

The Networked Household

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Abstract

We argue that individuals, rather than family solidarities, have become the primary unit of household connectivity. Many households do not operate as traditional densely-knit groups but as more sparsely-knit social networks where individuals juggle their somewhat separate agendas and schedules. At a time when many people enact multiple, individual roles at home, in the community and at work, we ask: how do adult household members communicate with each other? How do adult household members use information and communication technologies (ICTs) to organize, communicate and coordinate their leisure and social behavior both inside and outside the home? Interviews and surveys conducted in 2004-2005 in the Toronto, Canada area of East York show that households remain connected – but as networks rather than solidary groups. We describe how networked individuals bridge their relationships and connect with each other inside and outside the home. ICTs have afforded household members the ability to go about on their separate ways while staying more connected – by mobile phone, email and IM – as well as by traditional landlines. In such ways, rather than pulling families apart, ICTs often facilitate communication, kinship and functional integration.

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Away from Pleasantville – Households Becoming Doubly Networked

When Hillary Clinton asserted, “it takes a village to raise a child” (1996), she admirably pointed to the involvement of social networks in household relations. We go further to argue that contemporary households are doubly networked.

1. They are thickly connected by communication media new and old: phones (wired and mobile) and the Internet (email and instant messaging).
2. The households themselves are often individualized networks rather than solidary groups. Each household member functions as a semi-autonomous actor, with her/his own agenda, using a variety of transportation and communication media to contact and coordinate with each other.

Although this trend to networked households began before the proliferation of Internet and mobile phone communication, the intrinsically *individual* nature of these media – as contrasted with calls to wired household phones and in-person visits to homes – has facilitated the transmutation of households into networks, just as cars and phones have led personal communities to become far-flung social networks rather than locally-bounded villages and neighborhoods (Wellman 2001).

With pioneering foresight, Elizabeth Bott argued more than fifty years ago that “no urban family could survive without its network of external relationships” (1957; p. 281). She showed that networked households had different types of relations with kinship than did solidary households. Since then, household organization has been changing towards more individual agendas and trajectories – even before the ICT revolution. Where married or common law couples with children accounted for 55 percent of all Canadian households in 1981, they accounted for only 44 percent of such households in 2001 (Statistics Canada 2001). As well, the prevalence of living common-law (unmarried long-term cohabiting couples) has increased: Where 6 percent of couples lived common-law in 1981, this more than doubled to 14 percent in 2001 (Statistics Canada 2001).

Households have become less stable in composition and role relationships. While Canada’s divorce rate has remained constant at approximately 38 percent over the last few years, the percentage of repeat divorces involving remarried divorced women tripled from 5 percent in 1973 to 15 percent in 2003 (Statistics Canada 2003a). Similarly, the divorce rate for previously married men tripled from 5 percent in 1973 to 16 percent in 2003.

Households have become smaller, making the need for centralized control less crucial. Single-person households have increased steadily from 20 percent in 1981 to 33 percent in 2001. By 2001, there were about as many one-person households as there were households with four or more persons (Statistics Canada 2001). Two-person households have also increased from 29 percent in 1981 to 33 percent in 2001. This, the fastest growing household type in Canada in 2001, usually consists of a childless couple or a single mother with a child. Couples with no children living at home have risen from 34 percent of all households in 1981 and 38 percent in 1991, to 41 percent in 2001 (Statistics Canada 2001; 2005).

Therefore, it is not surprising that Canadian households contain fewer children than before. The decrease in household size is partially related to women having fewer (or no) children, with the fertility rate decreasing from 1.6 children per woman 1976-1981 to 1.5 children per woman

1996-2001. A higher percentage of young adults are postponing having children in order to pursue educational interests and establish their careers.

With 73 percent of men and 62 percent of women participating in the labor force (Statistics Canada 2005), more spousal households contain dual-earners (Jacobs & Gerson 2001). North Americans work longer weeks with less time for home life (Fagan 2001), the average age of married couples has increased, and women are staying childless longer – with a higher percentage not having children at all (Statistics Canada 2003b; 2005; 2006).

The time that both men and women spend with other household members has declined in the past twodecades. When Statistics Canada examined women and men doing paid work, it found that where 23 percent of workers spent six hours or more in a workday with other household members in 1985, only 14 percent did so in 2005. Where women workers' time with other household members averaged 248 minutes during workdays in 1986, it declined 15 percent (39 minutes) to 209 minutes in 2005. There was a slightly greater decline of 18 percent (45 minutes) for men, from 250 to 205 minutes. An increase from 8.4 to 8.9 hours (30 minutes) in the typical Canadian workday is responsible for most of this decline (Turcotte 2007).

