Internet Literacy: Young People's Negotiation of New Online Opportunities

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The "Internet Generation"?

It's just like life, you can do anything really. . . . My younger cousins, . . . they're now coming into an age where the Internet is all they've ever known. (Lorie, 17, from Essex)[1]

If the Internet is, as Lorie suggests, "just like life," for better and for worse, then the mother of ten-year-old Anna is surely observing a profound generational transformation when she says:

I'll have to come up to a level because otherwise I will, I'll be a dinosaur, and the children, when children laugh at you and sort of say "Blimey, mum, don't you even know that?" . . . Already now I might do something and I say "Anna, Anna, what is it I've got to do here?" and she'll go "Oh mum, you've just got to click the—" and she'll be whizzing, whizzing dreadfully.

For previously new media—books, comics, cinema, radio, and television—even if parents weren't familiar with the particular contents their children engaged with, at least they could access and understand the medium so that, if they wished to understand what their children were doing or share the activity with them, they could. With the advent of digital media, things have changed. The demands of the computer interface are significant, rendering many parents "dinosaurs" in the information age inhabited by their children. But, more importantly, attention to these demands blinds us to the real challenge of using digital media, namely the potential for engagement with information and education content, and for participation in online activities, networks, and communities. Indeed, the very difficulty of accessing and using the internet beguiles many adults into believing that if only they could master "clicking" on links with the mouse, then they—like their children—would be internet "experts." This is not a belief that we hold for the pen, else we'd stop teaching pupils English once they had learned to read and write, but the child who "whizzes" around the screen seems so skilled that, we conclude comfortably, they know all they need to know already.

Such a conclusion seems confirmed by the extraordinary news headlines of young hackers breaking national security codes or teenage entrepreneurs making a fortune on E-Bay, not to

mention the youthful origins of such recent successes as Google and YouTube. Young people themselves, conscious of being the first generation to grow up with the internet, concur with the public celebration of their status as "digital natives."[2] Amir (15, from London) says confidently, "I don't find it hard to use a computer because I got into it quickly. You learn quick because it's a very fun thing to do." Nina (17, from Manchester) adds scathingly, "My Dad hasn't even got a clue. Can't even work the mouse. . . . So I have to go on the Internet for him." But while these claims contain a sizeable grain of truth, we must also recognize their rhetorical value for the speakers. Only in rare instances in history have children gained greater expertise than parents in skills highly valued by society (diasporic children's learning of the host language before their parents is a good example). More usually, youthful expertise—in music, games, or imaginative play—is accorded little, serious value by adults, even if envied nostalgically. Thus, although young people's newfound online skills are justifiably trumpeted by both generations, this does not put them beyond critical scrutiny, for the young entrepreneurs and hackers are the exceptions rather than the norm.

This chapter will engage with several claims illustrated by Anna's mother, above. First, I propose that the widespread struggle among educators, parents, researchers and policy makers to conceptualize what it is (young) people "know" or need to know when using the internet is usefully resolved by conceptualizing this knowledge in terms of literacy. This allows us to draw on, and learn from, a long intellectual history of debate over the nature of literacy (from print literacy to audiovisual and media literacies, information literacy, advertising literacy, cyberliteracy, games literacy, critical literacy, and many more), notwithstanding critical doubts over "literacy" as a normative or elitist project.[3] Through the concept of literacy, I suggest, we can weave together an account of basic and advanced skills, linking individual skills with social practices and crossing the boundary between formal and informal learning. Second, I show that the internet poses specific and new demands on the understanding of its users (and would-be users), which, as empirical work with children themselves reveals, not all manage. Third, and contrary to Anna's mother's assumption, I argue that mastering the technology means mastering not just the hardware, but all that the internet affords its users. Thus we should be satisfied with nothing less than an ambitious definition of literacy given the considerable social, economic, cultural, and political ambitions that society has for the information society and, especially, for the so-called "internet generation."

Introducing Three Children

To ground the present discussion, and without meaning either to celebrate or to criticize them, I will briefly introduce three children who participated in the UK Children Go Online project to convey the richness and subtlety of their knowledge of, and their continuing struggles with, the internet.[4] For behind the excited rhetoric of young online experts, the everyday reality is inevitably more complex, as ethnographic research on the domestication of new technologies readily shows.[5]

I first visited Megan when she was eight years old, in 1999. A bright girl from a working class family, Megan lived in a media-rich but small house with her rather "stay-at-home" parents and her older brother, a computer enthusiast. She loved writing stories and animals, especially her pet hamster. She also loved playing on the computer, and her parents proudly termed her "an information junkie," having high educational aspirations for her. At the same time, they kept an eye on her internet use from the living room, being cautious about her online activities and encouraging visiting trusted sites rather than bold exploration, gently

restricting her to information rather than communication applications. When I sat with Megan while she showed me her online activities, my observations suggested that her skills were somewhat exaggerated by her parents, her internet use being narrowly concentrated on three sites—AskJeeves for searching, Nickelodeon for games (linked to her favorite children's television series Rugrats), and a few sites about pets (e.g., Petstore.com). Her use of these sites often proved frustrating and inefficient.

In 2003, I returned to the family, when Megan was 12. Though various aspects of family life had now changed—her father had a new job, her mother had returned to full-time work, her brother had taken over the father as the "computer buff," the computer had been upgraded, and Megan had begun secondary school—it is the constancies that were more striking in this close, quiet family. Lively and chatty as ever, grungy if not quite a teenager yet, Megan still reads and writes stories—now on the computer, using the AOL story-writing option on the kids' page. She still searches for homework or leisure-related interests, now using Google. As before, she follows her interest in animals onto the internet—for example, using Neopets to name and keep a pet.[6] She's become a fan of The Sims, visiting the Sims Web site and sites with game cheats and, having gained a taste for horror, she enjoys playing "against the grain" by murdering her Sims and writing gothic tales of murder and destruction.[7] Yet, as before, her online skills seem more limited than her confident talk suggests. She had lost the password for her "neopet," nor could she manage to get the Web master to e-mail it to her. She now has an e-mail and instant messenger account, but rarely uses it, and there is nothing in her inbox when she looks. She ignores invitations on sites to chat, vote, or e-mail. When I ask what is listed under "favorites," she says she does not know, having never looked, and when something goes wrong, she skims over the problem rather than stopping to figure out what happened. So though her online style is quick and competent, getting where she wants efficiently, her range is narrow, with little exploration. In addition, there seems little need to worry about online risks, for Megan has internalized the caution once explicitly impressed on her by her parents.

Megan's internet use illustrates several key features of the online experience—a continuity in interests offline and online (pets, stories), a continuity in individual learning style and family mediation over time (from child to teen), the gap between parental pride in a child's expertise and his or her ability to make the technology do what he or she wants it to, and parental ambivalence over the fact that encouraging confident exploration online also makes a child vulnerable to online risks. Although all of these features of internet use are supported by social science research,[8] research also shows that not all young people are as cautious as Megan in their online experience, as the next case study illustrates.

Fifteen-year-old Anisah is from a Ghanaian family and lives on a once-very troubled housing estate. We first visited Anisah, a middle child, lively and confident, when she was 12. The family lived in a small two-bedroom flat, the computer squeezed into the living room along with most other family activities. Her educated parents had not found work in the U.K. that matched their qualifications, leading them to place huge educational expectations on their three children—evident in their many encyclopedias and educational CD-ROMs, the emphasis placed on homework and computer access, and the parental support for children's offline and online learning. At 12, Anisah was active and outgoing—she danced, played netball, shopped, and socialized through the church—but as she lived far from her school friends and was often alone, she also used the internet on most days, enjoying making friends in chat rooms, liking to feel ahead of her classmates (most of her peers didn't have home access). Though she benefited from using the internet to research school projects (using Yahoo,

Excite, or BBC Online), her skills were imperfect: she told us about doing a project on China (the country) for which she needed an illustration; she searched, downloaded, and inserted into her work a picture of china (porcelain) from a Web site in Maine, United States, not realizing the problem.[9]

Anisah at 15 had become a charming, strong-minded, articulate teenager, doing well at school and hoping to become a designer. Having moved to a new house, she and her sister now have a bedroom to themselves and, to her delight, this also houses the computer. Interestingly, the family's serious, moral attitude has become even stronger in Anisah. Unusually for her age group, Anisah reads the news on the homepage of her ISP. She revises for exams online using the BBC's Bitesize. We discuss how—unlike her peers—she refuses to download music, it being both illegal and wrong. She claims to have seen no pornography, though her mother worries about this, checking up on Anisah and so invading her privacy, as Anisah sees it. The interview with her mother pinpoints an ambivalence between saying "children are children" who require guidance and seeing Anisah as part of the "guru generation" who know about the internet. Though she uses e-mail and instant messaging programs, often chatting to her friends late into the night (a practice of which her mother is unaware), Anisah is now scathing about chat rooms because of the risk from dangerous contacts and because chatting to strangers seems pointless (reflecting a widespread campaign in the U.K. about the risks of chatrooms).[10] Much of her internet use is purposeful—to research art work for a project, to follow her interest in design, to find a cheap flight, and so forth.

