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Challenges and dilemmas as children go online: linking observational research in families to the emerging policy agenda

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Challenges and dilemmas as children go on-line:

Linking observational research in families to the emerging policy agenda[i]

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Introduction

Across the industrialised countries - we are witnessing an expanding domestic market as well as a significant educational market, for the internet. Many families are going online for the first time. Schools are incorporating internet-based materials into the curriculum. For many adults, the workplace is a transformed technologically mediated environment.

As yet, most discussion of the internet is concerned with developments in technology and economy. In this presentation I want to open up what often seems like the 'black box' of the home, exploring what the internet means to children and their families at the start of the twenty-first century.

Any answers are inevitably provisional, because the internet – both as a technology and in its social contexts of use – is changing rapidly. And the answers are inevitably diverse, because however

unified the medium may be (and of course it is not), families are certainly not homogenous.

Exploring the provisional and diverse ways in which the internet is actually being used leads us to question some of the excessive amounts of hype – both optimistic and pessimistic – which surrounds the internet.

And I hope it allows us to move towards a more informed understanding of the significance and consequences of internet adoption and appropriation – as the internet becomes meaningfully embedded in our daily lives – for families, for society.

Growth in access/use of internet

In a survey of 6-17 year olds I conducted in the UK just 5 years ago, 1 in 5 had not even heard of the internet. Even among those who had, understanding of the internet was often limited. As one little girl asked, "isn't it something you plug into the back of the TV?". Moreover, only 1 in 5 had ever actually used the internet, and only a few middle-class children had access at home.

In the UK in 2001, a rapidly growing number of households have internet access. Among children 7-16:

> ➢ All use at secondary school (and most use it at primary school)

> ➢ 2 in 3 have internet at home (this is still heavily stratified, producing a digital divide)

> ➢ In 2001, 75% had used internet (vs 38% adults last month, though what use means varies)

The very rapidity with which these figures go out of date tells us about the speed with which the internet is diffusing through society.

This is in some ways exhilarating, but it is also demanding to adapt to and to live with. What I also find striking is how little we know of how people are making use of the new opportunities available to them.

In asking what all this means, I am concerned to avoid:

➢ The technologically determinist assumption that the internet simply impacts on society, instead seeing social change as shaping the introduction of technology.

➢ Thus, rather than focus on the newness of the internet as a radical break with previous media, I construe the internet as embedded in a continual process of change - involving some transformation and some re-mediation of earlier media, as a collection of linked media to be understood as adding to the array of older media now contributing to today's media-rich home and now increasingly central to children's media-dominated leisure.

➢ In attempting an approach which is primarily child-centred rather than media-centred, I also wish to avoid seeing children as passive, vulnerable, incomplete or in a process of becoming. Rather, we must recognise them as agents in their own right, actors in a social world partly, but only partly, of their own making.

➢ This does not mean I assume them to be sophisticated experts either – many are neither website creators or novice innocents, so it is better to try to capture the variety of childhood experience of the internet, asking in what respects are they competent, as understood both in their own terms and by the adult world.

Seeing through children's eyes

➢ We must recognise that it is integral to childhood to generate tactics to live within, or circumvent, the strategies by which adults attempt to guide or constrain children.

➢ A child-centred (rather than adult-centred approach) encounters some interesting problems of method – not just in terms of capturing the variety of children's experience, but also in respecting children's own voices as they make sense of their lives, including those aspects which they keep private, secret, away from the judgmental glare of adult attention.

➢ As one child said to me, giggling, 'maximise and minimise' – explaining how to juggle windows when a parent enters the room. I've seen the same tactic in the classroom, when as the teacher walks round the room, screens go up and down in front of the children just ahead.

➢ Researching children's use of the internet, then, is no easy matter, particularly as we move from questions of access (counting who has what in the home or school) to questions of use (its nature, quality, social conditions, personal meanings).

➢ For example, surveys show that children consider 'information' the most valuable use of the internet. Yet when asked, it turns out that by 'information', children mean games cheats, football results, music releases, etc – not exactly the educational content adults may have hoped for.

