

**“She calls, [but] it’s for both of us you know”:
The use of traditional fixed and mobile telephony for social networking among
Norwegian parents¹**

by

Rich Ling, Ph.D.

Telenor Forskning og Utvikling
PB83
2007 Kjeller
Norge
Richard-seyler.ling@telenor.com

Abstract

This paper is an examination of parents’ use of mobile and traditional fixed telephony. It examines the ways in which these technologies are used in the construction and maintenance of social networks. To examine this we use two main sources of data. The first is the transcripts from a series of 12 interviews carried out with families in the Oslo area in the spring and summer of 1997. The second is the responses from a random sample of slightly more than 1000 Norwegian parents to a questionnaire administered in August 1998. Following from Rakow and Moyal, it is found that the social use of the telephone is gendered. The data shows that women’s use of the telephone is integral in their role as maintainers of the social network. The data shows that mothers are significantly more likely to call family and friends. They are significantly more likely to characterise the motivation for their calls as being “to have a chat,” and they are significantly more likely to be in agreement with statements regarding the use of the telephone for social interaction. None-the-less, women’s use of the telephone for these purposes is also often characterized as being unnecessary gossip. Thus, the data helps to identify the negotiation of useful social interaction vs. inconsequential chatter

¹ The proper citation is:

Ling, R. 1998. “*She calls, [but] it’s for both of us you know*”: *The use of traditional fixed and mobile telephony for social networking among Norwegian parents* R&D Report 33/98. Kjeller, Norway, Telenor.

1 Introduction

While doing work on youth and telephony we recorded the following sequence of comments:

Bente (13): I have buckets of friends and I talk [on the telephone] with and I sit and talk for several hours. If I am not out with them I talk with them on the telephone.

Interviewer: Do you talk several hours every day?

Bente: At any rate an hour a day I suppose. . .

Torvald (42): We noticed that after she began in middle school the telephone bill has gone up 100%. . .

Interviewer: What is it that you talk about

Bente: Just about everything, Music and parties and boys and friends and everything that happens and agreements and like vacations, the weekend and everything possible, like everything.

This sequence contains the seeds of this paper. At center stage here is the female. In this case, she is a 13-year-old middle school student that lays claim to “buckets” of friends with whom she talks about “everything” over the telephone. Her experience probably sounds familiar to the parents of other teen-aged girls. In some ways she fits nicely into the stereotype one has of not only girls but also women vis-à-vis the telephone. Here is the extensive telephonic interaction with a broad network of friends and about a broad range of topics. Here also is the father concerned about the economic aspect of telephony and, by implication interested in short and concise telephone conversations.

However, it is useful to examine this situation from a broader perspective. At a slightly more abstract level we see a girl who is being socialized into the social use of the telephone. In this case, she is on familiar ground, talking to a friend about points of common and perhaps banal interest. At the same time, however, she is learning how to use the telephone to communicate with others. In later life, as we find in this paper, this skill is brought into use as a type of remote care giving. Familiarity with the device and perhaps more importantly, familiarity with the techniques of conversation are the tools used here. In later age, the call to the sick aunt may not include the same list of topics, i.e. “music and parties and boys.” It will, however, likely include a list of conversation topics that set both parties at ease and further integrate the individuals and vicariously the family into a more robust network of relations. The call to the teen-aged friend as well as that to the elderly aunt, or the child who is away from home for the first time, are elements in the maintenance of a common sense of identity. It is this type of interaction that is basic to the social institutions of friendship and family.

In this paper we find that this type of activity is gendered. Our data, which focuses on the telephone use of parents, shows that mothers are significantly more likely to call family and friends. They are significantly more likely to characterise the motivation for their calls as being “to have a chat,” and they are significantly more likely to be in agreement with statements regarding the use of the telephone for social interaction. At the same time, social interaction via the telephone is not necessarily accepted as legitimate. It is attacked as gossip and as being unnecessary. Its extent is made obvious through the telephone bill and thus, it can become a point of conflict within the immediate family.

These elements are important as we move from an age of traditional fixed into an age of mobile and broadband telephony. Many of the same functions will migrate over into these new technologies. The coordination of everyday life and the social integration of family and friends will also be carried out via these new technologies. The gendered adoption of these technologies will have implications for their adoption trajectories and the ways in which we maintain our sense of self.