From Anisah's experience, we can add to the picture gleaned from observing Megan. Being both older and more experienced, Anisah has bypassed some of the struggles Megan has with accessing online content, but this means she faces the next level of challenge—what exactly did Anisah need to know about the porcelain pictures to avoid her mistake? And, did the mistake result from her poor searching skills (i.e., using an ambiguous search term, "china") or her assessment of the Web site's content and reliability (finding a commercial site on the wrong topic) or, even, a problem occasioned by poor Web site design or search engine algorithms? One also wonders what complementary knowledge would be required by the teacher, if he or she is to detect such a mistake and, in school, how the teacher could have better advised Anisah. Internet literacy surely is not simply a feature of the individual, but rather emerges (or fails to emerge) from the interrelation between individual skill, education, and interface design, a point I shall develop below. Anisah's case also shows the importance of family background in shaping internet use—her parents' cultural capital compensates for their lack of economic capital[11] in helping Anisah "get ahead," a motivation held, but not always achieved, by many parents for their children;[12] as Anna's mother said, "I think from the children's point of view they are so incredibly lucky to be able to have the information in their dining room . . . and I think they are at an incredible advantage to other children. Not every family has got a computer, and I think children are disadvantaged if they don't." Less typically, though characteristic of religious families, Anisah's parents' strong moral values guide and restrict the nature of her online activities in a manner that, for the most part, she accepts.[13] Where Anisah diverges from her parents—in seeking covert opportunities for peer-to-peer communication, she reminds us that literacy encompasses all skills—both those approved of by adults and those disapproved of.[14]

My third case adds further dimensions to our growing account of youthful internet use: Ted was 14 when we first visited. More affluent than either Megan or Anisah, Ted is privately educated and lives in a white, middle-class family. Perhaps because he is an only child and dyslexic, Ted is rather overprotected at home; he watches a lot of television, though he also

spends time playing sports and out with friends. Education seems less emphasized in this household except as a means to gain a comfortable lifestyle. Like many children, Ted cannot remember a time before the family had a computer, though the internet is recent. Unlike many others, he does not profess much expertise about these technologies. "I haven't got a clue," he said, when things go wrong. Indeed, being a computer consultant, his mother is the expert at home, guiding Ted in his use of the internet. She bookmarked the BBC's Bitesize for him, though he does not use it, and also checks the history file to see what he does online. Indeed, internet use in this family is fairly social, with a parent often in the study while Ted researches his homework online or plays games, and he also goes online with his friend and internet "guru," Ted following Mark's lead.[15] They check on their favorite stars, television programs, sports stuff, send jokey e-mails to their mates, and they visit Yahoo Chat—pretending to be older, to be other people, to meet girls. For Ted, the internet is mainly "fun and funny, it's good, frustrating sometimes"—especially in relation to effective searching.

We revisited Ted when he was 18, about to go to university. Family life had changed, with fewer family activities and Ted spending a lot of time in his room. Yet Ted still says that his mother is better at using the internet than he is, particularly for searching (this seems likely, when we observe his rather poor searching skills). And when we ask, he has little idea why sites exist or what purposes they may serve. Like many teens, though unlike Anisah, who considers it wrong, Ted now spends a lot of time downloading music via the peer-to-peer file sharing system Kazaa while, multitasking, he conducts instant messaging with friends. Again unlike Anisah, Ted hardly searches the Web at all now—only checking out university sites for possible courses when he needs to; the internet has become for him a medium of communication and music, not of information or education.

Thus, Ted adds further features to our growing insight into youthful internet literacy. Regarding the discrepancy between economic and cultural capital, his is the contrary case to Anisah. Where Anisah illustrates the hopes of those who provide internet access for the otherwise disadvantaged,[16] Ted shows that simply having the resources (financial, educational, and parental) does not necessarily get you ahead if a genuine interest in learning and exploration is not cultivated early. Second, Ted's use of the internet is more social than either Megan or Anisah—where Megan takes turns with her brother on the internet, and Anisah uses it alone or to guide her little sister, Ted goes online with his friend or his mother and so gains from their greater expertise: literacy is, for Ted, part of a social practice, not just a cognitive skill.[17] Last, one should note that while Ted, like the other two, would appear to a superficial observer to multitask effectively, "whizzing around" in the manner that impressed Anna's mother, the benefits he gains from the internet are curtailed first by his lack of interest in information, education, or exploration and, second, by his poor skills in searching and evaluating Web sites, though one should not underestimate the importance of gaining communication-related literacy skills, especially for teenagers.

Indeed, we can compare their adoption of the interactive potential of the Internet[18] as follows: Megan mainly uses the internet to search Web sites and play games—what Sally McMillan (2006) terms user–document and user–system interactivity respectively.[19] For Ted, user–user interactivity (chat, e-mail) is more important. Anisah makes perhaps the broadest use of online options, treating the internet as a more flexible and diverse tool. These three rather different young people also share some common experiences: each, for reasons of gender, class, ethnicity, or special educational needs, is partly on the "wrong" side of the digital divide,[20] challenged to use their skills and resources to overcome this and get what they

want from and through the internet. Each is treading a careful line between parent-approved and child-favored activities, raising issues of domestic regulation (and its dependence on national regulation), which balance freedom, safety, and privacy,[21] and each is developing valued expertise—"internet literacy," though they seem more focused on making the interface work rather than on developing the broader and more ambitious critical and creative literacies that internet use affords.

Why "Internet Literacy"? An Excursion into Theory

To those for whom "literacy" means "just" reading and writing, the notion of internet literacy (or computer literacy, cyber-literacy, etc.) will seem puzzling. To nonnative English speakers, the lack of a ready translation for "literacy" into some languages also poses a difficulty.[22] Raymond Williams (1983) traces the historical emergence of the English term "literacy" not from "ABC" or "pen and paper," but from "literature," a term that once combined the adjective meaning being discerning and knowledgeable according to "standards of polite learning" with the noun for a body of writing of nationally acknowledged esthetic merit.[23] Today, as he observes, "literature" has come to refer only to the noun, with its associated adjective, "literary," while by the end of the nineteenth century, "literacy" (and its adjective, "literate") "was a new word invented to express the achievement and possession of what were increasingly seen as general and necessary skills."[24] Significantly, this new word became necessary as the ability to read spread beyond the elite to the mass public, needed to characterize the growing body of people with the skills to read and write but who lacked familiarity with the literary canon. In other words, with the advent of mass education and the commensurate rise of mass literacy, many people became literate but not literary, and the "uses of literacy," as Richard Hoggart put it,[25] became increasingly subject to regulatory scrutiny and governance.[26] Indeed, the advent of a literate but supposedly uncritical public occasioned a series of "moral panics" accompanying each new mass medium (and, today, each new interactive medium) (Drotner 1992),[27] which focused precisely on the consequences of access without discernment.[28] Thus, the transition from print to audiovisual media has been accompanied by widespread cultural anxieties, particularly regarding youth that in turn position "media literacy" as a form of necessary critical defense against the standardized, commodified message of "the culture industries."[29]