Not only have people been spending more time doing paid work, they have been spending less time on household work, abetted by the proliferation of inexpensive restaurants, take-out facilities, and kitchen aids (Michelson 1985; Robinson & Godbey 1997; Cheng et al. 2007). The frequency of people saying they usually have family dinners together “has declined by a third over the last twenty years, from about 50 percent to 34 percent” (Putnam 2000: 100).

Taken together, these data suggest that the supposedly “traditional” post World War II Canadian family has changed considerably over the last 30 years. To be sure, in the traditional model of the children's primer *Fun with Dick and Jane* (Anonymous 1940), husbands and wives went their separate ways: husbands off to paid work as “breadwinners”; wives staying behind to do unpaid “homemaking” (also depicted in the movie, *Pleasantville*, Ross 1998). They were rarely able to communicate while apart. However, the traditional model also assumed that husbands, wives and children would spend most of their leisure time on evenings and weekends together. The upshot is that while “love conquered marriage” (to quote Coontz's book subtitle, 2005), husbands, wives and children have been charting individualized daily lives in far-flung cities and suburbs. Family cars have multiplied into each-adult cars (Putnam 2000), as have television sets: where 28 percent of Canadian workers' households had two or more TVs in 1987, 63 percent have multiple sets in 2005 (Turcotte 2007). Household television watching has become personal television. More generally, media use and consumption have become personalized and individual.

These interrelated changes in the composition of North American households, the life-cycle complexities of marriage and divorce, homemaking and paid work, and decisions to have children or not (and how many) mean that the nature of these households is varied, complex and evolving. The structural and demographic complexities of contemporary North American life have increased tensions and opportunities (Hochschild 1997). Household life has sped up and people multitask or rush from task to task, feeling they have too much to do and too little time to do it (Menzies 2005). Contentions between home life and work life are high, as the work day has lengthened, teleworkers do all or part of their jobs at home, and managers and professionals bring work.

Since the early 1990s, personal communication systems – mobile phones and personal computers at home and at work – have greatly facilitated people’s networking capabilities inside and outside their homes (Venkatesh et al 2003; Wellman & Haythornthwaite 2002; Lally 2002). Not only do many people use the Internet at work, a majority of North American Internet users connect from their homes (Madden 2006; CIP 2005; Statistics Canada 2005). For example, 72 percent of Canadians use the Internet from home, work or other locations. While the prevalence of home computing has aided connectivity, many people are not rooted to a single personal computer in the home (or at work) – or for that matter, to their wired-in telephones. Instead, they take their communications with them, using mobile phones, portable laptops, or Internet access through home, work and public venues.

At a time when ICTs have become domesticated in the household (Haddon 1992; 2006; Cumming & Kraut 2001), we are particularly interested in the implications of ICTs for the interplay of individualism and functional integration within households (Mesch 2003; Mezaros 2004). The household’s technological systems must be studied within the context of household social relations; on the other hand, the pervasiveness of ICTs is so great (and we argue, important), that it is crucial for understanding contemporary household relations.

We use survey and interview data to analyze how 167 adults living with partner in households keep in touch with each other.¹ We examine whether there are differences in how women and men use ICTs in their homes, negotiate family matters, and share Internet information.² Although many factors have affected the turn towards networked households, we focus on comparing people with different amounts of home Internet use, from none to heavy. Our basic questions are:

- How do adult household members communicate with each other?
- How do adult household members use ICTs to organize and coordinate their leisure and social behavior both inside and outside the home?
- How do adult household members use ICTs to share things with each other?

The Connected Lives Project

The Locale: Data collected for our *Connected Lives* project come from East York, a primarily urban residential area located 30-45 minutes from downtown Toronto, with convenient road and transit access. East York, with a population of 112,054 people in 48,057 households (2.3 persons/household; 2006 Canadian census) has been studied twice in pre-Internet days by NetLab (Wellman 2001). In many respects, East Yorkers reflect Anglophone urban Canada. Fifty-eight percent of the survey respondents are women, with a median age of 45. Nearly two-thirds (62 percent) of the survey respondents are married or stably partnered, 61 percent of the respondents have children. Most are working-class or middle-class: 43 percent of the respondents have a university degree. The largest ethnic group is British-Canadian (44 percent of

¹ “Partners” are either officially married or living together as common-law spouses: Ontario family law (section 29) makes little distinction and allows same-sex marriage.

² The study’s sample size and geographic specificity limits the generalizability of our research findings, although we believe they represent a broader situation. Our analysis focuses primarily on gender and type of internet use and does not include such demographics as ethnicity and socioeconomic status.

the respondents), with visible minorities comprising 27 percent of the respondents: principally East Asians and South Asians.

Data Collection: We randomly sampled English-speaking non-frail adults (18+) and collected 350 completed 32-page **surveys** that were hand delivered between July 2004 and March 2005, for a response rate of 56 percent. The survey provides information about how people in East York are currently using the Internet, their personal community networks, community involvement, social attitudes, and household relations. Except where noted, all statistics used in this paper are from the survey.

