

Cyberkids? Exploring Children's Identities and Social Networks in On-line and Off-line Worlds

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In the first rush of academic and popular commentaries on cyberspace, a stark opposition has been drawn between off-line and on-line worlds—the “real” and “virtual.” Such understandings of the relationship between these spaces are now increasingly subject to critique, yet relatively little is known about how people actually employ information and communication technologies (ICT) within the context of their everyday lives. In this article, by drawing on research with children aged 11–16, we provide primary empirical material demonstrating how on-line spaces are used, encountered, and interpreted within the context of young people's off-line everyday lives. In doing so we consider both how children's “real” worlds are incorporated into their “virtual” worlds and how their “virtual” worlds are incorporated into their “real” worlds. In other words, we demonstrate how the real and the virtual are mutually constituted. We also reflect on some of the forms of “private” and “public” spaces constituted by children's activities on and around the screen. *Key Words:* children, cyberspace, identities, social networks, spatialities.

Cyberspace is one of “the zones that scripts the future” (Haraway 1997, 100). Just as industrial technology transformed Western society in the nineteenth century, so many contemporary academic and popular commentators argue that information and communication technologies (ICTs) are about to inflict widespread social, cultural, economic, and political change upon the twenty-first century (for an overview, see Adams 1998; Kitchin 1998a, 1998b). Notably, this technological advance promises to deliver greater efficiency, speed, power, control, and knowledge, and with this the potential for personal development, the transformation of work, and the production of value (Marshall 1997). Information is replacing manufacturing as the dominant form of employment and investment in the contemporary West. In the U.S., for example, it is estimated that 60 percent of jobs now require technological skills (Benton Foundation 1998), with the consequence that “[I]n an increasingly knowledge-based economy, information is becoming at least as important as land and physical capital” (Baranshamaje et al. 1995, 2). Kroker and Weinstein (1994, 163) argue that computer literacy will form the basis of membership in an emerging “virtual class,” because the technologically competent will be able to convert their intellectual capital into both economic and cultural capital. Furthermore, the possibilities that ICTs offer users to access information and communicate with whom they want, freed from the material and social constraints of their bodies, identities, communities, and geographies, mean that these technologies are regarded as potentially liberating for those who are so-

cially, materially, or physically disadvantaged (Turkle 1995).

ICTs are also increasingly evident in political visions of social inclusion and cohesiveness, because they are seen as a means of facilitating higher levels of participation in the political process and as a way of producing more informed democracy (Moore 1998). For example, various experiments have been conducted in the U.S. using public electronic networks (PENs) to enable citizens to access local politicians and to take part in on-line debates about local issues (Schuler 1995). Indeed, as the use of ICT becomes more widespread, with more activities (such as shopping, banking, and voting) available on-line, the disadvantage of lacking technological skills will stretch beyond the labor market. Not only will the technologically illiterate be excluded from many forms of employment, they will also suffer wider social exclusion because they will be unable to participate in “normal” activities (Valentine, Holloway and Bingham forthcoming). Further, if individuals or groups are unable to exercise their rights and responsibilities, they will also be denied full citizenship (Steele 1998).

As we enter this so-called Information Age, children—as symbols of the future—are at the heart of debates both about how the possibilities that ICTs afford should be realized and about the dangers of social exclusion for those who are not technoliterate. For example, in his 1996 State of the Union address, then-U.S. President Bill Clinton declared that “every classroom in America must be connected to the information superhighway, with computers and good software, and well-trained teachers”

(Clinton 1996). British Prime Minister Tony Blair shares this goal: his government is investing U.K.£700m to construct a network to which all 30,000 U.K. schools will be connected and to enable every British child to have an e-mail address.

Computer companies have been quick to exploit parents' fears that their children may become disenfranchised from the Information Age if they do not have access to appropriate technologies. The educational advantages of a home computer and the potential employment rewards for those who become technologically literate are frequent themes in their marketing campaigns (Valentine and Holloway 2001b). Statistics suggest that over 40 percent of U.S. households now own a home personal computer (PC) (URL 1), while the British government's "IT for All" survey (conducted by the British Market Research Bureau) found that 34 percent of U.K. respondents claimed to have a PC at home even if they did not use it. Families with children have the highest levels of PC ownership.

As such, the Internet-connected PC is the latest form of media (following television, stereos, console games, etc.) to play an important role in children's peer group relationships (Suss et al. 2001). Indeed, the availability of PCs and other media in children's bedrooms has been credited with producing a bedroom culture (Livingstone, Gaskell, and Bovill 1997). For some adult commentators, this is a cause for concern. The fear is that computer-obsessed children will socially withdraw from the off-line world of family and friends, thereby missing out on the imaginative opportunities for play that the outdoors is perceived to offer, and that they will become addicted to the screen, putting not only their social but their physical well-being at risk (Holloway and Valentine forthcoming).

Some commentators also fear that children's on-line activities will bring with them new dangers. Cyberspace is a contemporary site of anxiety. Mass media commentaries have highlighted the fact that children may be at risk of corruption from material they can find on the Internet, and of abuse at the hands of strangers whom they might encounter in chat rooms. This fear is compounded by the fact that parents and teachers—particularly those who are less technologically literate than young people in their care—have a limited ability to control or filter what children might see and learn on the Internet, where "adult" images of the world, such as pornography, are readily available (Valentine and Holloway 2001a). In this way, ICTs are regarded by some as a potential threat, not only to individual children but also to childhood as an institution, because of their potential to threaten childhood "innocence" and blur the differenti-

ation commonly made between the states of childhood and adulthood.

However, despite the importance that contemporary Western governments are placing on developing children's access to and use of ICT and its connection to the future economic well-being of their economies, and despite the concerns that popular commentators have raised about what this means both for individual children and for childhood itself, little is known about how children actually employ ICT within the context of their everyday lives. There are two reasons for this. First, children are a relatively underresearched group (Holloway and Valentine 2000a). While a small but significant literature on children's geographies exists dating back to the 1970s (Bunge 1973; Hart 1979) only in the last few years has research in this subfield of the discipline reached a critical mass (Holloway and Valentine 2000a). Informed by work from the new social studies of childhood, which understands children as social actors in their right rather than as incompetent or incomplete adults (Qvortrup et al. 1994; James, Jenks, and Prout 1998), contemporary children's geographies reveal the extent to which adults know relatively little about children's own social worlds (Valentine 1997).

Second, despite the growing importance of the Internet in the Western world, there are surprisingly few empirical studies of people's actual use of ICT. Much of the contemporary writing about cyberspace within the social sciences is theoretical, rather than empirically informed. Research that has focused on actual practices has tended to concentrate on the growth of on-line cultures through multi-user domain (MUD) environments (textual virtual environments created by a programmer or participants; see, for example, Turkle 1995). In other words, it has concentrated primarily on extreme users and utopian visions of virtual life, rather than looking at the complex ways in which ICT is used and made sense of in everyday worlds (Kitchin 1998a). The current article is important, therefore, because it provides a body of empirical data—based on a questionnaire survey, participant observation, and interviews—about the way ICTs are used in practice by children aged 11–16, and because in doing so it also further advances our understandings of children as social actors.

In the following section of this article, we elaborate on the theoretical understandings of ICT that inform this study by situating it within contemporary work from social studies of technology and geographies of cyberspace. We also expand on the nature of the research upon which this article is based. We then present our empirical data in two sections.

The “Real” and the “Virtual”

In the first rush of academic and popular commentaries on cyberspace, a stark opposition was often drawn between off-line and on-line worlds, the “real” and the “virtual” (Heim 1991; Laurel 1991; Springer 1991). In such representations, the two worlds are regarded as distinct or unconnected from each other and as possessing different, usually oppositional, qualities (see Doel and Clarke 1999). For some commentators (e.g., Heim 1991; Thu Nguyen and Alexander 1996), whom we have described elsewhere as the “boosters” (Bingham, Holloway, and Valentine 1999a, 658), “virtual” space is understood to be an improvement on the “real” world, a chance to fill out or overcome its limitations. For other commentators (e.g., McLaughlin, Osbourne, and Smith 1995), whom we have dubbed “debunkers” (Bingham, Holloway, and Valentine 1999a, 658), the “virtual” is regarded as inauthentic, a poor copy of the “real.”