  In introducing these three children above, I have deliberately outlined an ambitious definition of young people's "internet literacy" that draws on the research literature so as to encompass three dimensions. First, literacy is a form of knowledge with clear continuities across communicative forms (print, audiovisual, interpersonal, digital). As regards the internet, this knowledge poses a phased series of challenges, from initial hardware difficulties of access through to more complex interpretative and evaluative competences regarding content and services that are distinctively afforded by (or socially inscribed into) the technology or text. Second, literacy is a situated form of knowing that bridges individual skill and social practices that is enabled (or impeded) by (unequally distributed) economic, cultural, and social resources (or capital). Crucially, this emerges from the interaction between individual activity, technology or interface design, and institutional shaping, and cannot be understood solely as "a neutral technical skill."[30] Thirdly, literacy comprises a set of culturally regulated competences encompassing both that which is normatively valued and that which is disapproved or transgressive. "Internet literacy" in particular may be distinguished from other forms of literacy to the extent that the specific skills, experiences, texts, institutions,

and cultural values associated with the internet differ from those associated with print, audiovisual, or other forms of communication.[31]

Reviewing recent research on "media literacy," a field that concentrates primarily on broadcasting and audiovisual media forms, and that draws on both humanities and social science, James Potter (2004) cites over twenty definitions.[32] However, many of these broadly concur with the clear and concise definition proposed by the National Leadership Conference on Media Literacy held in the United States in 1992, namely "the ability to access, analyze, evaluate, and communicate messages in a variety of forms."[33] In the parallel realm of information science, the recent transition in the dissemination and management of information sources, from authoritative and controlled forms (encyclopedias, libraries, expert databases) to networked, diverse, flexibly specialized forms of representation of the information or knowledge society, has positioned "information literacy" as a vital skill in the competitive global marketplace. This field concentrates primarily on computing, telecommunications, and information technologies, and draws on the study of information processing, computer science, and library studies to theorize, especially, multiple levels of access competences, to identify a range of barriers and enablers to access, and establish initiatives for training or redistributing otherwise-unequal skills across the population. For, as Mark Warschauer puts it, "the ability to access, adapt, and create new knowledge using new information and communication technology is critical to social inclusion in today's era."[34]

Such an approach is, interestingly, strikingly parallel to that of media literacy.[35] The UNESCO-funded multinational gathering of experts organized by the U.S. National Commission on Library and Information Science and National Forum on Information Literacy stated that "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."[36] In this document, also known as The Prague Declaration, we see the same fourfold definition, now identified as "a prerequisite for participating effectively in the Information Society" and "part of the basic human right of life long learning."[37] So, with the widespread diffusion of information and communication technologies, the notion of information literacy has been developed to encompass the competences required to design and use complex digital systems for the representation and distribution of information. However, now that the internet converges multiple technologies, forms, and spaces of mediation and information—blurring hitherto distinctive social practices of information and entertainment, work and leisure, public and private, even childhood and adulthood, national and global—a convergence of media (or audiovisual) and information literacies is needed to map out a constructive route to understanding what (young) people know, and need to know, regarding that deceptively simple notion of "using the internet."

Charting the Limits of Young People's Internet Literacy

In thinking about young people's internet literacies, both the traditions of media literacy and information literacy are useful in recognizing the cognitive and social challenges posed by access (to hardware, software, content, and services) as well as the dimensions of literacy concerned with analyzing and critically evaluating content for its textual forms, genres, biases, and reliability. Undoubtedly, Megan, Anisah, and Ted's families are not alone in their struggles to appropriate this new technology—even to choose, locate, and operate the hardware, and deal with the constant and cascading demands to update and upgrade, let

alone to access the content and services accessible online.[38] Megan's computer was inherited from her father's workplace and so came set up with many puzzling features that remained long after the computer had been brought home. Ted's inability to bookmark sites also limits his efficiency in accessing information, while Anisah's attempt to obtain illustrations of China shows the challenge of searching.

One observational session in thirteen-year-old Candy's middle-class household clearly illustrates the problems of access and its link to critical understanding and content creation. Candy was trying to find a German Web site on food and drink to help with her schoolwork. First she checked with her father that "du" is the German equivalent of U.K. He says yes, then thinks it might be dr. This doesn't work, so she tries www.esse.com.du. This doesn't work, so she tries .de, with no more success. The researcher suggests she tries www.esseundtrinke.com.de but this doesn't work either, because mistakenly she typed "trinke" without the "n." She notes that she couldn't access the site at school either. The observer suggests she puts an "n" in "essen" and she says that there should be one in "trinke" as well, but no luck (perhaps because the words are run together as one—searching for "essen und trinken" produces thousands of useful hits). Candy's father then suggests .dr for Deutsche Republik or "just to leave the last bit off and see if it finds it." Neither works. Her brother, Bob, comes across to try to help, but he can't remember any German sites. Now Candy is trying www.yahoo.co.du. Bob suggests Capital d, but still no luck. Her mother then comes into the room and tries to help. She suggests they try .uk to see if "the whole thing is working." Her mother goes to the refresh option on the ISP home page. Candy jokes "Don't do that! It goes on to a porn page!" Evidently, once she did this and this happened. She knows this must mean that someone in the house had accessed it earlier! The mother tries www.yahoo.co.uk and immediately the page comes up. So the family conclude that the problem lies with the name of the German site they are trying to access and is not a problem with their skills; so Candy gives up. This whole process took ten minutes, and the attention of the whole family.

Some of these difficulties have been effectively theorized within the information literacy tradition where, as noted above, "mere access" has long been recognized as posing significant barriers to many. In relation to media literacy, access has until recently been a minor issue; turning on the television or radio, picking up a newspaper, or going to the cinema are not challenging skills, oft-claimed to render these "democratic" media; although today, using the electronic program guide, installing multiple digital channels, or accessing interactive content raise questions familiar to those in the information/computer tradition. Where the media literacy tradition is arguably more advanced than that of information literacy is in relation to critical understanding. Mass media have been characterized by limited spectrum, expensive distribution channels, centralized organization, and strong state regulation, these combining to maintain a strong distinction between producers and consumers, with elite filters operating to select material to be distributed in accordance with criteria of cultural quality, editorial values, professional production conventions, and political or market pressures. Consequently, media literacy teaching especially has often centered on understanding and critiquing the operation and consequences of these elite public or private sector organizations.

But, to the extent that the internet enables cheap, accessible, diverse, and dispersed forms of knowledge distribution, the emphasis of critical literacy must be broadened to include information searching, navigation, sorting, assessing relevance, evaluating sources, judging reliability, and identifying bias. All these tasks increasingly fall to the ordinary user in a

fast-changing environment in which familiar markers of authority, value, trust, and authenticity are lacking.[39] Nor are these tasks inconsequential, for they are applied in domains extending far beyond the entertainment or hobby activities associated with traditional media. Many young people find this exciting and empowering, affording diverse forms of expertise, expression, and exploration,[40] and the recent explosion of "user-generated content" certainly attests to the appeal of gaining expertise in this new online environment. Many, however, are less expert. In the "UK Children Go Online" survey, of those nine- to nineteen-year-olds who go online at least once a week, four in ten said they trust most or all online content—revealing, arguably, the scale of the challenge for media or internet literacy programs. For the majority who are more skeptical, one must ask how they decide what to trust: only one in three said they have been advised how to judge the reliability of online information.[41] As we saw with Ted, many have little idea of the motives that lead individuals or institutions to make information available online, and when asked to speculate, those interviewed in focus groups tended to assume benevolent and generous intentions to site authors. Steve (17, from Manchester) told me sites exist because "somebody's just thought this is my interest, and I'm going to share it with the world." So, critical literacy is a vital part of internet literacy, with trust a central issue in navigating the online environment. Yet most children and young people we interviewed in the focus groups appeared to be ignorant of the motives behind the Web sites they were using, and many, it was clear, had not thought about this question at all.

Moreover, the design of online resources often impedes the development of further skills or competences online. Even at 18 and at a private school with great IT facilities, Ted struggles to search effectively, typing in key words inappropriately, confused about bookmarking and so always retyping addresses, and not understanding why you can't always go "back" (itself a good question).[42] Similarly, why can't Megan work out how to get the Neopets site to remind her of her password? Since her teachers say she is an intelligent girl, perhaps the problem lies with the site design? Certainly, as I observe her attempts, the lack of any site feedback on her repeated mistakes seems a striking failure to encourage learning when needed.[43] In one visit, Megan (aged 12) shows me how the AOL kids home page offers a story-writing option. The site contains a standard story with gaps—you insert your own name, that of a friend, your favorite color, and so forth, and the result is a personalized story you can print out. The discussion then turns, and Megan switches to Microsoft Works to show me the story she is currently writing: this turns out to be a lengthy, closely written thriller, heavy on dialogue and drama, containing tragedy, murder, a mysterious beautiful foreign woman saying dramatic and intriguing things as she rushes about solving mysteries. The story uses elaborate forms of expression, a complex vocabulary, includes exciting and witty writing, if rather breathless and melodramatic. The same girl, two stories, one highly literate, yet enabled merely by the blank page, one minimally literate and positively impeded by some "creative" software.