Connected Lives doctoral students conducted lengthy (2-4 hour) in-home **interviews**, February-April, 2005, with a 25 percent subsample of the survey respondents. The interviews yielded information about daily work, leisure, household relations, social networks, social routines, and ICT use (Hogan, Carrasco & Wellman 2007).

Internet Use: Our data show that East Yorkers use the Internet somewhat more frequently than the average Canadian, consistent with urban, anglophone Canadians having higher rates of Internet use (Fong, et al., 2001; Ekos, 2004). Only 6 percent of partnered respondents never use the Internet from their homes (**non-users**, although some use it from work or other locales); 24 percent are **light users**, connected to the Internet from home 1 to 2 hours per week (mean = 1.6 hours per week); 35 percent are **moderate users** connected 3 to 7 hours per week (mean = 4.6 hours per week); while 35 percent are **heavy users**, connected more than 7 hours per week (mean = 20.5 hours/week, or almost 3 hours per day).

<Insert Table 1 about here>

East Yorkers are most likely to connect to the Internet from home between six and eleven in the evening; the usual time when people are home from work. Four-fifths (82 percent) go online during this period. They were least likely to use the Internet between five and eight in the morning (17 percent).

It is striking that about the same percentage of non-users as users have a computer at home, and that most of the non-users have more than one computer at home. Even though these non-users do not use a home computer, their partners or children do. Indeed, more than one-third (37 percent) of the respondents have more than one home computer (Table 1).

More than two-thirds of the survey respondents have mobile phones (68 percent). As is the case for the Internet, this is a higher percentage than the adult Canadian percentage of 61 percent in 2006 (Ipsos 2006), probably because urban mobile phone coverage is better than rural coverage.

Most East Yorkers are connected online and have been online for many years. They are rarely newbies. The digital divide has narrowed in East York: the four user types (from non-users to heavy users) have similar mean ages, most have at least an undergraduate degree, most have paid employment, and each type has been online for an average of approximately seven years (Table 1), except for non (home) users who have been online slightly less – albeit from their workplaces, libraries, etc. Only a minority of Internet users work at home, ranging from 23 percent of the light users to 32 percent of the heavy users.

Although there are no significant gender differences between each of the three user groups in the amount of time that people spend online, non-users and light users are more apt to be women. Moreover, women who do not use the Internet almost always have children living at

home and have less formal education than women who do use the Internet. These differences may be related to the domestic division of labour, child care, husband care, and other time constraints (Shelton & John 1996; Hochschild 1989; Luxton 1980).

Communicating, Coordinating and Sharing in Networked Households

How do Household Members Communicate with Each Other?

Voice dominates fingers: phones are used more than the Internet (Table 2). Traditional landline telephones are used more than mobile phones, and email is used more than instant messaging (IM). Internet communication has not replaced other modes of communication; landlines and mobile phones are integral ways that people connect with each other (this finding is consistent with Quan-Haase et al 2002; Boase et al 2005; Wellman, Hogan et al 2006). The main gender difference is that mothers contact their children more than fathers do.

<Insert Table 2 about here>

Landline Phone: Landline phones continue to be the most frequent medium that East Yorkers use to communicate with partners and children. The East Yorkers call their partners almost every business day: about 20 times per week. Without home Internet access, non-Internet users call their partners on landlines almost daily. Women who do not use the Internet at home make the most landline calls, but the relationship between phone and Internet use is complex, with no significant variation by gender or frequency of Internet use.

The evidence shows that the Internet adds on to landline telephone contact, rather than replacing it. Nor does the amount of Internet use significantly reduce the amount of landline phoning. Internet using men use landlines at least as often as do male non-users, while female Internet users call somewhat less often than non-users.

Although East Yorkers use landline phones less often to connect with their children than with their partners, landlines are still the most frequently used communication medium to contact children. Similar to communication between partners, the frequency of Internet use between parents and children is not significantly related to the frequency of landline phone calls. Mothers may call their children more than fathers do, although the gender difference is not significant. For example, women who are light Internet users call their children an average of twice a week while men call about weekly.