In this paper these issues are discussed. In the following section the methods used in the study will be examined and this will be followed by a review of the work done on social networks and the use of the telephone in their maintenance. This section will be followed by the actual results from the analysis of our data, including an examination of access to equipment, the use of the telephone by parents, the extent of the contact network, and finally attitudinal differences.

2 Method

This paper has two main sources of data. The first is a series of 12 interviews carried out with families in the Oslo area in the spring and summer of 1997. The second source of data is a quantitative database built up from the responses of slightly more than 1000 parents to a questionnaire. The questionnaire was administered by telephone in August 1998.

In both cases interviewees were included in the study based on the presence of adolescent children in the home. In the case of the qualitative interviews the age of the oldest child in the home ranged from eight to 23. To be considered for inclusion in the quantitative sample, the oldest child had to be between 10 and 20 years old.

The questionnaire administered in the second portion of the work, to a large degree, was based on the experience gained in the earlier interview work. The point with the qualitative work was to gain a rounded view of the dynamics of, among other things, telephone use in the home. This data, however, is not generalizable. On the other hand, since the data from the survey is a national sample of Norwegian homes, there is a claim on generalizability. The data shows, however, that there were more mothers than fathers in the sample. Almost exactly two thirds of the interviewees were mothers while one third were fathers. As a point of departure, we were interested in a 50/50 distribution. In practice, however, this was impossible to achieve. The fathers were either unavailable or unwilling to be interviewed. In some cases, for example, di-

vorced fathers who have not fulfilled the economic or social responsibilities for their children will be reluctant to be interviewed.

Given this bias it is important to map the demographic and background differences between the mothers and the fathers. When comparing the situations of the mothers and fathers included in the sample we find that the male interviewees were older,² more likely to be in a full time job³ and reported a slightly higher income⁴ than the mothers in the sample. The data also shows that the men included in the sample were significantly more likely to report living with a partner.⁵ The age and the job and partner status findings indicate that, if anything, the fathers we interviewed were more stable than the general population of fathers. This in itself is an interesting finding.

The findings reported here try to take this imbalance into account through the reporting of measurements of central tendency and percentage distributions.

3 Social networks, women and the telephone

3.1 The participation of the family in social networks

While this paper is about parents' use of the telephone in everyday life, an important aspect of this has to do with the nature of the social networks in which they participate. Analysis of telephone use is, in effect, an examination of social interaction. Analysis of telephone use is, to a certain degree a proxy for social interaction. The telephone is used to coordinate, to nurture, to socialize and to inform. While all of these tasks can be done using other media, or in person, the telephone is perhaps the ultimate medium for this type of interaction.

3.1.1 Women and their social ties

One need not wander very far into the literature on social networks before it is obvious that women have an essential role in the area of social networks. To study the social networks of families is to study the importance of women's contributions. Wellman suggests that "community keeping has become an extension of kin keeping both of which are the responsibility of the woman." A review of the social networking literature shows that it is women who often have larger and more complex networks (Moore 1990). Cochran et al. (1993, 90) found, for example, that women's networks were composed of about two women for every man.

There are two important dimensions to women's networks. The first is the demands they make on women for unrequited nurturing and, on the other side of the coin, the emotional support that networks provide for women. On the one hand, it is the responsibility of women to maintain the ongoing expressive production of the household, the family and the circle of friends. On the other hand, women rely on their female friends and kin for emotional support (Rosenthal 1985; Wellman 1992, 99 see also Riley 1993).

Research shows that many informal social networks are female. They often involve those living nearby and frequently include child-related issues. In addition, there can also be class-related differences. Upper class women often have larger social networks where working class women's networks are smaller, more kin related and more geographically concentrated. The larger number of non-kin members in the upper class networks is usually because of access to acquaintances through extended schooling. In addition upper class women have a larger geographic range, greater reliance on non-kin and greater selectivity in patterns of exchange (Cochran et al. 1993, 99).

Turning specifically to the family, "the work of kinship" is carried out disproportional by women who are often seen as "relationship experts" (Di Leonardo 1987, 442, 447; see also Parson and Bales 1955; Ross and Holmberg 1990; Wellman 1992). This is a task of increasing importance. Familial solidarity and continuity are an ongoing problem in the face of mobility, divorce, dual careers and the stress of daily life (Rosenthal 1985). Remembering birthdays, anniversaries, organizing gatherings, calling sick family members and retelling the family history are ways of celebrating, enforcing and crystallizing social integration. These activities are a way to construct a common sense identity, tasks that are usually under the purview of women (Ross and Holmberg 1990, 146-9; Berger and Kellner 1964). Di Leonardo has found that women often have a greater knowledge of kin, including their husband's kin (1987, 443). Ross and Holmberg found that women had more detailed and vivid memories of the couple's common life. This in spite of the fact that there is no evidence of women having better general memories. The authors conclude that there is a social factor impinging on the situation in that women are accorded the role of one who attends to the mental archives of the relationship (1990).