Empirical observation of young people's internet use suggests that, conceptually, we must recognize that literacy emerges from the dynamic interaction between user and technology and that, consequently, politically, we must take care in criticizing individuals for limits of their online activities, for this is implicitly to assume that interfaces are well designed and that necessary resources are readily available. In practice, interfaces also obscure, impede, and undermine, especially in the new media and information environment where cultural conventions of representation are not yet familiar, cues to interpretation are inconsistent or confusing, and a critique of the new information environment is underdeveloped.

Furthermore, young people's internet literacy does not yet match the headline image of the intrepid pioneer, not because young people lack imagination or initiative, but because the institutions that manage their internet access and use are constraining or unsupportive—anxious parents, uncertain teachers, busy politicians, profit-oriented content providers. In recent years, popular online activities have one by one become fraught with difficulties for young people—chat rooms and social networking sites are closed down because of the risk of pedophiles, music downloading has resulted in legal actions for copyright infringement, educational institutions are increasingly instituting plagiarism procedures, and so forth. In practice, the Internet is not quite as welcoming a place for young people as popular rhetoric would have one believe, and in this, of course, it is not so different from offline social institutions concerned with young people.[44]

Convergent Literacies for Convergent Technologies

As audiovisual and information technologies converge, most notably but not only through the internet, people's skills and competences and, therefore, the research that seeks to understand them must also converge. The traditions of literacy scholarship discussed above each contribute to the analysis of internet literacy in complementary ways. Media literacy has developed a better account of the nature of the sensory, esthetic, and symbolic qualities of visuals, sound, and the moving image, and, therefore, of multimedia. However, it is heavily linear. Information literacy has a better account of the nonlinear, the database, the dispersed network. Since the internet combines these qualities, again we need to combine these traditions in theorizing internet literacy. This allows us to define internet literacy as the ability to access, understand, critique, and create information and communication content online.

To be sure, this is a definition tied to a technology (or domain, namely, online), and the technology is complex and changing, but this is not to fall into technological determinism, for precisely since technologies have been socially and institutionally shaped, they afford certain uses or embody certain preferences over others, and different forms of representation pose distinct interpretative demands.[45] Consequently, technologies invite or encourage the development of certain competences in preference to others, both in terms of basic skills (using a mouse, navigating hypertext, learning netiquette) and advanced skills (evaluating a Web site, contributing to a forum, inhabiting an online community). Thus, an interactive focus on user and text or technology is vital.[46]

The subfield of human-computer interaction, interestingly, treats computer or information literacy not simply as a skill, but rather as an interaction between skilled users and well-designed interfaces.[47] Similarly, the text reader model of interpretation (applied to both film and television, and itself derived from the domain of print literacy) stresses meaning as emergent from the activities of active subjects and polysemic texts.[48] Indeed, there is a thought-provoking parallel between the theorization of interactivity in the field of information literacy (through the contrast between the "inscribed user" and the actual users, plural, who interpret, normatively or otherwise, the meanings flexibly encoded into a technological system[49] and the theorization of the "inscribed subject" or "model reader" anticipated by the text and the empirical audiences, plural, who decode or read against the grain when faced with an audiovisual text in the field of media literacy.[50] We may add to this the growing literature on computer-mediated communication and its account of the specific communicative literacies associated with online peer-to-peer interactions but drawing, historically, on face-to-face interaction.[51]

Much in these converging traditions draws on a common origin in the analysis of print literacy, particularly in the stress on interpretation (or literacy not just as reading the printed word, but also as "reading the world"[52]). This legacy from print literacy remains crucial in relation to the internet, much of whose content is, after all, print—along with the associated reference frames of pages, reading and writing, sending, printing, looking up, filing, and so forth; the question of how representation is altered as we move from page to screen is a fascinating one.[53] Other dimensions of the print legacy are also important: Gunther Kress traces back to the dominance of print our cultural blindness to images compared with words; for though the power of images is widely recognized, our analytic and regulatory tools are more developed for words, hence the value of his development of an analytic toolkit to recognize the visual (hence, he proposes the concept of "visual literacy"), for "the exponential expansion of the potentials of electronic technologies will entrench visual modes of communication as a rival to language in many domains of public life."[54] He reminds us, further, of the important stress on writing in relation to print literacy when he observes that "writing has been the most valued means of communication over the last few centuries— the one that has regulated access to social power in Western societies."[55] It is especially the dual emphases on writing as well as reading—preserved in the fourth term of the definitions of both media and information literacy (as "communicate" or "create," respectively)—that has rendered literacy subject to close regulatory scrutiny. Not only does reading permit the dissemination of knowledge in a manner that may escape control, but especially, writing further democratizes knowledge in a move that challenges the authority of elites.[56]

Along with the emphasis on individual skills accompanying each new medium, historians identify an institutional (often, also a legal) history of regulatory interventions that manage the dissemination and use of these skills, resulting in critical scholarship on how the state intervenes—generally through educational institutions, though also the law and other agencies—in what might otherwise seem the private activities and pleasures of private individuals or private businesses (e.g., publishing, the press). Such normative concerns are now evident in the initiatives funded in relation to ICT literacy. As for print literacy, the purpose is often more to promote a skilled workforce, thereby advancing employment and economic competitiveness, than to support a critical, informed, and actively engaged citizenry. Hence, public policy resources are generally devoted more to enabling basic access and understanding than to critical evaluation or user-generated content creation. Critical scholarship must counter, therefore, by pointing out that the accepted definitions of media and information literacy are not satisfied with just knowing one's audiovisual "ABC"; one must also be able to communicate—to create content as well as to decode it; otherwise, one positions the public as mere recipients rather than also active producers and distributors of information and communication.[57] Yet the promise of literacy, surely, is that it can form part of a strategy to reposition the media user—from passive to active, from recipient to participant, from consumer to citizen.

Findings from the "UK Children Go Online" project suggest some positive prospects here, though again, some disappointing realities. They suggest that young people enthusiastically take the initial steps toward interactivity, communication, and participation, with some more active than others, but often, they do not sustain the activity or engage as thoroughly as those casually observing them might hope. For example, seven in ten nine- to nineteen-year-olds who use the internet weekly report at least one form of interactive engagement with a Web site (out of doing a quiz, sending an e-mail/SMS/picture/story to a site, voting for something online, contributing to a message board, offering advice to others, filling in a form or signing
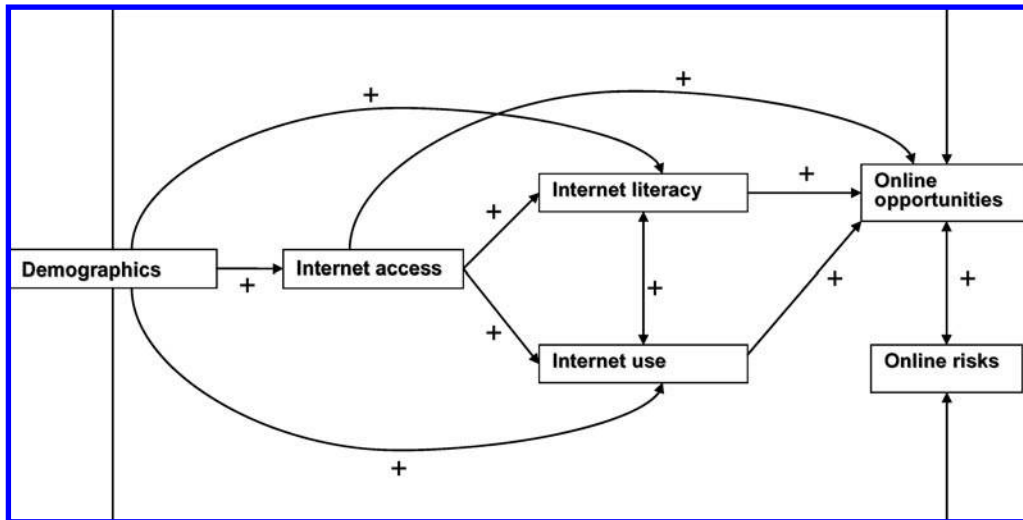
Figure 1
Explaining online opportunities and risks among teenagers.

a petition online), but on average, the total number of ways of interacting is 1.5 out of the eight asked about, suggesting that despite the many online invitations to interact, adoption remains low, especially among working-class teenagers. Similarly, the survey found that 34 percent of nine- to nineteen-year-olds who go online at least once a week have tried to set up their own Web page—more often boys than girls, and more often older than younger children (though younger children indicate that they would like to develop the skills to make a site). While over a third feel that making their own site is in some ways impressive, suggesting a considerable desire to be active and creative content producers as well as receivers, closer examination showed that of these, one in three never managed to get their Web page online, and a further one in three do not maintain their site—only one in nine, therefore, have created, uploaded, and maintained a site, and among these, doing so was often a requirement of their curriculum.