Mobile Phone: Mobile phones are second only to landline phones as a way for household members to communicate. (Like almost all North Americans, they use their mobile phones to talk rather than to text.) As is the case for landlines, Internet use is *not* associated with lower mobile phone use. Both heavy and light Internet users call their partners with their mobile phones every other day, with moderate users calling on their mobiles slightly less. Although none of these differences are statistically significant, non-Internet users use mobile phones the least to call their partners, calling slightly more than weekly. There is a similar pattern in mobile phone calls to children, with light and heavy Internet users calling children on mobile phones weekly, whereas non-Internet users and moderate Internet users call less than weekly. The low rate of mobile use by non-Internet users suggests that rather than using mobile phones to compensate for non-Internet use, some people avoid mobile phones as well as the Internet, possibly for reasons of cost, technological aversion or lack of perceived need. Some non-users prefer to not use telephony at all (including now-traditional landlines) and favor face-to-face contact instead. As one interview participant told us:

I'm not a great telephone person. In person is better for me. I'm not a great telephone person compared to Irene...like Irene will get on the phone for an hour and a half...I don't understand it. I get on the telephone just to make an appointment. I don't tell my stories over the phone. I'd rather talk in person. (#852 non-Internet user)

Women tend to use mobile phones to call their partners and children more frequently than men do. Indeed, male non-Internet users have the lowest rate of mobile phone use. Yet, the overall sample shows men using mobiles more because male light users call on their mobiles twice as frequently as women. This is a marginally significant difference, with such men calling on average almost daily and women slightly more than weekly.

Email: Household members also use email to communicate, although less frequently than they use landline and mobile phones: once or twice per week on average. However, they rarely email partners when they are both home: light and moderate users do not do this at all and heavy users do so less than monthly.³

There is less email to children than there is telephoning. Moreover, hardly anyone emails their children when they are at home together. No gender difference is statistically significant, but Table 2 shows that men email their partners as often as women do, while mothers email their children more often than do fathers.

Instant Messaging: Several media stories have announced that household members are increasingly using instant messaging (IM) to stay in contact (e.g., Schwartz 2004). Presumably, these stories were in response to the great use of IMs among children and teens (Lenhart 2002). Yet what is commonplace among teens and trendy among the media, is rare when adults are involved. On average, people IM partners much less than once per week, although the average hides lumpiness: many never IM, while a few IM more frequently. Parents almost never IM their children: this is a medium for child-to-child chat only. Moreover, hardly any East Yorkers use IM to communicate with their spouses/partners or children while they are at home together. This could be because IM users are usually young adults and teens, while the East Yorkers are usually middle-aged.

How do Household Members use ICTs to Organize their Leisure and Social Behavior?

The East Yorkers' schedules, routines and leisure are often full, busy, complex and mobile. In addition to their routine involvement in paid work and unpaid domestic work, many/some are also busy with hobbies: 9 percent of partnered participants are active in hobby groups, 9 percent in professional associations, 13 percent are active in religious organizations, and 7 percent are active in sports leagues - in addition to less organized leisure activities such as exercising, taking walks, and doing various sports (swimming, biking, golfing, etc.). For those with children, there is the added responsibility and time taken with their children's extracurricular activities such as sports, ballet, and scouts. To accomplish their day, household members must organize not only their own schedules, but also take into account the schedules of others in their homes. One interview participant says she "feels like she is a taxi" for her

³ This is in contrast to the experience of both (heavy user) authors of this paper who send emails to their loved ones daily, pointing out interesting things on the web, forwarding messages from third parties, including attachments of photos, etc.

children's hobbies, driving from one activity to another, while a male moderate user emails his wife about

sports schedules, stuff like that: I'm going here, we're going there; they have to go here, they have to go there: "can you take them?" You know? Dental appointments: "Well, now I'm taking them to dentist at such and such, [so] put this in your schedule at work" (#455).

Emailing Household Members from Home: Emailing partners from home helps to mediate the East Yorkers' hectic routines. Yet, not all households are alike. Moderate Internet users email their partner an average of about once per week, while heavy users do so an average of about three times per week, while light Internet users generally do not email their partners from home (Table 3). There are some gender differences as well, although patterns are mixed and the differences not significant.

<Insert Table 3 about here>

Keeping connected with household members is vital. While people may use various communication tools, the social affordances that ICTs – email in particular – provide is important. Mobile, multitasking people value email's ease and convenience, including its asynchronism and lack of intrusiveness. Unlike phone calls, email does not interrupt people at work or during childcare, it can be accessed wherever there is an Internet connection, and it can be answered in the cracks and crevices of a busy day. Interview participants consistently note how email is a useful way to keep track of what spouses, partners and children are doing. As one moderate user says:

It's faster, so when you have a busy work day, to quickly send an email and say, "Does this work for you?" versus me picking up the phone and calling (#442).

There is no question that household members are keeping connected when they are apart. While the East Yorkers can sometimes travel to meet face-to-face, and they can often use landline, mobile, IM or email to connect, some deliberately use email as their tool of choice. One moderate user describes her media choices:

I: Do you ever email your husband from here? ... And send a message to his work?