In particular, boosters have uncritically celebrated on-line worlds as disembodied spaces, in contrast to the materiality of “real-world” environments. On-line technology has been valorized for its perceived promise “to deliver its users from the constraints and defeats of physical reality and the physical body” (Robins 1995, 139). Most notably, boosters have heralded ICT as a disembodied form of communication that offers users the utopian possibility of escaping the encumbrance of their material bodies by enabling them to create and play with on-line identities (Springer 1991; Plant 1997). For these commentators, the material body is not simply rendered invisible on-line: it becomes completely irrelevant (Stone 1991; Thu Nguyen and Alexander 1996).

As well as reconfiguring human embodiments in this way, boosters have also claimed that ICT create new forms of social relationships in which participants are no longer bound by the need to meet others face to face but can expand their social terrain by meeting others located around the globe on-line, mind to mind. Indeed, some commentators go so far as to suggest that “virtual” relationships are more intimate and richer than off-line relationships because they are formed on the basis of genuine mutual interest, rather than being based on the coincidence of off-line proximity.

In these representations, then, “virtual” space is characterized not simply as set apart from everyday life, but as transcending it—a hyperrealization of the real (Doel and Clarke 1999). It is regarded as a zone of freedom, fluidity, and experimentation that is insulated from the mundane external realities of the material world (Laurel 1991; Springer 1991), a zone in which it is possible to suspend the “real” self. For example, Wilbur (2000, 48) suggests

that the emancipatory discourse of disembodiment offers “the possibility of stepping beyond and remaining one’s self in some lasting way through virtual identity play.” Likewise, Heim (1991, 76) argues that the human/machine interface can “often eliminate the need to respond directly to what takes place between humans.”

Like boosters, debunkers also view the “real” and the “virtual” as both different and separate worlds. However, these commentators view on-line worlds as a bad imitation of or poor substitute for the “real world.” For example, disembodied identities are regarded as “inauthentic” in contrast to embodied identities, while on-line forms of communication have been represented as commodified, privatized, and individualized exchanges, in contrast to the more communal nature of social relationships in the off-line world (McLaughlin, Osbourne, and Smith 1995). Such writers characterize ICT users as so immersed in on-line culture that they become detached from their off-line social and physical surroundings and thus “removed from the fullness of ‘real’ human existence” (Robins 1991, 66).

In the eyes of the debunkers, the “virtual” (the false, the inauthentic, the new, the disembodied) threatens to invade or pollute “the real” (the genuine, the authentic, the traditional, the embodied). For example, Paul Virilio conjures up images of “the disappearing city where chronological topographies replace constructed geographical space, where immaterial broadcast emissions decompose and eradicate a sense of place” (summarized in Ostwald 1997, 467). Likewise, as we mentioned above, popular commentators often paint a picture of children as so immersed in on-line worlds that they turn away from the “real,” becoming detached from off-line social and familial relationships and withdrawing from public outdoor space into on-line fantasy spaces. In these understandings, the “real” is represented as a fragile world under threat from the seductive lure of the “virtual” (Doel and Clarke 1999).

While boosters and debunkers differ about whether the development of on-line worlds is positive or negative, they share a tendency to regard the “real” and the “virtual” as not only different but also discrete. Research on cybercultures has commonly focused on users’ on-line activities, ignoring the way that these activities remain embedded within the context of the off-line spaces and the social relations of everyday life. Such understandings of the relationship between on-line and off-line worlds are now increasingly subject to critique (see, for example, essays in Crang, Crang, and May 1999).

Indeed, the ability to access on-line space presupposes certain off-line material resources, not least of which are access to a computer and the electricity to run it. A digi-

tal divide exists in terms of access to ICT, both between and within countries and parts of the world. Since not everyone is equally equipped to take advantage of on-line opportunities (Kitchin 1998a, 1998b), our understandings of telecommunication technologies need to be contextualized in specific places and times (Larner 1999). Wakeford (1999) has also highlighted the importance of the off-line spaces in which technologies are accessed. She (179) refers to cybercafés as “translation landscape[s],” off-line spaces through which on-line spaces are produced, mediated, and consumed.

Other writers have challenged the way that the “real” and the “virtual” are imagined in opposition to each other. In a study of the use of the Internet by community organizations in Chicago, Light (1999) questions the way that ICT are perceived to threaten the vitality of “real” cities. Her observations suggest that rather than being set in opposition to the off-line world, on-line activities offer new ways to revitalize people's engagement with the city. In a similar vein, a number of authors have also begun to criticize the discourse of disembodiment. Sobchack (1995), describing her experience of suffering postoperative pain following cancer surgery while using ICT, puts paid to the boosters' romantic claims that such technologies provide a means for transcending the material body. Echoing this point, Argyle and Shields (1996, 60) comment that “There is no loss of body in and through virtual reality technologies. While we may ‘lose ourselves’ in a good book or in the trance-like state of on-line interaction, we know that this is a change of consciousness: something in the mind, not the body.” Critiques are also emerging of the debunkers' claims that on-line interactions and relationships are not only distinct from but also less authentic than off-line encounters. As Wark (1994, vii) explains: “virtual geography is no more or less ‘real.’”

Yet, despite the growing unease with the way on-line and off-line spaces are often dichotomized, research has so far failed to map the complex ways in which on-line activities are embedded within “real-world” lives (Kitchin 1998a, 1998b). In this article, we reject any suggestion that on-line and off-line worlds are oppositionally different or unconnected. Rather, by focusing on children's situated consumption of ICT, we aim to provide primary empirical material that demonstrates *how* on-line spaces are used, encountered, and interpreted within the context of young people's off-line everyday lives. In doing so, we consider both how children's “real” worlds are incorporated into their virtual worlds and how their virtual worlds are incorporated into their “real” worlds. In other words, we demonstrate how the “real” and the “virtual” are mutually constituted. This article thus contributes to

geographies of cyberspace and to social studies of technology by providing empirical evidence of how ICT is embedded within everyday life and by highlighting the spatialities produced in this process. Further, it contributes to children's and young people's geographies by informing adult understandings of children's on-line and off-line worlds. In doing so it also enlightens popular media and policy debates about children and Internet.

In examining how children and technology come together, however, we want to reject any simple technological determinism. By “technological determinism” we mean narratives in which a “new” technology is presumed to *impact* (either positively or negatively) on society, replacing what has gone before and producing a predictable set of effects that are presumed to be more or less the same everywhere (Bingham, Holloway, and Valentine 2001). Technologically determinist accounts are commonly apocalyptic, in that they usually draw on metaphors of inevitable change in which people are deemed to be under threat from techno-“shocks” or “waves” (Bingham 1996; Thrift 1996). They also ignore the way that the impact of any technology varies according to specificities of time and place, who is using it and their intentions, and the other agendas to which technology may become attached (Thrift 1996; Bingham, Holloway and Valentine 2001). This is what Bryson and de Castell (1994, 206) term an “artifactual” view, in which technology is severed from the normative context of social practice. Bromley (1997, 54) explains that in such accounts, “Technology is presented as an autonomous juggernaut, with each new development an inevitable result of what has come before, regardless of what the people designing, promoting, purchasing or using the technology may have in mind.”

Despite such criticism, technological determinism is still popularly employed to explain material-social change (Winston 1995; Thrift 1996) and is particularly evident in theorizations of cybertechnologies (Bingham 1996). Yet Bromley (1997) also warns against the danger of taking the opposite stance: viewing technology as a “neutral tool” whose impact is entirely determined by the intentions of its users. Authors who take this approach commonly fall into the trap of assuming that the meanings of technology are stable and unproblematic. This is because they fail to recognize the interpretive processes inherent in all of the practices through which we become socially acquainted with technologies, from their design onwards (Bingham 1996; Thrift 1996). In other words, they substitute for a *technological* determinism a *social* determinism, in which the assumption is that only people have the status of actors (Akrich 1992).