➢ Similarly, the policy-driven survey questionnaire asks, 'have you ever seen anything inappropriate that your parents wouldn't want you to see on the internet?'. One 8 year old girl answered this question, 'yes', telling me of a scientific website for determining the sex of your pet (with some graphic illustrations! – see slide); a teenage boy, on the other hand, tells me 'no' – but shall I believe him? As we get further into the interview, another account emerges.

➢ In this context, it is not surprising that surveys produce estimates of 'inappropriate or pornographic exposure' anywhere between 1 in 10 and 9 in 10 children! While much depends on how exactly we ask the questions, there are some other things we can do – checking out their favourites, for example, though it's expensive to do this on a large scale.

Towards evidence-based policy

In other words - researchers face some serious dilemmas.

➢ Clearly, even though the medium is 'new', family life is not yet unrecognisable; hence we should learn from the past of communication research. We know the difficulties of researching television viewing – from determining bald viewing figures (a matter of some desperation for the industry) to understanding the experience of viewing (opening up an agenda for reception studies) to documenting harmful effects (a research minefield).

➢ Research more easily tracks information and communication technology to the front door than it identifies the nature and quality of use within the privacy of the home.

➢ In relation to the internet we must anticipate considerable difficulties, with parents serving as highly unreliable informants on their own children, with computers often located in small, private computer rooms or bedrooms in the home, with the text now hypertextual, interactive, and so ever more indeterminate.

➢ It is not surprising, then, that very little empirical research has yet been published – and too many researchers rely on speculation or even observations of their own children.

➢ And yet, the policy community wants some answers now. It is formulating policy while researchers consider their next steps. Are children finding sites they shouldn't? How can the internet best support their education? Are they running risks with their personal safety? Does the internet socialise or isolate them? And so on.

➢ In the UK, we talk about 'evidence-based' policy, yet for the internet this evidence is proving difficult to obtain.

Let me now move on from some of the dilemmas identified above, to draw out some observations from my current research as these relate to the emerging policy agenda. While any conclusions would be premature, I would like to take his opportunity to frame some of the key challenges, as I see them, for a child-centred agenda of research and policy regarding internet use.

Ethnographic observations in 30 homes

In my present empirical project, *Families and the internet,* I've conducted an ethnographic-style study of internet use at home among thirty families from diverse social backgrounds, each with children aged between 8 and 16.

➢ Through a series of visits to each home, we have been spending time informally sitting with children while they go on-line, unobtrusively (more or less) observing their decisions about what to do and where to go, their skills in achieving their aims, and the nature of the social situation thereby generated, including interruptions from siblings, chatting with friends, advice from parents, the simultaneous monitoring of a favourite television programme, and so forth.

➤ In addition, we interviewed the parents and teachers, visited schools, asked children to keep a 'communication-diary', invited internet-related pictures and took photographs, etc. The aim is to characterise young people's internet use at home in order to understand how the emerging culture of internet use may be shaped by, and may itself be shaping, family life, peer culture, the home-school relation and the relation between home and community.

So, we've visited:

➤ Wilf, a typical 10 year old, who mainly uses AskJeeves and Encarta for his homework, while playing games on the Cartoon-Network site; he's notably more competent than Charlie, also 10, whose mother manages his internet use for him; he has not yet figured out how to go beyond the AOL home page and so finds the internet boring;

➤ Sally, a lively 15 year old who whisks between multiple chat and multiple email identities to sustain a complex matrix of social contacts;

➤ Anisah, a serious 12 year old, living in a notoriously deprived housing project with her highly educated but poor African parents, who uses the internet to support her studies and so further the ambitions of her family;

➤ And teenage boys - Manu, son of parents from India, who visits Indian chat rooms, but then pretends he's an aggressive adult to get everyone to leave the chat room; and Jim, who uses the internet mainly to find material which his teachers can't trace, which he alters minimally and passes off as his own homework;

Understanding the internet

We might pause here, and ask: what is the internet? Since academics haven't nailed down a definition yet, it's hardly surprising that children and their parents and teachers are still grappling with this new technology.