P: It's usually because when we're here, there's a thousand things going on and then the daytime comes; the girls are at school, he's out of the way, Adam's sleeping, and I think, "OK, we need to do this, this, this and this". So I'm not going to pick up the phone 'cause he's at work and I don't want to do that - but let me just send it so that way it's out of my head. I've communicated, and when we get together tonight, "oh yeah, that email you sent me." (#421).⁴

Emailing Household Members from Work: While light Internet home users rarely email their partners from home, they send an average of three emails per week from work (Table 3). Moderate users do email from home, and also send an average of three emails per week from work. Although heavy Internet users email slightly less often from work (an average of twice per week) than home, when combined with their home emailing, heavy Internet users email their

⁴ "I" refers to Interviewer, and "P" refers to Participant. The number after each quotation is the participant's ID number in the Connected Lives study.

partners the most frequently: an average of 4.6 messages per week. Women email household members from work more than men do, even though they often work less hours per week (33) than men (44). While the workday has increased over the last twenty years, so has the length of coffee breaks and lunches (Statistics Canada 2005).

Email helps household members stay on top of the work day, especially when the work day might interfere with the communication between partners. One heavy male user notes how he lets his wife know via email that he's in a meeting and not reachable:

Convenience: it's less troubling, distracting. She doesn't know when I'm in a meeting or anything like that (#561).

Similarly, a light user notes:

I do it from work all the time - to my husband in particular, because my kids during the day are not online - in school. But to my husband...I know he's honestly on the computer a lot during the day. Not all day, but a lot, and I know he checks his emails frequently, so I can usually catch him there. Not that he doesn't have a mobile phone all the time with him and stuff like that, but I'd rather just zip off an email to him...I emailed him today, I can't even think what it's about - like, "are you going to be home today after school to take the dog out?" You know - that type of thing (#432).

How do Household Members Use ICTs to Share Things with Each Other?

Sharing Online Experiences with Partners: In days gone by, families used to gather around the piano. More recently, families gathered to watch television shows. Now, many East York families gather to use the Internet together at home. Heavy Internet users spend an average of about three hours per week with their partners using the Internet (Table 4). Moderate users spend an average of about an hour and a half online with their partners, while light users spend on average of about an hour per week online with their partners.

<Insert Table 4 about here>

The more the Internet is used, the more time that partners spend together online: heavy users spend 1.8 as much time online with partners than moderate users and 2.3 times as much than light users. Yet, lighter Internet users spend proportionately more of their online time with their partners than do heavier users: Three-quarters (75 percent) of the light users online time is with partners as compared to one-third (35 percent) of the moderate users' Internet time and one-sixth (14 percent) of the heavy users' time. As people spend more time online, household interactions increase but not at as great a rate as interactions that do not include sharing with partners at home.

The East Yorkers use the Internet to show or share things of interest. They sometimes use the Internet together when planning activities such as movies, concerts and vacations - or even just for fun, but they also use it to complement other leisure activities they engage in together such as television (Heavy, moderate and light Internet users also spend on average about three hours per week watching television with their partners.)

One heavy user explains how the time that she and her husband each spend online on things that interests them yields Internet togetherness:

My husband: the one thing that he does do...on the Internet is look at real estate, all over the place. Just the other night we were both sitting and looking at condos in Mexico. Let's do it! You know, we were looking at property in Greece, but it was ridiculous.... We will often do that.... He also likes to look at the muscle cars; you know, the old-fashioned cars? He and my eldest son actually will sit down look at things like that on the Internet. So yeah, sometimes we will sit together, mainly for that purpose, looking at the real estate, like: "Look at these houses!" or something and dream. (#174)

Similarly, a moderate user notes that he and his wife look at online travel information together:

Especially, it happens with what sounds like a TV commercial with travel stuff; we'll discuss: "what does this hotel look like to you?" (#844)

Household members use the Internet together not only to explore and share personal interests, but also to find help for tasks, such as home renovations. A heavy user explains:

We're doing research together on various different things we both like; we've been doing a major renovation project so we're researching what kind of toilet to buy... (#383)

A moderate user talks about a television show they enjoy watching together and how that spills into their joint Internet use:

Researching anything that we need to make a decision on, like comparing cars or...we're huge "Amazing Race" fans... after the show we'd go down and check clips for the next thing to try to choose. (#421)

In addition to sharing information with each other, household members often use the Internet to communicate jointly with relatives, both locally and globally, using IM, Internet phone and webcams. One moderate user comments that he chats online with his distant family members while his wife is with him:

When I chat with my family, my wife sits with me. She also chats with them. I chat with her family too. Then, she sits with me, and she chats with her family (#343).

Sharing Online Experiences with Children: Stories abound about how children have become the computer experts, often isolating themselves so they can IM with their friends or surf through *MySpace* (Shiu & Lenhart 2004; boyd 2006). While there is much truth to these stories, they tell only part of the tale. Couples are spending time online with their children as well as with each other. Women spend more hours with their children online than do men (Table 4). Women who are heavy Internet users are especially noteworthy, spending on average 4.6 hours per week online with their children, compared to male heavy users who spend only a third as much time, 1.5 hours per week.