Wajcman (1991) labels these two positions “use/

abuse” and “social shaping” models. Both are based on setting up false oppositions between technology and society in which either strong technology impacts on weak society or strong society shapes weak technology (Bingham 1996). As such, they ignore the mutual implication and complication of bodies and objects.

Scholars from the social studies of technology, such as Bruno Latour (1993) and John Law (1994), offer an alternative approach. These writers argue that we are inextricably entwined with our material surroundings, to the point that we need to recast the social to include nonhumans. Callon and Latour (1981) point out that our use of objects is one of the things that differentiates us from animals such as baboons: whereas baboons form associations and order their social worlds only through actions between one body and another, we as humans use a range of objects or “props” to mobilize, stabilize, and order our society. Callon and Law (1995, 484) demonstrate this point with what they call a thought experiment. Referring to the example of an imaginary office manager called Andrew, they write:

[J]ust imagine what would happen if they took away Andrew's telephone and his fax machine. If they blocked the flow of papers and reports. Imagine what would happen if they shut down the railway line to London and stopped him from using his car . . . Then imagine, also, that his secretary were to disappear. And his room, with its conference table, its PC and electronic mail were to vanish.

In other words, the world cannot be unproblematically divided up into “things” (on the one hand) and “the social” (on the other) (Bingham 1996). Rather, in order to understand human activity and society we need “to take full account of those crowds of nonhumans mingled with humans” (Latour 1988, 16).

For these advocates of what has become known as Actor Network Theory (ANT), society is produced in and through patterned networks of heterogeneous materials in which the properties of humans and nonhumans are not self-evident but rather emerge in practice. In other words, the social and the technical always codevelop. As Thrift (1996, 1485) explains, “the actors in these actor networks redefine each other *in action* in ways which mean that there are no simple one-to-one relationships from technology to people but rather a constantly ongoing, constantly inventive and constantly reciprocal process of social acquaintance and reacquaintance.”

Our study of children's use of the Internet is informed by these ideas. We do not view computers as things “with pregiven attributes frozen in time” (Star and Ruhleder 1996, 112), or as objects that affect social relations in fixed ways, producing a predictable set of effects. Rather

we understand them to be “things” that materialize for children as diverse social practices and that may vary as much as the contexts in which they are used (Bingham, Holloway, and Valentine 2001). Notably, we recognize that computers may play different roles within children's different communities of practice and so emerge as very different tools, depending on the way different communities of practice make use of them. Here we draw on Eckert, Goldman, and Wenger's (1996, 4–5) definition of communities of practice. They write:

[U]nited by a common enterprise, people come to develop and share ways of doing things, ways of talking, beliefs, values—in short, practices—as a function of their joint involvement in mutual activity. Social relations form around the activities, the activities form around relationships, and particular kinds of knowledge and expertise become parts of individuals' identities and places in the community.

The findings presented in this article are based on material collected as part of a two-year study of children's use of ICT at school and home. While this article focuses specifically on how children use, encounter, and interpret on-line spaces within the context of their off-line worlds, other papers emerging from this work have addressed discourses about children and technology (Bingham, Holloway, and Valentine 1999a; Valentine, Holloway, and Bingham 2000), schools' visions of technology (Valentine and Holloway 1999), the role of schools' highly gendered cultures in shaping distinct cultures of computing within these institutions (Holloway, Valentine, and Bingham 2000), ICT and social exclusion (Valentine, Holloway, and Bingham 2002), children's negotiations of technological competence at home and at school (Holloway and Valentine 2001), parental fears about children's safety on-line (Valentine and Holloway 2001a), how children's ICT usage is shaped within and reshapes the home environment (Holloway and Valentine 2001a), the way that on-line interactions may be used to endorse or contest the way children imagine other nations (Holloway and Valentine 2000b), the Americanization of the Internet (Holloway and Valentine 2001b), technophobia (Valentine and Holloway 2001b), and the particular relevance of ICT to rural areas (Valentine and Holloway 2001c). We have also used examples from this work to explore how different ways of thinking about spatiality might contribute to the new social studies of childhood (Holloway and Valentine 2000c).

The first stage of the research was based in three secondary schools. Two of the schools, Highfields and Station Road, are located in a major urban area in Yorkshire; the third, Westport, is in an isolated small rural town in

Cornwall.¹ Highfields is a mixed comprehensive school for pupils aged 11–18 located on the residential edge of a major city. The area is dominated by private housing and is relatively advantaged, with unemployment being well below local and national averages. The ethnic background of the pupils is mainly “white,” though at seven percent, British Pakistanis form a significant minority of the school population. The school has benefited from some investment since its designation as a technology school, and exam results compare favorably with the national average. Station Road is a mixed comprehensive for pupils aged 11–16 located in a much less well-off part of the same city, where the percentage of children eligible for school meals is higher than the national average. The school has a much greater percentage of pupils scoring below the national average on examinations; however, given their catchment population, in which eight percent of the children are from homes where English is not the first language, authorities see the school as performing relatively well. Westport is a mixed comprehensive school for pupils aged 11–18, and is located in one of the most isolated rural coastal towns in the U.K. The school serves a large, mainly rural catchment area, with some pupils traveling considerable distances to attend. While there is variation in the pupils' socioeconomic backgrounds, the catchment area as a whole is less disadvantaged than the national average. The number of children with statements of Special Educational Needs is relatively high, though exam results for the school as a whole are close to the national average.

Within the case-study schools we undertook a questionnaire survey of 753 children aged 11–16 asking about their use of computers and the Internet in both school and home environments. This was followed by observation work in a number of case-study classes and focus-group discussions—based mainly on existing friendship groups—that covered children's experiences of information technology (IT) within the school environment. Semistructured interviews with the IT and head teachers from these schools were also carried out.²

On the basis of this stage of data collection, forty children and their families were asked to participate in a further stage of the research. This involved separate in-depth interviews with the parent(s) and the children in the household about the purchase of home PCs and Internet connections, the use of computers and the Internet by different household members, different competence levels, issues of unity or conflict around shared use, ownership, location, and control of domestic the PC, and whether being on-line had affected household relations.

Our research was informed by understandings from the sociological study of childhood and from children's

geographies (see, for example, Qvortrup et al. 1994; James, Jenks, and Prout 1998; Holloway and Valentine 2000a). This research regards young people as competent actors who are agents in their own lives (James and Prout 1990; Mayall 1994). Thus, in the course of conducting fieldwork we sought to engage directly with the children and to treat them as independent actors, listening to their accounts of their own lives rather than just relying on the accounts of adult proxies such as teachers and parents. In doing so, our research relationships were also guided by sociological codes of ethics that have attempted to identify ways that as academics we might work *with* rather than on or for children (Alderson 1995). This approach is discussed in more detail in Valentine (1999a).

Our findings are structured into two sections. The first examines children's configurations of self in an on-line world. Here we explore the ability of ICT to enable children to reconfigure their identities and the contextuality of their social lives by establishing new kinds of interaction and relationships that are not bounded by the bodies and local spaces they inhabit. At the same time, we also explore how children's off-line identities and worlds are incorporated into the on-line geographies they create. In the second section, we explore the flip side of the relationship between children's on and off-line worlds by examining what off-line identities and spatialities are produced through the incorporation of the “virtual” into children's “real” worlds. Our conclusion emphasizes the mutual constitution of children's on-line and off-line environments and the role that the objects that make up our material surroundings—such as Internet-connected PCs—play in children's social lives.