For families, the internet is still a fragile medium, not yet taken for granted. It is experienced as complex, unfamiliar, easier to get wrong than right. Unlike television or a book, it is far from transparent

- one cannot focus straightforwardly on the content, for the technology gets in the way. It's in their homes, but is it:

➢ a way of shifting online the everyday activities of shopping, writing, looking up information that you do already offline?
➢ a new kind of superpowerful brain behind the humdrum computer keyboard?
➢ a set of connections among bits of kit, linking computers, servers, networks, etc?
➢ a set of connections among people, linking each individual to the rest of the world?

Well, it is all of these, of course, though not all are equally salient or effective, in different families. Ask children to draw television, and the images are funny, quirky even, but not so interesting as these images of the internet. Among other things, each of these images raises questions about the positioning of the user – here, the child – in relation to the medium. In other words, I think these pictures are telling us something interesting. Let me elaborate.

Think back half a century to the arrival of television. Because it arrived at the height of a normative conception of the home-as-sanctuary, it was seen as a threat to conversation, family values, childhood innocence, etc. Over the past half century, for a variety of reasons to do with changes in both family life and the labour market, as well to do with the expansion of domestic information and communication technologies, the family home has undergone a further transformation. It is no longer a sanctuary, deliberately kept apart from the demands of work and community.

Rather the home is becoming a key node in a wide – even global - network, defined precisely through its connections with, rather than separation from, work, school and community. In the emerging notion of family-as-network, defined by its activities and connections rather than its traditions and boundaries, the home is the point of intersection for family members' increasingly individualised lifestyles. These lifestyles are significantly externally-directed - 'work-related', 'school-related', 'community-related', etc - yet they increasingly occur within the home.

So, ask where is the user in these images of the internet, and what is apparent is that the user is networked – precisely not off in a world of their own, but part of the world where everyone else is too.

Education or entertainment?

In relation to children and the internet, one particular type of connection is most important, namely the shifting relation between entertainment and education. There are lots of unresolved questions here.

In our observations at home, we see evidence of both the deconstruction of the traditional boundary between education and entertainment, so that these are no longer defined in opposition to each other, and also an attempt to reassert or reconstruct new conceptions of education and entertainment.

➢ In the UK it is government policy that communities and households should create informal learning environments, beyond the school but linked (in a manner not yet clear) to the school. Learning happens anyplace, anytime, and it is parents' responsibility to ensure this occurs at home. Indeed, families have responded dramatically, making a significant investment in resources (time, money, space, effort) invited of them by government and industry, buying expensive ICT equipment, squeezing it into whatever space is available – typically into the living or family room which was once the place of escape - all in the name of 'enhancing their children's educational prospects', enthusiastically transforming their homes from a screen-rich 'leisure centre' into an 'informal learning environment'. All with rather little evidence that it works.

➢ Lacking clear guidance, parents (and teachers) – and also children - are developing their own, theories about what is 'educational': some are conservative, stressing keyboard skills; others are utopian, mapping futuristic new notions of literacy. At the same time, parents attempt to re-assert the traditional boundary between education and entertainment, making up domestic rules like - no games till you've done your homework; only use the printer for school work; priority on the internet goes to whoever is using it for something 'serious'.

➢ The traditional authority hierarchies associated with knowledge and education (as traditionally pursued through book-learning) are breaking down, as families acknowledge the increasingly individualised and flexible specialisation of knowledge. Thus for

certain purposes, a child becomes the expert in the home, allowing new powers and responsibilities. Kids are researching the family holiday or doing Dad's accounts, and who can check if they've done their homework well?

➢ While many teachers see the internet as facilitating the improved delivery of a traditional curriculum, some parents and educationalists are excited by the potential of the computer to encourage learning through play (rather than learning opposed to play), learning-by-doing (rather than learning-by rules), and just-in-time learning (rather than knowledge-in-advance, in-case it's needed). While many adults look for the rule-book, access the help system, check out the system parameters, children just pitch in, work it out as they go along, feel their way as they explore the possibilities. Who gets the most from the medium? We don't yet know.

