium-specific**, posing particular challenges as media converge, and how far do people have generic and transferable skills of access, understanding and creation? For example, since the conventions governing objectivity and balance in the news are relatively familiar for television and the press but relatively unknown for the internet, audiences must not only gain a critical understanding of online news conventions but also work out whether and when they can transfer what they know of offline news to online news. Similarly, parents used to being fairly laissez-faire in relation to their children's television use may not realise how things are different in the digital environment.
- Choices are made within a given array of possibilities, some of which are prioritised and others of which are less accessible, even precluded by the design or marketing of goods and services. One strand of research beginning to attract considerable attention is the idea that the array of choices is structured into what Lessig calls "the code": **software design** privileges some users over others, and some uses over others, building in some options as choices for the user, restricting others through the setting of defaults, for example, and rendering yet others inaccessible (Lessig, 1999). "Choice", therefore, must be related not only to the life context of the individual or community but also to the design and structure of the media and information systems.
- The **media can either facilitate or undermine media literacy**. They may inform people of the risks of internet use, for example (e-crime, privacy invasion, chat dangers) or they may stimulate more anxiety than information. They may help by making their guidelines on editorial policy accessible or producing "behind the scenes" documentaries or, on the other hand, they may blur the boundaries of reality and drama in confusing ways. As the media and communication environment grows more complex, Tumber invites journalists and other information content providers to rethink their role, from "guardians of public knowledge" to "guides to public knowledge" (Tumber, 2001). The ways in which media providers can facilitate and/or undermine media literacy remains to a significant degree an open question for future research.

Section 12

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