Using the Internet with children is a new way of spending time with children, and it is often linked to women's domestic responsibilities and caregiving. As one light user woman notes:

Well, we go on the *Treehouse TV* [website]. It's like the kids' TV station: they have a website and they have games and music so... If I'm on there and she's coming around, I'll type in the *Treehouse TV* website and look at some stuff with her. (#263)

Not only do mothers spend leisure time online with their children, they also use the Internet instrumentally as a learning and educational tool with their children. A female heavy user explains:

We have access to the *Winnie the Pooh* site for counting and alphabet and stuff. So those kinds of educational games are not game games but are like counting or alphabet or you know: *Dora* and *Blues Crews* - like nursery rhymes and stuff. (#341)

Parents spend time online with older – and even adult – children as well as younger children. One female heavy user notes that:

My youngest [adult] son and myself will spend more time finding fascinating things on the computer like “oh, come and look at this!” You know? Whatever, right? So sometimes we will sit side by side at the computer and do stuff (#174).

Using the Internet jointly or at the same time allows household members to spend time together, even if they are otherwise doing different things.⁵ As has been true for TV watching (Silverstone 1994), Internet togetherness is much easier when computers are located in household spaces that are conducive to social interaction. Nearly half (43 percent) of partnered East Yorkers report having Internet access in communal areas, although even more (64 percent) Internet access points are in more segregated spaces such as personal offices and bedrooms.⁶ Communal areas – such as the dining room, living room, family room, spare room and basement/recreation room – not only provide easy access to the Internet, they also facilitate easy communication with others in the household, providing a place where people can congregate:⁷

There’s [only] one desk chair, but then there’s another chair that we can pull up close. We usually do that, and it’s also where we have the kids’ toys and stuff on the other part of the room. We’re always climbing over toys to get to that (#421 moderate user).

Sharing Information: While some East Yorkers spend time online together with partners or children, others do not. Going online from home is can be a solitary activity; connecting with friends and family, searching for information, banking and so forth are often things that people do by themselves. However, the household Internet also aids sharing information that people find online. Many interview participants note the “hey, look at this!” scenario, where they find something interesting online and want to show and share it with one another, either in person, by IM or by emailing. For example:

⁵ See Bianchi, Robinson & Milkie’s (2006) discussion of how parents multitask and incorporate children into their leisure activities. They also argue that parents are spending as much, if not more time with their children than parents in 1965.

⁶ The percentages are greater than 100 because many homes have two computers, and many people use computers at home and at work.

⁷ We have found this in our own experiences as well: One of the authors wrote this paper sitting side-by-side with his wife on dual home computers, while the other author wrote while sitting with her son on dual home computers.

If there's something interesting that comes up, like on the news that might have related to some spot we visited on our trip, I will call her and say: "Look at this story here," or something like that. (#815 heavy user)

[My husband] will sometimes print it off or sometimes show me. Sometimes he'll just talk about what he found out. (#832 moderate user)

In homes with more than one computer, people send interesting notes and web items to each other. One of the few IMing participants uses it to alert other members of his household, "if it's something I want my wife or kids to see" (#883). A moderate user comments:

We do a lot of stuff in parallel and then bring the results back and say: "Oh yeah, guess what I did find!" or "I get can't anywhere, can you come give me a hand?" You know: "You said you found something last time, where did you get it?" Stuff like that (#373).

Networking Households

Multiple Media Mavens

While some commentators (e.g., Nie, Hillygus & Erbring 2002) have suggested that computer use is partly responsible for the decline of social interaction among household members, systematic evidence has challenged this assertion (Katz & Rice 2002; Gershuny 2003; Mesch 2006). Like these other studies, we have found that Internet does not replace face-to-face contact with family or friends. Instead, it adds to it and enhances it.

The East Yorkers' complex lives – coupled with their personal mobility and mobile connectivity – means that most people use the Internet and phones to orchestrate their household schedules and tasks. The widespread availability of Internet connectivity – coupled with evolving information and communication facilities – enables them to use the Internet in many different ways: from communication with family and friends and obtaining general information to more context specific tasks such as seeking health information for children, looking for recipes for dinner and planning family vacations (Kayahara & Wellman 2007; Kennedy 2007). Communication – by email and IM – and information searching on the web are both individual and household affairs. The East Yorkers communicate frequently with their partners and children.

Despite widespread hype about the Internet and mobile phones, landline phones remain the pre-eminent mode of communication. Mobile phones are next most used by East Yorkers, followed by email and IM. There are few gender differences in how – and how often – the Internet is used, except that mothers have expanded their traditional childcare roles to the Internet.

One might imagine that the absence of the household Internet would encourage non-users to use the telephone more to stay connected. Yet, to our surprise, non-Internet users do not use landline and mobile phones more frequently than do Internet users, and some are averse to using another form of ICT: mobile phones.