What might encourage a more ambitious use of the internet? The "UK Children Go Online" survey findings revealed that online expertise matters.[58] Measured in terms of the number of online skills that twelve- to seventeen-year-olds claim to be good at, as well as their reported self-efficacy, and assessed in terms of the range of online opportunities that the teenagers engage in, as well as the range of risks they have encountered online, the findings suggested that—as for learning to read or ride a bicycle—those with greater internet literacy take up greater online opportunities and, perhaps more surprisingly, encounter more risks also, as shown in figure 1. This diagram models the relations, direct and indirect, among demographic variables (age, gender, socioeconomic status), the quality (or variety) of the teens' internet access, the level of their online skills, and frequency/length of their use, together with the range of opportunities (e.g., education, civic participation, peer communication, information search, etc.) and risks (e.g., pornography, race hate, sexual harassment, stranger contact, or bullying) that they experience online.[59]

This empirical examination provides some encouragement for those who seek to overcome the digital divide by intervening in young people's internet literacy (whether via training,

education, online provision, or better design); increased literacy results in increased opportunities over and above the positive effects of access and use. However, it points to a problem for policy makers and parents, for the positive correlation identified between the range of opportunities and risks that teenagers encounter online makes it apparent that initiatives designed to improve opportunities are also likely to increase risks, while those designed to minimize risks may also reduce opportunities. Indeed, as the absence of certain lines in the diagram conveys, access and use do not in and of themselves increase the likelihood of online risks, and nor does literacy reduce it; rather, the online risks are the outcome of online opportunities. The analysis also counters the technologically determinist view that merely providing access to the hardware could be enough; for, while better quality of access (e.g., more access locations, or having the internet for longer) was found to increase the range of online opportunities experienced by teenagers, the more literate among them gained an additional benefit over and above the less literate with equivalent access (or, indeed, equivalent amount of use).[60]

As soon as we inquire, however, into what these online opportunities might and should include, the normative character of internet literacy discussions becomes apparent. For society must ask what expectations it has for young people's internet use—what, in short, do we hope for young people and how much should their internet use be supported through institutional and other forms of support?

Internet Literacy as a Normative Project

Clarity over the purposes of literacy is often lacking, resulting in some crucially unresolved debates in both traditions discussed in this chapter, bringing, in turn, an unresolved and contested legacy to the analysis of internet literacies.[61] In the media literacy tradition, significant differences of opinion persist among theorist and media educators regarding their valuation of the media themselves: How much emphasis should be placed on critiquing or on appreciating media? One might here compare the notion of advertising literacy, seen as providing a cultural defense against the normative messages of media corporations, with that of film literacy, advocated for enabling a cultural appreciation of the esthetic, creative, and pleasurable potential of audiovisual expression.[62] This uncertainty in pedagogy influences, and undermines, the justification, implementation, and evaluation of media literacy programs, whether through either media education or citizenship initiatives, an uncertainty that now continues to shape contemporary discussions over the appropriate uses of internet literacy.[63] Similarly, information literacy advocates do not agree about the desired balance between technical skills and information skills, or the importance of motivational versus economic barriers to understanding, or the weight to be put on information literacy as a means of competing in an increasingly information-oriented labor market or as a means to participate fully as a citizen in the knowledge society. All these are debates, essentially, over the politics of literacy and literacy education. Concretely, one may ask not only whether Megan, Anisah, and Ted are "internet literate" but, also, what more should they know, and whose responsibility is this?

Being able to use the internet is of little value in and of itself. Rather, its value lies in the opportunities that it opens up, just as the history of debates over print literacy are, fundamentally, debates over the manner, inclusiveness, and purposes of public participation in society.[64] I have argued elsewhere that we can identify three broad purposes to which media and information literacies contribute.[65] First, democracy, participation and active

citizenship: in a democratic society, a media and information-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, while a media and information-literate society supports a critical and inclusive public sphere. Second, knowledge economy, competitiveness, and choice: in a market economy increasingly based on information, often in a complex and mediated form, a media and information-literate individual is likely to have more to offer, and therefore achieve at a higher level in the workplace, and a media and information-literate society is innovative and competitive, sustaining a rich array of choices for the consumer. Third, lifelong learning, cultural expression, and personal fulfillment: since our highly reflexive, heavily mediated symbolic environment informs and frames the choices, values, and knowledge that give significance to everyday life, media and information literacy contribute to the critical and expressive skills that support a full and meaningful life, and to an informed, creative, and ethical society.

These purposes are deliberately framed to capture both the individual competences and institutional structures that, together, underpin literacy. For across diverse traditions, literacy research has often been strongly contested for its individualistic emphasis on skill. Literacy should, it is argued by these critics, be conceived as both an individual accomplishment or a social and cultural practice.[66] Just as competences can be conceptualized at several levels, from the basic (using the pen, the remote control, the mouse) through to intermediate skills (finding a book in the library, identifying a reliable Web page, contributing to a forum) and then to advanced competences (creativity, specialized learning, participation, and critique), so too can the social structures that underpin these competences. At the basic level, then, internet literacy is enabled by and depends on the design of interfaces, software, and technical provision;[67] at the intermediate level, literacy requires institutional supports (education and other learning environments, accountable gate-keeping practices, well-resourced curricula, and information resources); at the most ambitious level, internet literacy requires societal encouragement both online and offline for democratic engagement, open and responsive civic organizations, an innovative and flexible economy, and a rich and diverse culture. In short, media and information literacies do not simply concern the ability to use the electronic program guide for digital television, or to complete one's income tax return online. Nor are the purposes restricted to becoming a more informed consumer or getting a better-paid job, though in methodological terms, these may be more readily evaluated against tangible outcomes.

However, research within media literacy and information literacy divides on the politics of literacy research. Some in the field of media literacy work within the administrative approach, in Paul Lazarsfeld's terms,[68] seeking directly to contribute to and influence policy on media literacy (for example, tracking ICT diffusion and access via government or commercial surveys). Other work takes a critical approach, exploring how people use media for their own sometimes non- or counternormative purposes, or critiquing the authorities that seek to "improve" literacy for administrative, economic, or commercial purposes. In the informational domain, similarly, research is bifurcated. For example, research on the search engine in the administrative tradition uses survey-based studies to examine access to and familiarity with search engines, the skills of different types of users, or the sophistication of users' search queries. In addition, studies using ratings and metrics examine the demographic trends in search engine choice and use, often to inform the advertising industry. Other research takes a critical viewpoint, integrating economic analysis, observation, and experiments, to question the adequacy of search engines for the public good, to critique the private structure of

the industry and its lack of transparency in information provision, and so forth. Thus, the critical focus of the two traditions has been different. Media literacy—because of the focus on the dominant institutions of the mass media—has developed a critical focus on the value of media (appreciate or deplore, value culture or defend against harm), and an interest in the public's resistance to dominant meanings. Information literacy—because of its greater focus on the challenges of access, and their associated barriers and enablers—has developed its critical focus on in/equality, competition, and redistribution across the population. Both these foci are, clearly, critical points of intervention for the academy in responding to society wide initiatives to promote literacy of all kinds, including internet literacy for young people.