➢ Despite this uncertain pedagogy of domestic technologies,[1] what we might term the 'curricularisation' of leisure means that the state is encouraging parents to take on a commitment to ensuring that children's leisure fits with educational goals (empowering the family, but also relieving the state). To the extent that children are indeed forging valuable new forms of communication, learning through play, or finding ways of creatively producing content, these will be re-incorporated back into the curriculum, becoming reified as 'tasks' or 'goals', re-imposed as the duties of successful children and parents ('hasn't your child made her own website yet?').

This deconstruction and reconstruction is fraught. The more parents and teachers try to impose a curriculum, a timetable, a set of external moral values on leisure, the more children's tactics of micromanagement within the household play with, or subvert, these attempts. Hence they claim educational value to games or surfing, they sustain online chat in parallel with doing homework, they maximise and minimise windows depending on who is watching them, they ignore the printed text on websites (generally described as 'boring'), just scanning for the interactive, visual and auditory features. The very terms within which children and adults argue the value of all this are themselves contested.

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[1] David Buckingham (2002). The electronic generation? Children and new media. In L. Lievrou and S. Livingstone (Eds), The Handbook of New Media: Social Shaping and Consequences of ICTs. London: Sage.

Searching and literacy …

However, we should not assume that children are such very skilled internet users. Notwithstanding their skills at multi-tasking and having fun with the internet, we have observed many children (and their parents) challenged by the task of searching for what they want on the internet.

Kids click fast and furiously, but not always to great effect. Many know little about searching, search engines or search directories. Nor are they skilled at the appropriate use of keywords. They may not be sure if their email actually got sent. They rarely use bookmarks to retain what their favourites. Most hold web addresses in their heads, some type full URLs into search term boxes.

For example, Anisah, aged 12, looked for pictures to illustrate a school project on China. She searched using the keyword 'China'. As is common, she failed to pay attention to the text on the sites she chooses, and didn't notice that this produces, as well as sites on China the country, other sites about china/ porcelain. Consequently she ends by selecting a picture of some colourful plates from Maine in the USA to include in her project.

It is easier, incidentally, to be a fan than to be a good pupil – for fandom provides a convenient and precise set of keywords to guide access. The teacher's set task – find 5 facts about space – is surprisingly difficult, but the child's task – search for Harry Potter, or Robbie Williams, or Barbie – is relatively easy.

This raises some questions about literacy, and their levels of their literacy seem rather low at present. Definitions of internet literacy abound, but little is agreed as yet? Following earlier work on media literacy, I suggest that it includes:[2]

➢ The *Analytical Competence* in understanding the formal qualities of the internet (including how web sites are constructed, how to search, how hypertext links work, the symbolic codes of the web, etc) - a prerequisite for effective use of the internet.

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[2] See Cary Bazalgette's analysis of children's cinema literacy (*Making Movies Matter*, 1999, London: BFI). See also Livingstone, S. (2001). Online freedom and safety for children. **IPPR/Citizens Online Research Publication No. 3**. London: IPPR/Citizens Online.

- The *Contextual Knowledge* to understand the broader social, cultural, economic and political contexts in which internet information is produced and consumed – essential for a critical evaluation of the internet.

- A shared frame of reference among users, which we might term a *Canonical Knowledge* of 'classic' web sites and an understanding of why are valued - essential for a shared or communal use of the internet.

- The *Production Competence* to produce internet content as well as interpret, consume and enjoy it (including creating web pages, productive searching, participating in mailing lists, chat groups and email) – all central to expressing one's identity through communicating content.

But literacy is not just something people have or have not….

I watched Megan, aged 8, diligently and accurately typing complex and personalised questions to a 'Jeeves' who could only respond to simple, standardised questions.[3] Specifically, wanting to research the purchase of a hamster for her friend, Megan asks Jeeves, "what breed of hamster is friendlier than russian hamsters?". Jeeves answers, "How do I say a word in Russian?" and "what is the alphabet in Russian?"