ICT and Children's Configuration of Self in an On-line World

Janelle (1973) uses the concept of extensibility to measure the extent to which people or groups use transportation or communication to overcome the tyranny of distance. For example, forms of mass communication permeate boundaries between different spatial contexts, enabling people to extend themselves in space and time by finding information about or contacting people who are spatially distant from themselves. While media such as television, radio, the telephone, and the Internet all offer a window on the wider world, television and radio are one-to-many forms of broadcasting, and the telephone is usually only a one-to-one form of communication. In contrast, ICTs permit many-to-many forms of exchange. As such, these technologies do not just trans-

mit information between people and places; rather, as Thompson (1995, 4) claims, they actually involve “the creation of new forms of action and interaction in the social world, new kinds of social relationships and new ways of relating to others and oneself.”

A number of writers—most famously Rheingold (1994)—have suggested that ICTs allow users to develop social networks that span the globe—sometimes dubbed “virtual communities.” The ease and speed of these transnational connections is being credited with broadening the horizons of those on-line, producing a rescaling of politics. Supporters of the Zapatistas in Mexico provide one example of those who have used the Internet to mobilize international support for a local struggle (Froehling 1999).

Several of the children we interviewed have established national and international on-line connections and have begun to rescale their social networks. These friendships are credited with many of the characteristics usually associated with close or strong face-to-face ties: they are frequent, companionable, voluntary, and reciprocal, and they offer support for social and emotional needs. Their placelessness is even considered an advantage because, while geographical mobility can threaten or destroy face-to-face friendships, on-line relationships can always be maintained (Wellman and Gulia 1996).

Some of the pupils we interviewed stressed the advantages of on-line friendships. For Francesca, a pupil in year 12³ at Highfields, her on-line relationships (which include regular and close contacts as well as fleeting exchanges) are qualitatively different from her off-line friendships. First, she claims, they are predicated on genuine shared interests rather than on the accident of geographical proximity or the coincidence of age and gender. Second, in contrast to the close-knit and consequently incestuous nature of Francesca’s local face-to-face friendships, her on-line relationships are more particular (some are also very transient), and as such they are more discrete than her off-line relationships because the information she shares with people on-line is socially and spatially distanced from her off-line everyday life. In other words, Francesca’s on-line world effectively constitutes a “private” space, a space of separation or escape from the intensity and gossipy nature of her locally based relationships. She explains:

FRANCESCA: . . . I mean people [on-line] tend to go straight for the jugular you know, they talk about all this deep stuff [e.g., music, philosophical theory] on there which you don’t chat about every day over a cup of tea or whatever. Yeah, so I mean a lot of my [off-line] friends, they’re not interested in exactly the same stuff as I am, so

I can go there [Internet] and just find someone who is and have a chat about it and stuff. [Edit] . . . people listen to you more. I’m not saying it’s [ICT] a replacement [for face-to-face friends] or anything but it’s quite good to be able to go on and do that. [Edit . . . later she continued on this theme] . . . I don’t know like, my [off-line] friends are all my own age whereas the people I write to [on e-mail and in chatrooms] tend to be older and, I don’t know, it’s definitely a different thing, the kind of things you talk about and stuff. I mean, it’s kind of good to have someone that’s not that close [in the sense of physical proximity] and you can tell them something, you know it doesn’t mean anything to them, it’s just what you’ve written, whereas you know if you discuss kind of personal stuff with other people [i.e., local face-to-face friends] it gets out of hand and it gets round.

The disembodied and asynchronistic nature of on-line interactions also offers people the opportunity to position themselves in new ways. Thu Nguyen and Alexander (1996) suggest that this is particularly appealing to young people because in the adultist world of off-line space they are commonly treated as less knowledgeable, less serious, and less competent than are adults. Teenagers, in particular, are often self-conscious about what other people think of them and about how their bodily identities are read. According to some of our interviewees, ICT gives children more control over their identities than do spontaneous face-to-face encounters because they have time to think about what they want to say and how they want to represent themselves. It is also less embarrassing to have personal conversations in disembodied spaces, because no one can see you if you blush. In an echo of Francesca’s argument that on-line encounters take place in a space of separation from the off-line world, Clive, Helen, and Helen’s sister Rachel (all Highfields pupils) explain that they find it easier to take risks with their self-presentation on-line because of the anonymity and privacy afforded by ICT (“no one knows who you *really* are,” “you are not *really* seeing them,” “they can’t really judge you . . . ’cos they don’t *really* know you”) including the fact that it is easier to disconnect from uncomfortable disembodied on-line encounters than it is from those that take place face-to-face, off-line.

CLIVE: . . . because you don’t sort of have to introduce yourself [to people in on-line spaces], you, you’re not really shy cos [because] people can’t see you and you just talk to them anon, anonymously, so yeah I think it makes it a bit easier.

INTERVIEWER: Yeah, yeah, you haven’t got those same barriers.

CLIVE: Um. You just go on and start talking. Anyone whom listens might reply but if they don’t it’s not that embar-

rassing, cos no one can see you. No one can be there to laugh at you if you say something really stupid. So you can just disconnect and sulk away without anyone seeing you. It makes it a bit easier and less embarrassing.

HELEN: . . . often when you meet new people you're really sort of, you're nervous and you, you don't really know what to say. But you can, when, when you're on the 'net you don't have to say oh, you, you can be somebody who you're not really and you can be all outgoing and everything because you're not really seeing them. Like sometimes when you look at people in the face and you've never met them before then you're quite and you're sort of [laughs] . . .

RACHEL: Yeah.

HELEN: No one knows really what to say but if it's somebody, if it's just a computer then it's not gonna talk really.

RACHEL: Yeah.

HELEN: . . . you're never gonna see the face unless you decide to meet them or something and then you probably feel you know 'em cos you've been talking to them for days and days.

RACHEL: Yeah. But like whatever you say, they don't, they can't really judge you on it 'cos they don't really know you so it's really good.

Indeed, ICT also affords more radical opportunities for individuals to position themselves differently in on-line space than off-line space. By allowing users to conceal their bodily identities, such technologies open up liquid and multiple associations between people and create spaces of concealment and masquerade (Benedikt 1991; Plant 1993). Notably, the disembodied nature of ICT affords on-line participants the chance to construct multiple alternative identities that can be played with and then abandoned (Robins 1995).⁴ Turkle (1995, 177–209) dubs this tendency of cyberenthusiasts to alternate between different and sometimes simultaneous identities as “cycling through.” The cyberliterature includes several examples of men pretending to be women, the able-bodied disabled, and vice versa (Stone 1991; Bechar-Israeli 1995; Slouka 1996). Not surprisingly, playing with identity is also promoted as a fun thing to do. Springer (1991, 306) has described the “thrill of escap[ing] from the confines of the body,” while Plant (1993, 16) claims that the “off-the-shelf identity is an exciting new adventure.”

The possibilities and pleasures of disembodied communication were shared by some of the children interviewed. Clive has used Internet relay chat (IRC) to talk to strangers. He has never played with his identity, but he understands why others might choose to do so and enjoys the thrill of not knowing to whom he is talking.

CLIVE: . . . You can be someone totally different because no one knows who you are, or what you're like. You can

sort of be your, your ideal person. And no one will say, “oh stop messing around, stop pretending to be who you're not.” You can do what you want really.

INTERVIEWER: And how do you feel about that? Having a conversation with somebody that you can't see?

CLIVE: I don't know it's, it's quite interesting, exciting cos it could be anyone, you just don't know who you're talking to, which is quite good I suppose. You don't, you don't get any images of what they could be like really. You don't think, “Oh I'm not talking to them cos they're ten or they're sixty, can't talk to them or whatever.” . . . [Later he returns to the same theme] Well sometimes I suppose you just get images of people [in off-line space]. You see someone with stereotypical punk hair cut and face piercings all over and you think you wouldn't want to talk to them. Cos just the image, so on the Internet it's totally anonymous so I suppose that's good for people who do look [different] and are perfectly friendly. They can talk to people and no one knows what they look like. No judging or judgment of what they are.

Steve, a year 10 pupil from Westport, reiterates Clive's point about the anonymity of virtual encounters. He is self-conscious about his body and so takes the opportunity to meet girls on-line, safe in the knowledge that they will not prejudge him on the basis of his physical appearance.

STEVE: I think it's quite fun because you can meet new friends and all that.