Conclusions

This chapter has stressed the historical continuities between internet literacy and print literacy, in order that the ambitious expectations society has for print literacy (notably, the importance of writing as well as reading, and the expectation of critical understanding at levels far beyond knowing one's ABC) can be extended to internet literacy in the information age; for these not only support a skilled labor force, but also ensure cultural expression, civic participation, and democratic deliberation. It has also noted the discontinuities, insofar as internet literacy poses some specific challenges, partly arising from the rapid pace of change and the consequent reverse generation gap regarding children's and adults' expertise, and partly arising from the unprecedented convergence of hitherto distinct spheres (public and private, work and leisure, education and home, information and entertainment, etc.) associated with the ubiquity of online technologies in developed countries; this, in turn, demanding a convergence of diverse forms of literacy.

Given such ambitious expectations regarding youthful internet literacy, this chapter has challenged popular claims regarding young people's online expertise, not in order to criticize young people themselves—who are undoubtedly enthusiastic, creative, and motivated in their exploration of online opportunities—but in order to make visible society's failure to sufficiently support their internet literacy through design, education, and regulation. The "myth of the cyberkid"[69] or "the digital generation"[70] (a rhetorical term whose technological determinism David Buckingham, 2006, critiques) may mitigate against increasing public policy resources to support young people's learning and participation. It also seems that asserting children to be in control of their online experiences legitimates a deregulatory regime that frees the market to the degree that it poses a risk to children's safety.[71] Undoubtedly, the prevailing tendency in communications' regulation across North America and Europe is toward "lighter touch" regulation or, preferably, self-regulation for an increasingly global industry. The consequent threat of harm to the public is countered by the claim that, conversely, such trends "empower" by providing more choice for an increasingly media-literate public.[72] To some degree, children are recognized as a special or "vulnerable" group in such policy debates, but the favored solutions are not to sustain industry regulation, but rather to increase educational initiatives to enhance media literacy.[73] While media literacy initiatives are much to be welcomed, a critical analysis requires that we recognize these as part of a broader shift from direct control by government to governance through "action at a distance" regulating parents, for example, through discursively established norms of "good parenting" and "appropriate children's conduct."[74] One consequence is that this creates a skills' burden that parents and children neither can nor should bear alone.

Today's connections between literacy, education, and individual responsibility are also foreshadowed in the history of print literacy. Carmen Luke (1989) links the historical emergence of discourses of literacy, child-rearing, and childhood to the confluence of the invention of the printing press in the late fifteenth century and to the "birth of the school" by the middle of the sixteenth century.[75] By the sixteenth century, she notes, "learning had been removed from the home, the streets, or the community and had been replaced by an organized and regimented institutional setting where rewards, punishments, and the ideas and skills to be learned were provided by an authority other than the more familiar and personal authority of family and community members."[76] Intriguingly, it seems that today this trend is reversed: public policy stresses putting learning back into the home and community, resulting in what Buckingham, Scanlon, and Sefton-Green have termed the "curricularization of leisure" and, partly in consequence, to the growing attention—public, policy, academic— to questions of literacy.[77] Both the removal from and then the reinsertion into the home of education, socialization, and learning form part of the same larger trend, namely the institutionalization of childhood, the incursion of the state into the realm of private life, including the repositioning of children from being the private property of families into a public, civil discourse.[78]

While the growth of state regulation over parents, children, and the home represents the downside of this trend, the concomitant rise of an international discourse of children's rights by the end of the twentieth century represents the positive side. Optimistically, then, literacy—including internet literacy—could represent a means of empowerment for young people in a mediated world.

Victor Quinn defines "empowerment" precisely not as the provision of adult or predigested information to children nor, simply, as free access to any information, but rather as enabling children to be able to do what they can do best.[79] In this view, it is not enough for adults to leave young people to get on with it, but rather it demands that they listen, respond carefully, providing feedback on creative or other forms of activity, encouraging critical reflection, taking their participation seriously. Yet the form of "empowerment" adult society provides through the internet is often a far cry from this: educational Web sites reinforce "right answer" learning as opposed to critical questioning, civic participation sites encourage youth to "have their say," but rarely listen to or act on what they say. Many information resources encode strategies of textual closure rather than openness—what Stuart Hall called the "preferred reading"[80] (frequently asked questions, recently asked questions, top ten lists, fact of the week, our favorites, etc.), and "sticky" commercial sites, acting in effect as walled gardens, tend to discourage the very exploration that a network structure could and should afford.[81]

No wonder that what excites young people about the internet is primarily the peer-to-peer opportunities it affords, in which they provide for each other the responsiveness, criticism, humor, feedback, openness, and networking that so often is absent from content designed for children by adults. Yet since information and communication technologies increasingly represent a key route to education, health, civic engagement, employment skills, participation in government, therapeutic advice, extended family relations, and so forth, it is here that we must ensure literacy is sufficient. Celebrating young people's enterprise and enthusiasm, while failing to support, respond, or engage with their online activities, risks failing to bring to fruition the ambitious hopes we hold not only for the internet but, more significantly, for young people. Overestimating their literacy is also hazardous, because anxieties about risk are, to some degree justifiably, enhanced in the risk

society, and because support for the individual making these judgments (education, socialization, and institutional norms) is reduced as the burden of responsibility is shifted from provider to consumer, a process Ulrich Beck describes as "the individualization of risk."[82]

As more and more policy emphasis at national and international levels is placed on "media literacy" or "information literacy" or "internet literacy," critical scholars have all the more reason simultaneously to support internet literacy initiatives, to assert ambitious expectations in evaluating their effectiveness, to scrutinize the policy objectives that promote them and, last, to challenge the inflated public claims regarding the "internet-savvy" teenager that accompany them.

Notes

1. Quotations from children and parents are drawn from the "UK Children Go Online" project (see www.children-go-online.net).

2. Marc Prensky, Digital Natives, Digital Immigrants, *On the Horizon* 9, no. 5 (2001).

3. While some see literacy as democratizing and so as empowering of ordinary people, many others point to the uses of literacy as a source of inequality and so as elitist and divisive in its effects, including the stigma of "illiteracy."

4. Sonia Livingstone and Magdalena Bober, *UK Children Go Online: Final Report of Key Project Finding* (London: London School of Economics and Political Science, 2005).

5. Maria Bakardjieva, *Internet Society: The Internet in Everyday Life* (London: Sage, 2005); Thomas Berker, Maren Hartmann, Yves Punie, and Katie J. Ward, eds., *The Domestication of Media and Technology* (Maidenhead, UK: Open University Press, 2006); Ellen Seiter, *The Internet Playground: Children's Access, Entertainment, and Mis-education* (New York: Peter Lang, 2005).

6. Sara M. Grimes and Lesley Regan Shade, Neopian Economics of Play: Children's Cyberpets and Online Communities as Immersive Advertising in NeoPets.com, *International Journal of Media and Cultural Politics* 1, no. 2 (2005): 181–198.

7. James P. Gee, *What Video Games Have to Teach Us About Learning and Literacy* (New York: Palgrave Macmillan, 2003); Anne Jerslev, "Video Nights": Young People Watching Videos Together—A Youth Cultural Phenomenon, *Young* 9, no. 2 (2001): 2–18.

8. See Patricia Marks Greenfield, ed. Developing Children, Developing Media—Research from Television to the Internet from the Children's Digital Media Center, *Journal of Applied Developmental Psychology* 25, no. 6 (2004): 627–769; Karin Larsson, Children's On-line Life—and What Parents Believe: A Survey in Five Countries, in *Promote or Protect? Perspectives on Media Literacy and Media Regulations*, eds. Cecilia von Feilitzen and Ulla Carlsson (Goteborg, Sweden: Nordicom, 2003), 113–120; Amanda Lenhart, Mary Madden, and Paul Hitlin, *Teens and Technology* (Washington, DC: Pew Internet & American Life Project, 2005); Sonia Livingstone, Children's Use of the Internet: Reflections on the Emerging Research Agenda, *New Media & Society* 5, no. 2 (2003): 147–166; Ellen Seiter, *The Internet Playground*.

9. cf. Eszter Hargittai and Steven Shafer, Differences in Actual and Perceived Online Skills: The Role of Gender, *Social Science Quarterly* 87, no. 2 (2006): 432–448; Marcel Machill, Christoph Neuberger, and Friedemann Schindler, Transparency on the Net: Functions and Deficiencies of Internet Search Engines, *Info—The Journal of Policy, Regulation and Strategy for Telecommunications* 5, no. 1 (2003): 52–74.

10. Sonia Livingstone, *Online Freedom & Safety for Children* (London: IPPR / Citizens Online Research Publication, 2001).