Whose literacy is lacking – Megan's or Jeeves'? It is easy to say that Megan needs to be better taught. But literacy is an interface concept, describing the relationship between a communication technology and the user's competence or skills. Megan expects an intelligent interlocuter, she thinks interactivity means she will be properly listened to. But Jeeves is programmed to respond to key words, and so he lamentably underestimates the intelligence of his young users.

Perhaps eventually Jeeves will be better designed. But to the extent that Jeeves fails her, it is Megan who will have to adjust. And being bright, Megan learns. I watch her give up on her complex questioning of Jeeves and reframe her thoughts in terms of everyday key words and 'tell me more about….' follow up questions.

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[3] Livingstone, S. (2001). Children on-line: Emerging uses of the internet at home. **Journal of the IBTE** (Institute of British Telecommunications Engineers), 2(1), 57-63.

As the critical educationalists would put it, we must ask whether education is a matter of answering questions or of questioning answers? If the latter, the internet is a poor tool, encouraging 'right answer' learning not critical thinking.

Rarely does the internet invite children to judge for themselves the truth or value of the information it offers them, and rarely also do websites advise on the criteria by which such an evaluation might be reached. Rather, website design encodes what Stuart Hall (1980) called the preferred reading - frequently asked questions, recently asked questions, top ten lists, fact of the week, our favourites, etc. But even searches can go wrong. And this is where people get worried about the new, networked home. And where literacy becomes less a matter of evaluating knowledge and more a matter of 'reading the world', as Paolo Friere put it.

Risks: just one click away …

One notable aspect of kids' internet use is that plenty of sexual, or pornographic images are just one click away.

➢ From my close but cautious interviewing in these 30 families, I suggest we would be naïve if we didn't think that many – even most - have encountered some degree of inappropriate content. Examples include the innocent search gone wrong – Boyzone (see slide), whitehouse.com (see slide), Hitler (not world war two but sadomasochistic images); the unwise chat, as when a teenage girl conducts a lengthy and increasingly personal conversation with a much older man; the surprisingly explicit spam in the hotmail inbox; the checking out of where Dad last went using on the history file; the cheeky search for mild porn which proves harder than expected to get out of; and so on.

➢ This is probably the area where there are most regulatory initiatives. The dangers have been argued to include contact, content and commercialism. However, most public concern is over sexual contact through online chat, then concern centres on pornographic content – rather little concern over other kinds of content (bias or misinformation, racist/hate sites, gambling sites, commercial exploitation).

Being realistic about the dangers

➢ Such surveys as exist suggest only a minority of children claims to tell anyone, particularly an adult, about such occurrences. The most recent surveys suggest children are beginning to wise up about safety online – becoming more aware of the hazards of giving out personal information, for example. They also find that children claim not to be bothered by finding such content. Are they really unaffected or is this the veneer of cool?

➢ These questions are very hard to answer. Observers in Europe sometimes comment that we – in both UK and USA – are relatively prurient nations, obsessed by keeping sexual images away from children. Moreover, apart from the mounting – and significant - evidence of unwanted sexual contact being addressed to children through the internet, there is little evidence of harm, particularly from the legal pornography which many parents don't wish children to see, and which children are generally unprepared for.

➢ The link between risks, incidents, and actual harm is genuinely tenuous – not all risks taken result in worrying incidents, and not all incidents result in actual or lasting harm. Whether one can even research what children have seen, whether it upset them, and what it meant to them, is dubious. The researcher runs the ethical risk of making more of an issue of such occurrences, or of putting ideas into children's heads. I asked my 12 year old if he'd seen pornography on the internet, and found myself having to explain pornography in a way I hadn't had to with him before!

➢ Yet the risks in relation to the internet do seem different from other media. Particularly, parents are comparatively ignorant – here is a medium with no connection with their own childhood, a medium they may feel much less expert with than do their children, a medium with unprecedented dangers compared with other media: there may be porn channels on the television, and erotic magazines in the supermarket, but images from them don't pop up unexpectedly when researching school work.