INTERVIEWER: Have you met any new people at all on that [chat rooms]?

STEVE: Yeah, I've met quite a few. Met a few girls as well [edit].

INTERVIEWER: You say you were talking to a couple of girls you know on there. Is it easier to talk to girls on the chat line?

STEVE: Yeah.

INTERVIEWER: Have you got many friends [on-line] who are girls?

STEVE: Yeah because one girl, if a girl comes up to you and they think you're ugly they just carry on walking so if you speak to them on the Internet they don't know what you look like so they just carry on talking to you which makes it easier.

Taken at face value, the quotes employed so far from Francesca, Clive, Helen, Rachel, and Steve all seem to suggest that there is a clear divide between children's off- and on-line spaces, in which the “virtual” is conceptualized as a space of separation, an escape from the social and bodily constraints of the “real” world. However, while young people may position themselves differently in on-line spaces from how they represent themselves in off-line spaces, the alternative (often banal) on-line identities they construct are still usually situated and

contingent upon their off-line identities and everyday peer group social relations. As such, their “virtual” activities and “real” lives are mutually constituted.

This is evident in a number of ways. First, the sites some children choose to go to and the nicknames they give themselves on-line are a product of their off-line lives. For example, Myers (1987) describes how a user chose the “Professor” as a nickname because it was his favorite comic-book character. Likewise, Francesca describes below how her on-line personas reflect her off-line interests and bodily identity.

INTERVIEWER: So do you create an identity for yourself?
How do you sort of represent yourself when you go on-line?

FRANCESCA: I just have a couple of handles that I use from books that I’ve read that I like, people’s names and stuff. I think it’s kind of fun, but I don’t have an alter ego or anything, you know, I just go on there and talk about stuff that I’m, I, me actually I’m interested in. I know you get people on there who pretend they’re models or whatever but I don’t really see it like that.

Second, as the quote from Steve above hints, on-line identities are constructed within the off-line context of the heterosexual economy of the classroom (Holloway, Valentine, and Bingham 2000). As a growing literature within critical education, sociology, and children’s geographies (Haywood and Mac An Ghail 1995; Epstein 1997; Holland et al. 1998; Hyams 2000) demonstrates, heterosexuality is important in a whole repertoire of pupil-pupil and pupil-teacher off-line interactions, including name-calling, flirting, sexual harassment, homophobic abuse, playground conversation, graffiti, dress codes, and so on. Through these relationships, both young men and women are under pressure to construct their material bodies into particular models of heterosexual desirability. These pressures are equally evident on-line. For example, Turkle (1995) argues that from age ten upwards on-line sexuality—including everything from flirting to virtual sex—is an important part of children’s use of Internet-connected PCs. On-line, symbols (known as emoticons) and text are employed to describe touch and bodily gestures and to enable participants to develop a sense of each others’ bodies. In this way, on-line words can pierce off-line bodies, causing feelings of desire, hurt, anger, and so on (Argyle and Shields 1996).

Not surprisingly, therefore, our study shows that the body is still centrally at stake in the production of children’s on-line identities. Despite the fact that ICT is disembodied—or perhaps *because* it is—bodies appear to make up the basis of much of children’s on-line conversation. Gender and age, in particular, are used to get a “fix” on other participants, while alternative on-line

identities are commonly constructed in what is imagined to be a heterosexually desirable way. When children take on other personas, it is invariably to adopt what they regard as more desirable or powerful identities than their own—which for both girls and boys means retaining their gender identity but representing themselves as older and very heterosexually desirable. Usually these are stereotypical or highly stylized identities based on famous models or sporting heroes. Andy, a pupil at Westport, describes how he has adopted the persona of a bouncer—a stereotypical construction of a hegemonic masculinity predicated on size and strength—in order to flirt with a girl in a chat room:

INTERVIEWER: Do you, when you do that [go to the Teen Chat Room] do you, er, how, how do you kind of represent yourself on screen? You just give yourself a nickname or something like that, is that how it works?

ANDY: Well, you just give yourself a name, just make something up and then just describe yourself or whatever.

INTERVIEWER: And so you can just pretend to be somebody else?

ANDY: Yeah.

INTERVIEWER: Do, have you done that, have you pretended to be?

ANDY: Yeah.

INTERVIEWER: What have you done?

ANDY: I posed to be a bouncer [laughs].

INTERVIEWER: A bouncer?

ANDY: Yeah.

INTERVIEWER: Why was that?

ANDY: Oh, I don’t know. It was just that I was in this room, the Teen Chat one, and there was this, there’s girls on it, so, so I pretended to be a bouncer of 22.

Place is also used in conversations by children on-line to shape others’ understandings of their bodily identities and to help them “pass” as adults. Steve from Westport describes below how he enjoys talking on-line about going to the pub, a space to which children have restricted access in the U.K. and where they are banned from drinking alcohol. Likewise, Paul, a pupil at Station Road, explains that by claiming to come from London—which in his eyes is a more exciting place than his home town—he can make himself sound more interesting and exotic.

STEVE: Oh me and a friend acted we were 17 years old.

INTERVIEWER: 17?

STEVE: Yeah and it was like we was drunk and we kept writing different things, like strange things.

INTERVIEWER: You were drunk or were pretending to be drunk?

STEVE: Pretending . . . [edit].

INTERVIEWER: Why was it, why did you enjoy pretending to be older than you are?

STEVE: Because you can write about all different things

and just normal games. You can write about sort of like going to the pub and all that.

INTERVIEWER: So have you ever been tempted to create another identity for yourself?

PAUL: I don't know it depends . . . if you see there's someone who's er say 18 and they live in a really exotic place then er, you'll think oh, well I can hardly say I'm from here, so you'll say, you'll say somewhere. If . . . you say about London then you've got more of a talking point. London's the capital city er, so we, you've got things like saying oh, all the big shops, go to Harrods and er, everything like that so—I don't know you can, you can normally tend er, pick a city if you know a bit about it then—er, the only problem is if they say that they also live there [laughs].

Yet while some children enjoy playing with their identities in this way, the majority are wary of trying to “pass” as someone else because they implicitly recognize the extent to which their on-line identities are constituted through their “real” identities. Texts can leave some traces of the author's embodied identity. Digital bodies are not just produced through literal representations of the physical body, such as descriptions, signatures, or choice of username, but also through discursive positionings, such as the choice of conversation topic or the use of language (Yates 1997; Delph-Januirek 1999). Steve, his brother, and two friends use their awareness of this to form the basis of a game. In an on-line version of hide-and-seek they each adopt different personas in chat rooms and then try to identify each other.

Writing about a man discovered to be posing as a disabled woman on the Internet (reported in Stone 1991 and van Gelder [1985] 1996), Whitley (1997) argues that the man's off-line identity was uncovered through a growing sense of unease among “her” on-line friends that the account of “her” life did not ring true. Echoing Turkle's (1995, 212) comment that for a man “to pass as a woman for any length of time requires understanding how gender inflects speech, manner, the interpretation of experience. Women attempting to pass as men face the same challenge,” Whitley (1997) argues that “her” gender identity is only something that could develop through experience. This is something Paul recognizes, as he explains below why he would not try to pass as female on-line. Paul's reluctance to play with his gender identity also reflects the low regard in which he holds the girls within his class, although his disdain was reciprocated by many of the girls, who regard boys of their own age as immature (see Holloway, Valentine, and Bingham 2000; Valentine, Holloway, and Bingham 2002).

INTERVIEWER: What about your age or your sex—would you pretend to be a girl?

PAUL: No [laughs]. No I couldn't pretend to be a girl 'cos I'd . . .

INTERVIEWER: Talk about fashion [laughter; interviewer referring back to a previous comment he had made about girls' preoccupation with fashion].

PAUL: No, I wouldn't know what to talk about because half the girls talk about rubbish anyway . . .