11. Pierre Bourdieu, *Distinction: A Social Critique of the Judgement of Taste* (London: Routledge and Kegan Paul, 1984).

12. Keri Facer, Rosalind Sutherland, John Furlong, and Ruth Furlong, What's the Point of Using Computers? The Development of Young People's Computer Expertise in the Home, *New Media & Society* 3, no. 2 (2001): 199–219.

13. Stewart M. Hoover, Lynn Schofield Clark, and Diane F. Alters, *Media, Home, and Family* (New York: Routledge, 2004).

14. Sonia Livingstone and Magdalena Bober, Regulating the Internet at Home: Contrasting the Perspectives of Children and Parents, in *Digital Generations*, eds. D. Buckingham and R. Willett (Mahwah, NJ: Lawrence Erlbaum Associates, 2006), 93–113.

15. Maria Bakardjieva, *Internet Society*.

16. Lynn Clark, Challenges of Social Good in the World of "Grand Theft Auto" and "Barbie": A Case Study of a Community Computer Center for Youth, *New Media & Society* 5, no. 1 (2003): 95–116.

17. Brian Street, *Social Literacies: Critical Approaches to Literacy in Development, Ethnography and Education* (London: Longman, 1995).

18. Sonia Livingstone, Magdalena Bober, and Ellen Helsper, Active Participation or Just More Information? Young People's Take up of Opportunities to Act and Interact on the Internet, *Information, Communication and Society* 8, no. 3 (2005): 287–314.

19. Sally McMillan, Interactivity: Users, Documents, and Systems, in *The Handbook of New Media: Updated Student Edition*, eds. Leah Lievrouw and Sonia Livingstone (London: Sage Publications, 2006), 164–175.

20. Mark Warschauer, *Technology and Social Inclusion: Rethinking the Digital Divide* (Cambridge, MA: MIT, 2003).

21. Sonia Livingstone, Children's Privacy Online, in *Computers, Phones, and the Internet: Domesticating Information Technology*, eds. Robert Kraut, Malcom Brynin, and Sara Kiesler (Oxford, UK: Oxford University Press, 2006), 128–144.

22. In German, "Alphabetismus" means knowing one's basic ABCs while "Bildung" means culture/education, reflecting a common separation from basic literacy from being educated or cultured in many languages; more recently, the terms "Medienkompetenz" and "Internetkompetenz" are spreading. In French too, basic literacy ("savoir lire et écrire") is distinguished from advanced literacy ("très instruit et cultivé"). The lack of such a distinction in English gives rise to the problem that academics and educators may call for advanced (media/internet) literacy education, but policy makers may translate this into basic provision of skills training.

23. Raymond Williams, *Keywords: A Vocabulary of Culture and Society* (London: Fontana, 1983).

24. Ibid., 188.

25. Richard Hoggart, *The Uses of Literacy* (London: Chatto and Windus, 1957).

26. Carmen Luke, *Pedagogy, Printing and Protestantism: The Discourse of Childhood* (Albany, NY: State University of New York Press, 1989).

27. Kirsten Drotner, Modernity and Media Panics, in *Media Cultures: Reappraising Transnational Media,* eds. Michael Skovmand and Kim Schroeder (London: Routledge, 1992), 42–62.

28. As Richard Hoggart (*The Uses of Literacy*, 333) wrote in the early days of mass broadcasting, mediated communication seemed to permit "strengthening the hold of a few dominant popular publications on the great majority of people," driving out of business the quality papers and those catering to minority

interests, while generally reducing all content to that which appeals to the so-called lowest common denominator.

29. Theodore Adorno and Max Horkheimer, The Culture Industry: Enlightenment as Mass Deception, in *Mass Communication and Society,* eds. James Curran, Michael Gurevitch, and Janet Woollacott (London: Edward Arnold, 1977).

30. Ilana Snyder, Critical Literacy, Learning and Technology Studies: Challenges and Opportunites for Higher Education, in *The Handbook of e-Learning*, eds. Richard Andrews and Caroline Haythornthwaite (London: Sage, 2007), 395–415.

31. One could, further, break down the different literacies associated with the diverse activities—online games, communication, information, participation, and so on—afforded by the internet (as in games literacy, communication literacy, network literacy, etc.).

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33. Patricia Aufderheide, *Media Literacy: A Report of the National Leadership Conference on Media Literacy* (Aspen, CO: Aspen Institute, 1993); William G. Christ and W. J. Potter, Media Literacy: Symposium, *Journal of Communication* 48, no. 1 (1998).

34. Mark Warschauer, *Technology and Social Inclusion*, 9.

35. Sonia Livingstone, Elizabeth van Couvering, and Nancy Thumim, Converging Traditions of Research on Media and Information Literacies: Disciplinary and Methodological Issues, in *Handbook of Research on New Literacies*, eds. Donald Leu, Julie Coiro, Michele Knobel, and Colin Lankshear (Mahwah, NJ: Lawrence Erlbaum Associates, in press).

36. Information Literacy Meeting of Experts, "The Prague declaration: Towards an information literate society," 2003. http://www.nclis.gov/libinter/infolitconf&meet/post-infolitconf&meet/PragueDeclaration.pdf (accessed June 8, 2007).

37. Ibid.

38. André H. Caron, Luc Giroux, and Sylvie Douzou, Uses and Impacts of Home Computers in Canada: A Process of Reappropriation, in *Media Use in the Information Age: Emerging Patterns of Adoption and Consumer Use,* eds. Jerry L. Salvaggio and Jennings Bryant (Mahwah, NJ: Lawrence Erlbaum Associates, 1989), 147–162; Sonia Livingstone, *Young People and New Media: Childhood and the Changing Media Environment* (London: Sage, 2002).

39. Barbara Warnick, *Critical Literacy in a Digital Era: Technology, Rhetoric and the Public Interest* (Mahwah, NJ: Lawrence Erlbaum Associates, 2002).

40. Henry Jenkins, Quentin Tarantino's Star Wars? Digital Cinema, Media Convergence, and Participatory Culture, in *Rethinking Media Change: The Aesthetics of Transition,* eds. David Thorburn and H. Jenkins (Cambridge, MA: MIT Press, 2003), 281–312; Amanda Lenhart and Mary Madden, *Teen Content Creators and Consumers* (Washington, DC: Pew Internet & American Life Project, 2005); Sharon R. Mazzarella, ed., *Girl Wide Web: Girls, the Internet, and the Negotiation of Identity* (New York: Peter Lang, 2005).

41. Sonia Livingstone and Magdalena Bober, *UK Children Go Online*.

42. Ellen Isaacs and Alan Walendowski, *Designing From Both Sides of the Screen: How Designers and Engineers can Collaborate to build a Co-operative Technology* (Berkeley, CA: New Riders, 2002).

43. Richard Smith and Pamela Curtin, Children, Computers and Life Online: Education in a Cyberworld, in *Page to Screen: Taking Literacy into the Electronic Era*, ed. I. Snyder (London: Routledge, 1998), 211–233.

44. Jens Qvortrup, Childhood and Modern Society: A Paradoxical Relationship, in *Childhood and Parenthood*, eds. Julia Brannen and Margaret O'Brien (London: Institute of Education, University of London, 1995), 189–198.

45. Donald MacKenzie and Judy Wajcman, eds., *The Social Shaping of Technology*, 2nd ed. (Buckingham, UK: Open University Press, 1999); Barry Wellman, Anabel Quan-Haase, Jeffrey Boase, and Wenhong Chen, The Social Affordances of the Internet for Networked Individualism, *Journal of Computer-Mediated Communication* 8, no. 3 (2003).

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47. Isaacs and Walendowski, *Designing From Both Sides*; Klaus Bruhn Jensen, ed., *Interface://Culture: The World Wide Web as Political Resources and Aesthetic Form* (Frederiksberg, Denmark: Samfundslitteratur Press/Nordicom, 2005).

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50. Sonia Livingstone, The Challenge of Changing Audiences: Or, What is the Audience Researcher to do in the Internet Age? *European Journal of Communication*, 19, no. 1 (2004): 75–86; David Morley, *Television, Audiences and Cultural Studies* (London: Routledge, 1992).

51. Brian H. Spitzberg, Preliminary Development of a Model and Measure of Computer-Mediated Communication (CMC) Competence, *Journal of Computer-Mediated Communication* 11, no. 2 (2006): Article 12; John B. Thompson, *The Media and Modernity: A Social Theory of the Media* (Cambridge, UK: Polity, 1995).