➢ Not only are parents often ignorant, but governments are unusually determined to devolve responsibility to them – the harder media get to regulate nationally or internationally, the more parents are expected to step in and fill the regulatory gap.

Few can manage the technical fix – in one interview, an exasperated mother fantasised about boarding up the door to the computer room because she couldn't work AOL's parental lock. Parents would rather suppose their children are sufficiently responsible to regulate themselves, resulting in a kind of benevolent neglect.

Although no parent denies their moral responsibility for supervising their child(ren), and in terms of access at least they have clearly accepted this responsibility by investing in expensive technology at home, leaving things to parents remains an unsatisfactory solution to the challenges of internet regulation.

It is also a task for which many parents feel ill-equipped and insufficiently supported. Crucially, there are issues of expertise and resources, as well as questions of responsibility, at stake. As a result, depending on parents raises prospects of generating new social inequalities in the quality of internet use.

Freedoms and dangers: parents' approach and children's use

Getting the balance right between opportunities and dangers is not easy. In regulating children's internet use, we risk two failures – the failure to take up opportunities, and the failure to protect against dangers. Only policies which combine literacy and safety can support the exploration, experimentation and creativity required if children are to use the internet freely and fully.

At present, and perhaps inevitably, I suggest that children's freedoms are being compromised to ensure their safety. The pressure to go online, combined with an at best partial understanding on the part of parents, is supporting a climate of anxiety that leads many parents to heavily restrict their children's use.

In my research, I have observed many instances where parental fears of the risks – whether technical, sexual or commercial – resulting in children fearful of, or not allowed to, download files, use email, answer dialog boxes, use file attachments, go to chat rooms, etc. Regulators are following suit. For example, the UK government promised every pupil an email address, and then withdrew the offer following anxieties about online stranger danger.

Yet if we take children's perspective seriously, we'll see that their tactics tell us something. We can't just deal with the dangers by telling parents to constantly supervise kids or by banning interactivity or communication, or by telling kids to be sensible, responsible, honest. For what is empowering for children about the internet is precisely the interactivity, the communication, the identity play, the lying and being silly, the being private or expressive.

This leads me to suggest that balancing literacy and safety, protection and education, is crucial:

➢ The worst scenario is when parents' (and society's) understanding of the opportunities of the internet is low while their awareness of its dangers is also low. Their children are likely to make haphazard, suboptimal use of the internet while also running some risk of dangers.

➢ If parents' (and society's) understanding of the opportunities of the internet is high, but their awareness of its dangers is low, we see confident and perhaps creative exploration of the internet by their children. Yet they may be exposed to the risk of dangers they and their parents are not prepared for.

➢ Most common is the situation in which parents' understanding of the opportunities of the internet is low, but their awareness of its dangers is high. These parents impose largely 'negative' regulation, resulting in their children being cautious, conservative, even fearful in their use, tending to restrict themselves to a narrow range of activities or sites and with insufficient opportunity for spontaneous learning.

➢ The fourth option, all too rarely in evidence as yet, is when parents' (and society's) understanding of the opportunities of the internet is high, but so is their awareness of its dangers, providing conditions where the benefits of the internet are maximised through confident and free exploration while the risks are minimised through forewarning and guidance

Literacy is obviously a matter of education. But safety can be addressed both in educational terms and as a technical/legislative matter. As yet, technical solutions to ensure online safety don't work well, encountering persistent practical difficulties - at best they

provide only part of the solution; at worst they engender a false sense of security.

Significantly, technical and legislative solutions tend to trade freedoms against safety, while education allows for a both/and approach, guiding children towards valuable uses of the internet while also teaching them safety awareness.

What is at stake is not just whether children participate but also the manner of their participation. Children's activities online, just like their activities offline, set out to be free, creative and expressive often precisely in ways which contravene adult notions of propriety – they want to flirt, make up identities, swear, send photos, gatecrash adult chatrooms, go places their parents don't know about, be private.

Walled gardens

In short, I am arguing that in seeking to protect young people from risks, we must ask about the costs as well as the benefits of our protective strategies. So, if walled gardens are advocated, one must assess their costs and benefits, just as we must decide whether to make the streets and countryside safe for children to roam (offline) or rather whether we should to build them more parks to play in safely.