Except for such non-users, media multiplexity is the rule. The East Yorkers use whatever means of communication is handy and appropriate for reaching partners and children at home, at work, or on the move (Haythornthwaite & Wellman 1998). Household members have complex

and media-rich lives. All but the few non-users use email to communicate with partners and children, valuing its asynchronicity and lack of intrusiveness.

Light Internet users present some unexpected results. While the light Internet users spend less time on the Internet overall, they use the Internet to communicate with household members more so than do heavier users. They send emails to their partners more often than the other groups, they IM their partners more often, they send emails to their children – both when they are under the same roof and otherwise – more often, and they IM their children more often as well. Households remain the core for light Internet users, while moderate to heavy users use the Internet to reach outward for information and communication, building from their household communication base.

This pattern of light Internet use focused on contact with family and friends is partly related to gendered communication patterns. Seventy percent of light Internet users are women. Previous research has shown that women tend to use the Internet to reinforce existing personal relationships with family and friends (Boneva & Kraut 2002; Kennedy, Wellman & Klement 2003; Shade 2004). Similar to how women have used the telephone (Rakow 1992; Moyal 1992; Fischer 1992), Internet communication allows the East Yorkers who are home, preeminently women, to overcome isolation (see also Miyata 2002).

Although computer users are often pictured as staring into their screens without regard to their surroundings, our research has found much shared Internet use in East York households. Not only do household members send each other messages and pointers to interesting websites, they sit together to share information and to communicate jointly with family and friends. It is often easier and more convenient to do this on email than via telephone or in-person. Searching for information online often encourages communication among household members. They either sit together, ask their spouse or child to look something up for them, or spontaneously pass on information they have found online. The information shared is often related to real estate, travel and vacation, home repairs or renovations, or product information. It is an exchange of information, a sharing of knowledge capital, and a facilitator of functional integration between household members.

Toward Networked Individualism

The coupling of personally operated cars with personalized ICTs – such as the Internet and mobile phones – helps East Yorkers to negotiate the complexities of their routines, schedules and family life. They are frequently on the move: mediating and negotiating work, school, spousal, parental, social relations, and organizational activities. The result is both less connectivity in person at home and more connectivity by ICTs. While ICTs afford physical separation from other household members, ICTs also keep people connected and networked as they communicate socially and instrumentally while they coordinate household schedules and tasks.

East York households are now the hubs of individualized communication networks rather than self-contained homes penetrated only by doorbells, wired phones and paper mail. With frequent use and widespread diffusion, ICTs have become key ways in which most households communicate and coordinate their hectic schedules. As Internet use supplements in-person and phone contact, people are more connected than ever, and they regularly use the Internet to balance and organize the mundane tasks of daily life.

Although East Yorkers rarely report keeping communications secret from household members, each person has more autonomy in communication, agenda setting, and even decision making about which ICTs to adopt and use. Their mobile phone is personal, unlike the household's landline. Even when they share a computer, they logon personally to email and IM. They can communicate with others and negotiate their own schedules with less likelihood that other household members will know when and with whom they are communicating. They email, chat, call, or message someone's Internet address or mobile phone number without knowing where the other person is.

It might seem that because of the pervasiveness of ICTs in today's households that there is less communal activity between household members. However, our data show that despite often-individual Internet use at home, East Yorkers show and share what they find online with one another and they spend time online together. There is a great deal of communication among household members, so much so that they carry household communication and concerns with them through the day. ICTs do not replace in-person (and wired phone) contact among household members. Yet, they complement such contact by filling in the gaps throughout the day and helping to make arrangements. They often bring household members together through spending time online together and sharing information.

Were the East Yorkers' households as socially networked before ICTs? Some undoubtedly were (Wellman & Wortley 1990). But ICTs have paradoxically afforded household members the ability to go about on their separate ways while staying more connected. In such ways, rather than pulling households apart, ICTs have afforded mutual awareness, integration, and support.

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Table 1: Characteristics of Partnered East Yorkers by Hours of Internet Use

		Non Home Users	Light 1-2 hrs	Mod 3-7 hrs	Heavy 8+ hrs	All	Sig.
Sample size		<i>n=10</i>	<i>n=40</i>	<i>n=58</i>	<i>n=59</i>	<i>n=167</i>	
Percentage of all users		6	24	35	35		
Mean Age		41	44	45	42	43	.510
	n=	9	39	57	59	164	
% Women		75	70	49	53	57	.126
	n=	8	40	57	59	164	
% with Children		90	70	74	78	75	.564
	n=	10	40	58	59	167	
% Employed		80	78	74	55	69	.051
	n=	10	37	57	58	162	
% Working at home		0	23	30	32	27	.260
	n=	8	31	43	34	116	
% with Undergrad. Degree Only		56	46	37	32	38	
% with Graduate Degree		11	21	26	25	24	.580
	n=	9	39	57	59	164	
% with > 1 Home Computer		67	36	37	33	37	.457
	n=	6	33	57	57	153	
Mean number of years online		6.2	7.2	6.6	7.9	7.2	.103
	n=	9	37	58	57	161	