52. Paolo Freire and Donaldo Macedo, *Literacy: Reading the Word and the World* (South Hadley, MA: Bergin and Garvey, 1987).

53. I. Snyder, ed., *Page to Screen: Taking Literacy into the Electronic Era* (London: Routledge, 1998).

54. Gunther Kress, Visual and Verbal Models of Representation on Electronically Mediated Communication: The Potentials of New Forms of Text, in *Page to Screen: Taking Literacy Into Electronic Era,* ed. I. Snyder (London: Routledge, 1998), 53–79.

55. Ibid., 55.

56. Luke, *Pedagogy, Printing and Protestantism*.

57. Content creation, is not just an optional extra: Article 13 of The UN Convention on the Rights of the Child states that "The child shall have the right to freedom of expression; this right shall include freedom to seek, receive and impart information and ideas of all kinds, regardless of frontiers, either orally, in writing or in print, in the form of art, or through any other media of the child's choice." See http://www.unhchr.ch/html/menu3/b/k2crc.htm (accessed January 12, 2007).

58. In the survey of 1511 nine to nineteen year olds and 906 parents, neither children nor parents claimed great expertise, though children claimed more than their parents: 28 percent of parents, and 7

percent of children, who use the internet described themselves as beginners; 12 percent of parents and 32 percent of children considered themselves advanced users (Livingstone and Bober, *UK Children Go Online*).

59. Sonia Livingstone and Ellen Helpser, *The Role of Internet Literacy in Mediating Online Opportunities and Risks Among Teenagers* (manuscript under review).

60. Access, predictably, is strongly influenced by demographic factors, with boys, and older or middle class teens having better quality access and so, as a result, using the internet more and gaining more skills and more opportunities online, see Livingstone and Bober, *UK Children Go Online*.

61. Douglas Kellner, New Media and New Literacies: Reconstructing Education for the New Millennium, in *The Handbook of New Media*, eds. L. Lievrouw and Livingstone (London: Sage, 2002), 90–104; Kathleen Tyner, *Literacy in a Digital World: Teaching and Learning in the Age of Information* (Mahwah, NJ: Lawrence Erlbaum Associates, 1998).

62. Cary Bazalgette, *Making Movies Matter* (London: British Film Institute, 1999), www.bfi.org.uk; Toby J. Hindin, Isobe R. Contento, and Joan D. Gussow, A Media Literacy Nutrition Education Curriculum for Head Start Parents About the Effects of Television Advertising on Their Children's Food Requests, *Journal of the American Dietetic Association* 104, no. 2 (2004): 192–198.

63. Rene Hobbs and Richard Frost, Measuring the Acquisition of Media-Literacy Skills, *Reading Research Quarterly* 38, no. 3 (2003): 330–355; Yves Laberge, Media Literacy and Public Citizens, *European Journal of Communication* 19, no. 2 (2004): 249–253.

64. Freire and Macedo, *Literacy: Reading the Word*; Luke, *Pedagogy, Printing and Protestantism*; Warnick, *Critical Literacy in a Digital Era*.

65. Livingstone et al., Converging Traditions of Research.

66. Street, *Social Literacies*; Snyder, Literacy, Learning and Technology Studies.

67. In Livingstone et al., (in press), we suggest the concept of content legibility to mirror that of user literacy, noting that if a book is badly written or typeset, we do not call the reader illiterate but we are critical of the book—its producers, its form or its address. Similarly, if the news provides no accessible information about its sources, fails in journalistic conventions of objectivity, or is inconsistent in its editorial policy, we do not say the viewer is at fault in struggling to evaluate the message, rather, we point the finger at the broadcaster, the newsroom, the text. If a search engine appears to offer unbiased access to information resources while operating with commercial priorities invisible to the user, again we do not ridicule users for failing to discern this and so misunderstanding the value of the information obtained.

68. Paul Lazarsfeld distinguished the approaches of positivist or liberal scholars from those in the Marxist tradition, defining administrative research as that which "is carried out in the service of some kind of administrative agency of public or private character" while critical research "is posed against the practice of administrative research, requiring that . . . the general role of our media of communication in the present social system should be studied." His purpose was to distinguish research that takes its agenda from, and produces recommendations useful for, public policy or commercial gain, from research that maintains a critical independence from established institutions. The former takes on the responsibility of actively shaping social and technological change; the latter seeks to produce independent knowledge that critiques the strategic activities of the establishment. See Paul F. Lazarsfeld, Remarks on Administrative and Critical Communications Research, *Studies in Philosophy and Science* 9 (1941): 3–16.

69. Keri Facer and Ruth Furlong, Beyond the Myth of the "Cyberkid": Young People at the Margins of the Information Revolution, *Journal of Youth Studies* 4, no. 4 (2001): 451–469.

70. David Buckingham, Is there a Digital Generation?, in *Digital Generations*, eds. David Buckingham and Rebekah Willett (Mahwah, NJ: Lawrence Erlbaum Associates, 2006), 1–13.

71. Livingstone and Bober, Regulating the Internet at Home; Janis Wolak, Kimberly J. Mitchell, and David Finkelhor, *Online Victimization of Youth: Five Years on* (University of New Hampshire: National Center for Missing & Exploited Children, 2006).

72. Andrea Millwood Hargrave and Sonia Livingstone, *Harm and Offence in Media Content: A Review of the Evidence* (Bristol, UK: Intellect, 2006).

73. For example, the UK Communications Regulator has a legal duty to promote media literacy. Yet it is set up primarily as an economic regulator, see Robert W. McChesney, The Internet and U.S. Communication Policy-making in Historical and Critical Perspective, *Journal of Communication* 46, no. 1 (1996): 100. Thus Robert McChesney worries that a focus on literacy distracts policy makers and cultural critics from questions of power; as he puts it, the question is less what people do with the technology than "who will control the technology and for what purpose?" Notwithstanding such justified skepticism, see The Council of Europe, Integration and diversity: The new frontiers of European media and communications policy, March 10–11, 2005, http://www.coe.int/T/E/Com/Files/Ministerial-Conferences/2005-kiev/texte_adopte.asp, with many good intentions, developing policy that will "give special encouragement to training for children in media literacy, enabling them to benefit from the positive aspects of the new communication services and avoid exposure to harmful content" and "support steps to promote, at all stages of education and as part of ongoing learning, media literacy which involves active and critical use of all the media, including electronic media." The European Commission's Audiovisual and Media Policy also supports a broad conception of media and information literacies; see http://www.ec.europa.eu/comm/avpolicy/media_literacy/index_en.htm (accessed January 12, 2007). http://www.ec.europa.eu/comm/avpolicy/media_literacy/expert_group/index_en.htm. In North America, the Center for Media Literacy (http://www.medialit.org/), the Media Literacy Clearinghouse (http://www.medialit.med.sc.edu/), Citizens for Media Literacy (http://www.main.nc.us/cml/), the Alliance for a Media Literate America (http://www.amlainfo.org/home/our-members/organizations/academic-institutions), and the Association for Media Literacy in Canada (http://www.aml.ca/home/) all seek to promote media literacy.

74. David Oswell, The Dark Side of Cyberspace: Internet Content Regulation and Child Protection. *Convergence: The Journal of Research into New Media Technologies* 5, no. 4 (1999): 42–62.

75. Carmen Luke, *Pedagogy, Printing and Protestantism.*

76. Ibid., 131.

77. David Buckingham, Marjorie Scanlon, and Julian Sefton-Green, Selling the Digital Dream: Marketing Educational Technology to Teachers and Parents, in *Subject to Change: Literacy and Digital Technology*, eds. Avril Loveless and V. Ellis (London: Routledge, 2001), 20–40.

78. Howard Gadlin, Child Discipline and the Pursuit of Self: An Historical Interpretation, in *Advances in Child Development and Behavior,* eds. Hayne W. Reese and Lewis P. Lipsitt (New York: Academic Press, 1978), 12: 231–261.

79. Victor Quinn, *Critical Thinking in Young Minds* (London: David Fulton Publishers, 1997).

80. Stuart Hall, Encoding/Decoding.

81. cf. Livingstone, 2002; Snyder, *Page to Screen.*

82. Ulrich Beck, *Risk Society: Towards a New Modernity* (London: Sage, 1992).