Aspects of the “real” world are also incorporated into virtual worlds through the way off-line social relations of class and gender are reproduced in on-line spaces. While the disembodied nature of on-line contact is often promoted as equating to a situation from which power and inequality have been removed (Herring 1993; Yates 1997, 282), our research suggests that this is a naive representation. First, access to a PC is still a material privilege (Valentine, Holloway, and Bingham 2002). According to our survey data, the proportion of children who have used a computer at home varies considerably. Between our three case-study schools, the percent ranges from 73 percent for Highfields, which has a predominantly “middle-class” catchment area, to 61 percent for Westport, which is socially mixed, and falling to 55 percent for Station Road, which has a largely “working-class” catchment area. As Gunkel and Gunkel (1997, 131) argue,

[C]yberspatial researchers who forecast and celebrate a utopian community that is “raceless, genderless, and classless” do so at the expense of those others who are always already excluded from participating in this magnificent technology precisely because of their gender, race, and class. Far from resolving the crises of the multicultural society, cyberspace could perpetuate and reinforce current systems of domination.

Second, disembodiment does not eliminate the basis for discrimination and exclusion. Many of the practices and structures (organization and regulation of space, time, and movement) that shape off-line lives also shape on-line interactions (Kitchin 1998a, b). While women have a significant input in cyberspace and a strong feminist and lesbian culture exists on-line, Herring (1993) suggests that cyberspace is still the domain of white males: women's messages are shorter and gain fewer replies than those of men, and women are subject to on-line abuse, harassment, and even rape. The gendered nature of ICT was notably evident among the children interviewed. In our interviews, only boys talked about how they enjoyed “flaming,” “dissing,” and “nuking” other participants on-line, activities that—as the quote below suggests—were also underlain by racism. Consider this exchange between the interviewer and Sam and Carl, two boys from Highfields:

SAM: I go on quite a lot of chat lines [sic] actually.

TERRY: Yeah I go on chat.

INTERVIEWER: Chatrooms, all right?

CARL: Cos they're really funny you can just type in and you can just take the—

INTERVIEWER: Oh yeah.

SAM: Can just dis [insult] people all the time and they don't, they're not even [talking over each other].

INTERVIEWER: Hang on one at, one at once, I can't hear, sorry, you go first.

CARL: They go, you go on this thing and there's like a group, there's a room with all these people.

INTERVIEWER: Right.

TERRY: And the, there's one of them and say if they've got a stupid name like Go. I remember one was called Gonzallas.

SAM: This was at my house.

CARL: And you got like type in what kind of stupid name is Gonzallas and start, start dissing each other and it's quite, it's really very entertaining [they then go on to describe being thrown out of chatrooms for swearing].

Or consider these comments from Clive, another Highfields pupil:

CLIVE: . . . Other things and there's some bad things about it, the program called nukes. Which if you find out that, that, string of numbers, the IP address. Say with banning people, if you feed that into a program it will send a message to their computer and actually crash their computer remotely.

INTERVIEWER: Oh that sounds . . . [Clive speaks over].

CLIVE: If, if there's someone yeah, if there's someone who's been really vicious on there. Someone you don't like and, you can do that to them, which is—

INTERVIEWER: Nuke them.

CLIVE: Quite funny, yes and it will just say "blah, blah, blah," their nickname has disconnected. But everyone else will think that they've just turned it off. Turned the computer off or turned the program off, IRC program. But you know you've just crashed the computer [laughs].

Only girls referred to experiences of harassment or their fears about the strangers they might meet on-line. In this sense, off-line fears about young women's personal safety are also incorporated into virtual space. For the girls, on-line relationships involve trust and fear, pleasure, and ambivalence. While they are conscious of the risks of connectivity—that ICT provides a gateway for dangerous strangers or harassers to potentially invade the space of the home—most are also confident that they can manage their relationships on-line and avoid off-line encounters:

FRANCESCA: Yeah it's worse [than going into an off-line bar or pub], it's worse cos people just go for it. I mean that's what they've gone on there for, some people you know, the kind of people who go on porno pages and

stuff, sometimes they think oh well I'll go in the chat room and see if I can pick someone up and they, they'll like come onto you and stuff and say a load of rubbish. But I mean, normally if you tell them to go away they do and then that's it.

Or consider the comments of these three young women from Highfields:

VRON: It is a bit yeah.

LOIS: Especially when you don't really like know 'em but yeah.

HATTY: Cos men rely on it don't they?

VRON: Yeah.

HATTY: You think you're talking to a 16-year-old and it's not, it's like a dirty old man or something like that [Edit of a complicated discussion about a friend who met a boyfriend on the Internet].

INTERVIEWER: Yeah but you've not done anything like that? Would you want to? Do you think it's a good idea or do you think it's stupid?

VRON: I think it's stupid.

LOIS: Yeah [laughs].

HATTY: I mean you don't know who you could be talking to, you could be talking to a rapist or anything like that and you wouldn't know and if you met him then you would be putting yourself at risk. It's all right to talk to him on the thingy [the Internet] and on the phone.

LOIS: Just don't tell him anything personal.

VRON: Yeah.

LOIS: Don't tell him the address or anything like that.

Finally, children's "real" and "virtual" worlds are connected by the material realities of the technology and the economic and temporal realities of everyday life, both of which constrain the nature and length of children's on-line activities. Several children reported technical difficulties on-line. Others described how their parents restrict their access to the Internet at home because it is expensive to use (U.K. local calls are not free) or limit their use to particular times that fit in with school and domestic routines. Off-line time differences also hamper children's ability to communicate with people in other countries or to find again those whom they have met on-line. In other words, despite utopian discourses about disembodiment that promote virtual spaces as spaces of freedom and liberation, these still have to be accessed from bodies located in off-line worlds, with all the constraints this involves. Alistair, a pupil from Station Road, and Colin from Westport see it this way:

INTERVIEWER: And do you talk to the same people regularly?

ALISTAIR: Yeah a bit. Apart from the time difference is a bit of a pain at times, cos like I go on sometimes and it's like say seven o'clock here and it's like three in the

morning there so its a bit of a problem [edit]. It's just whenever we go on because with all the different time zones you may say like this time and like people say half of the people will say like "what time zone is that?" And then I'll say like "BST" or whatever and somebody'll go "what's BST [British summer time]" and it just ends up being confusing so people just go on whenever.

COLIN: It's [use of the Internet] fairly controlled cos it is quite expensive still to use the Internet other than on a Sunday when it only costs a penny a minute. But if you're on there for like two or three hours at a time, which I usually am sometimes for three hours off, you know it adds up . . . Dad's paying the bill, so you know, he gets a bit restricting on it, like usually only three times a week [he is allowed to go on-line] something like that.

In this section, we have argued that the extensibility afforded by ICT enables children to reconfigure their social relationships and identities in on-line spaces. Notably, the premises of virtuality and anonymity that often underpin adults' characterizations of ICT are valued by many children for producing on-line spaces as spaces of separation from their off-line worlds. At the same time, however, we have used a number of examples to show that despite the fact that some children think of on-line spaces in this way, their "virtual" activities are not completely disconnected from their off-line identities and relationships. Rather, our empirical data shows that children's off-line worlds are incorporated into their on-line worlds in four ways. First, some children's on-line identities are direct (re)presentations of their off-line identities and activities. Second, even when children construct alternative identities on-line, these are often situated or contingent upon their off-line identities and peer group cultures, in that they are constructed to enhance their off-line identities or to compensate for perceived off-line inadequacies. Third, children's on-line worlds reproduce off-line class and gender relations. Finally, the limitations of the technology children use and the economic and temporal realities of their everyday lives affect the nature and extent of their on-line activities.

In the next section we consider the opposite scenario, focusing on how children's virtual activities are incorporated into their "real" geographies.