Table 2: Mean Media Use (Times Per Month) by Frequency of Internet Use and Gender

		Non Users	Light 1-2 hrs	Mod 3-7 hrs	Heavy 8+ hrs	All
<u>Between Partners</u>						
Landline calls to partner	Women	26.0	18.5	23.2	20.4	21.0
	Men	18.0	18.9	18.5	23.6	20.5
	<i>n=162</i> All	22.3	18.6	20.7	21.9	20.8
Mobile phone calls to partner	Women	11.3	10.3	13.6	17.0	13.5
	Men	3.0	22.1	11.4	14.5	14.3+
	<i>n=132</i> All	9.3	14.1	12.4	15.8	13.8
Emails partner	Women	-	8.2	9.2	5.1	7.3
	Men	-	9.0	4.1	9.6	7.3
	<i>n=130</i> All	-	8.5	6.4	7.2	7.3
Emails partner when in house together	Women	-	0	1.3	1.5	1
	Men	-	0	0	1.8	1
	<i>n=122</i> All	-	0	<1	1.6	1
IMs partner	Women	-	4.9	4.3	1.8	3.4
	Men	-	3.3	1.9	7.0	4.3
	<i>n=121</i> All	-	4.4	2.8	4.3	3.8
<u>Parent – Child(ren)</u>						
Landline calls to children	Women	12.6	9.0	15.4	13.3	12.9
	Men	6.0	12.0	11.7	13.0	12.3
	<i>n=108</i> All	8.7	10.0	13.4	13.2	12.6
Mobile phone calls to children	Women	7.2	7.0	8.3	9.5	8.4
	Men	0	9.8	3.5	7.7	6.0
	<i>n=87</i> All	5.1	7.7	5.8	8.6	7.3
Emails children	Women	-	5.1	1.2	4.8	3.8
	Men	-	6.8	<1	2.6	2.5
	<i>n=79</i> All	-	5.8	1.0	3.7	3.2+
Emails children when in house together	Women	-	<1	0	0	0
	Men	-	6.0*	0	0	<1
	<i>n=69</i> All	-	2.5	0	0	<1+
IMs children	Women	-	3.3	0	0	1.1
	Men	-	5.0+	0	0	1.0+
	<i>n=73</i> All	-	3.9	0	0	1+

*indicates significant <p=.05

+indicates significant <p=.10

Never=0; >Monthly=1; About Monthly=3; About weekly=6; About daily=30

**Table 3: Mean Number of Emails Sent from Home and Work per Week
by Frequency of Internet Use and Gender**

		Light 1-2 hrs	Mod 3-7 hrs	Heavy 8+ hrs	Sig.
Mean # of Emails Sent to HH Members from Home	Women	0	2.3	2.4	.093
	<i>n=</i>	26	28	31	
	Men	1.1	0	3.1	.004
	<i>n=</i>	11	27	28	
	All	<1	1.4	2.8	.010
	<i>n=</i>	37	56	59	
	<i>sig=.905</i>				
Mean # of Emails Sent to HH members from Work	Women	4.0	5.1	0	.342
	<i>n=</i>	17	17	10	
	Men	1.7	1.1	2.7	.369
	<i>n=</i>	7	16	13	
	All	3.3	3.2	1.8	.634
	<i>n=</i>	24	33	23	
	<i>sig=.202</i>				

**Table 4: Mean Number of Hours Spent with Partner and Children Online Per Week
by Frequency of Internet Use and Gender**

		Light 1-2 hrs	Mod 3-7 hrs	Heavy 8+ hrs	Sig.
Mean # of Hours per Week Spent with Partner Online	Women	1.2	1.5	3.1	.103
	<i>n=</i>	26	26	31	
	Men	1.2	1.7	2.6	.306
	<i>n=</i>	12	29	28	
	All	1.2	1.6	2.8	.031
	<i>n=</i>	38	56	59	
	<i>sig=.784</i>				
Mean # of Hours per Week Spent with Children Online	Women	2.1*	2.2	4.6	.201
	<i>n=</i>	17	19	24	
	Men	1.5	1.3	1.5	.933
	<i>n=</i>	6	24	20	
	All	2.0	1.7	3.2	.203
	<i>n=</i>	23	43	44	
	<i>sig=.038</i>				

**Note: Participants were asked to check off a category of how many hours they spend on the following. Categories (such as 1-4) were coded at the mid-point (2.5) and may explain why it appears that light users spend all their time online with their children. Also, the question itself might be problematic because participants might include time spent online with their children at other locations (such as library or other family members).*