For children, the 'walled garden', like the garden at home, offers a safe place to play precisely because there is no way out. The top 10 search terms typed into MSN (UK) indicate that children's preferred means of accessing the internet is through being a fan of something or other. Fandom-based searches generally take them directly to commercial walled gardens rather than empowering them to explore the anarchic freedom of a public-spirited web. And children seem to have little awareness of the constraining techniques of these sites, with their invisible walls and behind-the-scenes protectors.

The walled garden is clearly, however, a response to the unresolved problem of online dangers. Concerns that it raises another kind of danger – of commercial exploitation, brand-consciousness, impeding freedoms and rights to open, public information – are lost in the welcome such sites receive from anxious parents. It begins to seem positively unsafe to encourage kids to exercise their right to explore.

But this is just one model of the web, offering sites designed to be self-contained so as to catch and keep the user within the site; a model in which the home page epitomises a particular relation between identity and place. James Clifford[4] contrasts two conceptions of culture, and identity, arguing that 'ethnography… has privileged relations of dwelling over relations of travel', and that rather than focusing on roots or rootedness in a locale we must shift the frame so as to make visible the many journeys or routes that together constitute the daily life of communities.

Roots/routes in cyberspace

Interestingly, when children talk of the experience of control, of abundance, of individual choice in relation to the internet, it is often the experience of travel, of routes, of surfing, that seems predominant. And as the activity constructs the actor, so do the routes traversed through the world wide web seem as significant as the sites themselves, if not more so, in the construction of the child's identity.

These two models – roots and routes – represent alternative literacies, alternative ways in which users engage with the internet. For example, an 11 year-old boy proudly shows us his personal website. If we read this website for its content in terms of 'roots', it is sparse indeed, for Daniel has written nothing about himself and has merely directed the visitor onwards to further sites of interest. For anyone seeking a place to stay, there is little reason provided here. And Daniel doesn't seem highly literate, therefore.

But if we read the site in terms of its links, not what information is present, but what connections are offered, quite a different interpretation emerges. By positioning himself in relation to his three selected hyperlinked websites, chosen from many possibilities, Daniel tells us several significant things about himself. First, he prioritises educational uses of the web, anticipating a user who, like him, faces the challenge of searching the web for specific information.

Through his accompanying text, he declares that he is serious about learning but ready to have fun, and that he is creative in his thinking and adventurous in going beyond the limitations of Encarta, currently

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[4] Clifford, J. (1997). *Routes: Travel and translation in the late Twentieth century*. Cambridge, Mass.: Harvard University Press.

the mainstay of many children's informal learning environment at home. More tenuously, Daniel attempts to create a symbolic connection between himself, just one small boy in a suburban town in the UK, and three of the most powerful commercial bodies on the web, implying that through this link he himself may provide value to other travellers and perhaps gain value himself by the association.

The challenges ahead

Let me draw to a close, then, by suggesting that:

> First, we need to develop, and debate, a more sophisticated account of internet use, and account which I have centred here on questions of literacy.

> This would include not just technical skills, but also the competence to seek out, evaluate, share and produce knowledge. Of course the social contexts of use are also crucial, as are the social inequalities they generate – but that's another talk.

> I have suggested that we must be realistic about the dangers, and imaginative about the opportunities which the internet offers. As a society we lack a concrete vision to guide and inform our expectations for internet use. And too much public discussion centres on what the internet should not be rather than on what it is or could be.

> Thus I want to stress that in policy terms, safety and literacy must go hand in hand. And we must be careful how far we restrict children – balancing their safety against their rights – to be private, expressive, silly, playful – without constant parental supervision.

> In short, we must take children's experiences seriously if we are to understand the changing relations between adult and child expertise, entertainment and education, the privacy of the home and young people's connection to the world. But at least this makes for a challenging and stimulating research agenda!

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[i] This paper draws on an empirical project, *Families and the internet*, funded by BT 1999-2001.