ICT and Children's Configuration of Social Relationships in the Off-line World

Early academic and popular commentaries on ICT suggested that face-to-face relations might be eroded by on-line simulations, with personal appearances becoming precious and rare (see, for example, McLaughlin, Osborne, and Smith 1995). These anxieties replicated

panics about previous "new" technologies such as the telephone, once seen as an exotic depersonalizing form of contact and now regarded as important for sustaining face-to-face relations and get-togethers (Fischer 1994). For example, McCellan (1994; cited in Kitchin 1998a, 90) claimed that "rather than providing a replacement for the crumbling public realm, virtual communities are actually contributing to its decline. They're another thing keeping people indoors and off the streets. Just as TV produces couch potatoes, so on-line culture creates mouse potatoes, people who hide from real life and spend their whole life goofing off in cyberspace." Other commentators have represented on-line users as socially isolated and lonely (Kroker and Weinstein 1994).

Evidence from our study, however, indicates that on-line activities do not harm off-line friendships and relationships. Rather, they are incorporated into children's "real" social worlds in a number of different ways. Some children use ICT as an everyday way of maintaining off-line distant family relationships and friendships. This incorporation of the virtual into the "real" is particularly evident in Westport, a rural school (Valentine and Holloway 2001). Given the context of Westport's spatial isolation, e-mail provides a cheap, quick, and informal means of binding dislocated families together, as Louise and Jason explain:

LOUISE: I e-mail my Dad a lot cos he's in Kettering at the moment but he's just moved house, he normally lives in Warwickshire so I haven't got his new phone number yet.

INTERVIEWER: But you do know his . . .

LOUISE: His e-mail address.

INTERVIEWER: So that's at work?

LOUISE: Yeah. But he really likes getting e-mails at work, he thinks it's really funny.

JASON: Say I'm, when I'm writing [an e-mail] to my brother in Brighton, cos I don't really talk to him and see him that much, cos he doesn't come down [to Westport] I send him quite long ones [e-mails].

The same can be true of friendships. Through participating in on-line chatrooms, Teresa, another Westport pupil, encountered an off-line friend whom she had lost contact with in the "real" world and so was able to re-establish their friendship:

TERESA: . . . Me and Jason, we were, when we first moved up to Westport [from their primary school], a lot of me and my very closest friends, we'd drifted apart very much and that really upset all of us. But I was just on the Internet chatting and then "Mad" [an on-line nickname] came up, and I thought wait a minute this could be another "Mad" or it could be Jason [one of the friends she had lost contact with]. And I said "where do you live?" And he said "Westport" and I went "Jason?" and

he goes “Teresa!” [edit] . . . and now I’m always with Jason [off-line].

Other Westport children incorporate ICT into their off-line lives in more banal ways. The children at Westport school are drawn from a wide rural catchment area. As a consequence, ICTs are important for maintaining their everyday friendships out of school hours. E-mail is an effective substitute for the telephone to arrange games of football or meetings between spatially disparate local friends. At the school itself, where every child has an on-line address, many use e-mail to contact friends in other classrooms, both during breaks and in the middle of lessons. Some of the girls even advocated e-mail as a particularly effective way of telling boys to whom they are attracted how they feel about them, emotions they find difficult to express face to face (Valentine and Holloway 2001).

One of the children’s most popular on-line activities is browsing the Web for information about off-line hobbies and interests and to find out about fashion and goods that are not available in local shops. Often this knowledge is then incorporated into children’s off-line activities, as Peter from Westport describes below.

PETER: Yeah well I’m designing a kite at the moment so then I went to find out about materials and what helps to advertise them and that, so I’ve just seen the way that everybody else advertises their kites and stuff just to help me on my design and to print out like information, like the history of kites and stuff.

Other children talk on-line about their off-line hobbies, and in doing so make on-line friends who share their interests. Alan, who is an avid surfer, has befriended an American surfer with whom he exchanges techniques and product tips. He has also e-mailed professional surfers for advice. In such ways, information and ideas gathered on-line can become incorporated into off-line peer-group social networks and relationships, thus contributing to the production of globalized local cultures (Massey and Jess 1995).

Face-to-face meetings have emerged for some children as important ways of cementing on-line friendships, as Francesca describes below. Indeed, children are often anxious to authenticate those they meet on-line or are concerned that others will want to check that their off-line identities correspond with their on-line descriptions. After all, as Tapscott (1998, 77) argues, “[A]uthentication leads to trust.” Thus, rather than necessarily creating spaces away from daily embodied existence, “virtual” activities can be incorporated in “the real” in ways which enhance and develop children’s everyday lives and social networks.

FRANCESCA: I’ve made like quite a few good friends from e-mailing like um, I used to play the drums and when I started I looked up some drumming web pages and there was this one by this boy who, who lived in the U.K., so I thought oh I’ll write to him, cos he said on his page you know if you wanna write. So I ended up writing to him quite a long time I actually went down to meet him. [Through him she was introduced to one of his friends whom she dated.]

Surfing the Internet or entering chat rooms are popular pastimes for children to do together at home (some children also use it with their parents) and particularly at school, as Paul explains below. Thus, although ICTs are often represented as offering privacy because on-line participants can remain anonymous, and as socially isolated activities because users are usually imagined to be logged on alone (Wynn and Katz 1998), for children such as Paul, ICTs emerge as a tool that brings friends together. At such moments, the spaces on and around the screen become shared or “public” spaces.

INTERVIEWER: Right so you tend to chat [on-line] more at school than at home?

PAUL: Yeah. Yeah, because erm if you can’t think of anything you ask one of your friends er what to say—there’s normally someone who can think of something. Chat to them, you can chat to your friends across the other side of the room—that’s always a good one.

INTERVIEWER: So you chat to people around you about what to chat about on the ‘net?

PAUL: Yeah, if, if you see someone at school who’s chatting then erm, you just sort of peer over and see what room they’re in, go on it and put in your name and start putting er, er well, one of my friends did it to someone—they put in they were 17, blond, six foot two, blue eyes and so on and he got them talking and you could see the person on the other side talking—ah come here, come here look I’ve pulled on the Internet [laughs] . . . you can use it like that—it’s good fun at school. Erm, there’s a—er not a lot of my friends have got it at home so I can’t well, it’s a bit expensive . . .

INTERVIEWER: So when you’re at school do you tend er, do you often sit round and do it together—pretend to be one person and two or three of you would be?

PAUL: Yeah. If, if someone finds—like erm, a girl called Rebecca who—er, she’s er just naturally chatty, and she found someone else chatting on the Internet, so we just all went round and watched cos she’s good at just typing it in and we watched the conversation and then the people all sort of adding bit in and so yeah if someone, if someone gets a good person who they’re talking with them, our form tends to crowd round there and watch that cos the conversation’s normally quite interesting . . .

In contrast, in the family home, the Internet-connected PC emerges for Paul as a very different tool. By claiming

that he needs to use it on his own for schoolwork, he can create "private" space and time for himself away from his mother, father, and brother.

Children not only go on-line together but also talk about their solo on-line activities with local off-line friends. In this way, the Internet-connected PC can emerge as a tool to make—and develop—local off-line relationships as well as those on-line (which may or may not be consummated face-to-face). For example, Todd and Karen, both students at Highfields, imagine using ICT to find out about people and places they consider to be "exotic." This is knowledge they believe could then be used as social capital in their everyday off-line encounters. In this way, contrary to popular fears, technology can be used to make the distant present, not the present distant.

TODD: Sort of, you could, you could use them as a sort of way of finding out stuff. Whereas if you're with your normal friends you probably, say you went from that to your normal friend, you'd say "Oh do you know what's happening in America?" . . . You know some amazing sort of fact or something [edit].

KAREN: You could learn more from 'em can't you cos it's different.

TODD: Yeah you could learn more from 'em.

INTERVIEWER: Right.

TODD: Cos say with, with your friends that you've got, that you can see [off-line friends], you're sort of, they know everything that you know, what's going on and everything.

INTERVIEWER: Right.

KAREN: It's different lines of conversation though, innit, what you'd like, with somebody from Iceland or somewhere, it would be like, oh fine from America, it would be like what, how, how they do things and like, and like the fashions and stuff. But here [at her school] it's, you just sort of talk about the same things every day cos, it's, I mean nothing changes. And if it does everyone knows about it.

While Karen and Todd imagine that talking about "virtual" activities might have a positive social outcome for them, this is not the case for some of their technoenthusiastic peers. ICT positions these children very differently, recontextualizing their off-line identities in negative ways. For example, boys who are technologically competent and interested in PCs generally have poor social standing within Highfields and Station Road schools. In popular culture, "techies" are commonly represented as being physically unattractive, wearing glasses, and having bad skin and poor fashion sense. In other words, their bodies are regarded as a product of their obsession with computers—of too much time spent staring at a screen (Lupton 1995). These stereotypes are reproduced in these girls' descriptions of the cyberenthu-

siasts in their class at Highfields, whom they label as "sad," "geeks," and "boffins" (Holloway, Valentine, and Bingham 2000):

HANNAH: Well they're not very good-looking.

JULIE: No.

LOTTY: Not good-looking and they don't care what they look like and they're immature.

Indeed, the girls' descriptions of the boys as "addicts" conjure up further images of technology, like drugs, invading and transforming the body. Not surprisingly, perhaps, Francesca is discrete at school about her interest in and use of ICT at home, fearful that if this knowledge became widespread her embodied identity might be recorded as undesirable.

FRANCESCA: You talk to people about going on a chat page and stuff and they go, that's really sad! But I mean it's not like I spend seven hours a week on it or anything you know, I haven't been on it for a while, and it's just a laugh. It's kind of hard to find different people to talk to in real life cos you just, you know, you don't walk up to someone and start talking to them about stuff.

INTERVIEWER: Do you think it has got that image amongst your friends or people at school that it's sort of not a cool thing to do?

FRANCESCA: Some of them yeah, I mean cos the people who tend to use it in my year I suppose at school, there's a lot of quite stereotypical geeky-type people who use it and you get lumped under that.

INTERVIEWER: Right, not the sort of thing you brag about, then?

FRANCESCA: . . . I wouldn't broadcast it, I suppose, stupid really, but you know people my age can be kind of cruel about stuff like that.

Francesca's account of how on-line activities are viewed at Highfields, where the Internet-connected PC is associated with academic use, contrasts strongly with those of children from Westport, where the Internet-connected PC is strongly associated with sociality and communication.⁵ In other words, the properties of ICT emerge differently for users in different sociospatial contexts and are valorized in different ways by different groups of children.

In this section, we have argued that children's virtual worlds are incorporated into their "real" worlds in four main ways. First, children use on-line activities to maintain, develop, and reconfigure both distant and local off-line relationships and friendship networks. Second, children use ICT to find information about their off-line hobbies and interests that they then incorporate into these activities. Third, children talk on-line about their off-line interests and in doing so make "virtual" friends who may then be incorporated into off-line social net-

works. Fourth, ICT can recontextualize children's off-line identities in positive or negative ways.

Conclusion

In this article, we have provided primary empirical material to show how young people use, interpret, and encounter on-line spaces within the context of their off-line everyday lives. Our findings demonstrate that the extensibility afforded by ICT enables children to reconfigure their social relationships and identities in on-line spaces. While some of the children represented ICT to us as a space of separation from their off-line worlds, their "virtual" activities are not, in practice, disconnected from their off-line identities and relationships. This article provides empirical evidence demonstrating that children's on-line and off-line worlds are not oppositional or unconnected but rather are mutually constituted. One cannot be understood without the other. Children's use of ICT is embedded in their lives. Their on-line identities, relationships, and spaces are no less "real" than those encountered off-line.

We have identified four different processes through which children's off-line worlds are incorporated into their on-line worlds: through direct (re)presentations of their off-line identities and activities; through the production of alternative identities contingent upon their off-line identities; through the reproduction on-line of off-line class and gender inequalities; and through the ways in which everyday material realities limit the scope of their on-line activities. Likewise, we have also identified four different processes through which children's on-line worlds are incorporated into their off-line worlds: on-line activities maintain and develop both distant and local off-line relationships; information gathered on-line is incorporated into off-line activities; on-line friendships are incorporated into or reconfigure off-line social networks; and on-line activities can position subjects differently, recontextualizing off-line identities.

As such, these connections can also implicitly reconfigure children's geographies. By enabling children to extend themselves beyond the bounds of their locality and the limitations of their own lack of personal mobility, ICTs allow children to glean knowledge from and about other parts of the world and to meet distant "others." The information and ideas gathered in this way can then be incorporated into their off-line peer group networks and relationships, thus contributing to the production of globalized local cultures (Massey and Jess 1995).

When ICTs are used in different times and places, they also constitute varying forms of "private" and "pub-

lic" space. As some of the quotations used in the first section of this article implied, on-line activities can constitute a "private" space. This is because "virtual" space can seem like a space of separation and therefore escape from everyday off-line social relations. The anonymity afforded by disembodied interactions can also offer on-line participants some measure of "privacy," in the confidential sense of this word.

On-line activities can also help to produce "private" space in the off-line world. Children commonly have little privacy from parents and siblings within the spatial constraints of the average family home. By claiming they need peace and quiet to use the PC for schoolwork (although often they are using it to play games, surf the Internet for fun, or e-mail friends), some children can appropriate a room at home for themselves. At school, children from Westport also use e-mail to create fleeting moments of "privacy" in which they can chat to friends when they are supposed to be working, and can have "private" intimate conversations with members of the opposite sex.

Likewise, on-line activities produce different forms of "public" space. "Spaces" such as chat rooms are "public" in the sense that they are generally open forums for the dissemination of information, ideas, and opinions that are frequented by strangers. In addition, their use can produce "public" spaces around the screen when children get together off-line to use ICT or to talk about their on-line activities.

Throughout this article, we have also shown that the Internet-connected PC does not have any inherent properties or universal impacts. Rather, it emerges as a very different tool for different groups of children in what we might call (after Wenger 1998) "communities of practice." For example, for some children it emerges as a tool to develop intimate on-line friendships, while for others it emerges as a tool of sociality that enhances and develops everyday off-line social networks; for some it emerges as an important tool for developing off-line hobbies, and for others as a casual tool for larking around. By examining how children and technology come together in practice, we have provided a new body of empirical evidence that provides greater insight into young people's use of ICT than would a focus on either the properties of this technology alone or the social context of its use alone. Our findings counter popular fears articulated by commentators, whom we have dubbed "boosters" and "debunkers," that ICT will impact on children's lives in either universally positive or universally negative ways.

Finally, our empirical material contributes to the development of children and young people's geographies

by demonstrating the importance of understanding the way that children's social worlds are formed, not just through their associations with other children and adults, but also through their association with their material surroundings. In other words, we highlight the need for children and young people's geographers to recognize the range of objects or "things" through which children order their worlds. Some of the children's reports of the way that they use ICT demonstrate the extent of young people's agency and competence at managing both their on-line and off-line social relationships independently of adults, as well as the degree to which adults are unaware of their everyday activities.

Acknowledgments

The authors are grateful to the Economic and Social Research Council for funding the research on which this article is based (award no. L129-25-1055). Thanks to Nick Bingham, who was employed on this project as a research assistant. Gill Valentine also wishes to acknowledge the support of the Philip Leverhulme Prize.

Notes

1. The names of the places, schools, and informants have been changed in an effort to protect individuals' anonymity and confidentiality.
2. The interviews were carried out by Gill Valentine, Sarah Holloway, and Nick Bingham.
3. British children start secondary school at the age of 11. The first year, when they are 11–12, is known as year 7. Subsequent years relate to the following age groups: year 8 is 12–13-year-olds; year 9, 13–14-year-olds, year 10, 14–15-year-olds; year 11, 15–16-year-olds; year 12, 16–17-year-olds; and year 13, 17–18-year-olds.
4. However, as Benedikt (1991) points out, while the technology may be new, exploring and playing with identities is not. He (6) writes, "Cyberspace can be seen as an extension, some might say an inevitable extension, of our age-old capacity and need to dwell in fiction, to dwell empowered or enlightened on other, mythic planes."
5. For a further discussion of the different schools' constructions of ICT, see Valentine and Holloway (1999).

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