² $f(1,997) = 40.765$, sig. < 0.001

³ $f(1,997) = 162.959$, sig. < 0.001

⁴ $f(1,919) = 4.095$, sig. = 0.042

⁵ $f(1,996) = 8.492$, sig = 0.004.

Going one step further, there is evidence to suggest that female kin are in more direct contact with each other than male kin, a finding supported in the data reported below. Wellman and Wortley write that women, daughters and even daughters/sisters-in-law provide more emotional support than fathers and sons/sons-in-law (1989, 287). Wellman notes that, "Women kin are more important in the men's networks than male kin are in the women's networks" (1992, 82). Rosenthal describes particularly strong mother – daughter and sister – sister relationships. It is also often daughters who assume the care taking role for elderly mothers. They visit parents more often, are more involved with other kin, bridge the gap between generations, and organize family social gatherings more often than men (Rosenthal 1985, 966).

When considering divorced mothers, both their kin and the social networks are often smaller than their married counterparts. It is easy to see that their kin related social networks are smaller simply from the halving of the potential network members. When considering the non-kin network, the work of maintaining friends demands energy and time, resources which are sometimes unavailable to divorced women caring for children (Gunnarsson and Cochran 1993). We will return to this theme when we examine the results of the work done here.

3.1.2 Gender based socio-linguistic differences

One may ask what accounts for the differences examined above. As a partial explanation, one can examine socio-linguistic gender differences. Social networks are maintained through talk and through the use of the language. These are the binding elements. It is women's talk or correspondence that is employed in the socially proscribed work of maintaining the networks (Krogh 1990; Rakow 1992).

Several researchers have shown that women have greater interaction skills than men. Women use a variety of skills and devices to greater effect than men do. These include the strategic introduction of topics of conversation (Fishman 1978; Treichler, P.A. and Kramarae, 1983). They also include the use of devices such as rhetorical and factual questions to maintain conversation and indicate interest. Finally, women employ other forms of critique and interpretation when interacting (Treichler and Kramarae, 1983). Sattel has found women more accomplished at adjusting the tempo of conversation and the ease with which conversation topics shift. In addition, Sattel has examined men's domination of conversation through devices such as inexpressiveness and the reluctance to sacrifice topics of conversation in favor of those introduced by others (1976). It has been found that women confirm their participation in a conversation more often than men. They also are more likely to express interest through the manipulation of pauses and interjected linguistic grounding devices such as "mm" and "yea" (Sattel 1976 see also Clark and Brennen 1991; Clark and Marshall, 1981; Clark and Schaffer 1989; Duncan 1972, Johnstone, Berry and Nguyen 1994, Kendon 1967, Saks, Schegloff and Jefferson).

All of these strategies can be seen as ways to facilitate interaction and they are often used in women's networking. This is not to say, however, that women's talk is always seen in a positive light. On the contrary, women's networking and social interaction is often discounted, cast in a negative perspective and described as gossip. In spite of its negative image, this form of behavior can be seen as an indication of social integration as it is a part of the establishment of the standards of behavior (Imray, L. and Middleton, A. 1983, Jones 1980 194; Rakow 1992 see also Gluckman 1963, Tannen 1991).

3.2 The telephone, social networks and gendering of the technology

The themes outlined above are carried over into the consideration of the telephone as a medium through which social integration takes place. The fixed and the mobile telephone allow for complex coordination and interaction. In addition, the nature of the technology focuses attention on the talk; that form of interaction in which we have seen that women are particularly competent.

3.2.1 The telephone as an extension of women's work

Women's responsibilities for care giving are strongly associated with the telephone. In Rakow's quote-worthy expression, "the telephone is a site at which the meanings of gender are expressed and practiced. Use of the telephone by women is both gendered work – work delegated to women – and gender work – work that confirms the community's beliefs about what are women's natural tendencies and abilities" (Rakow 1992, 33).

As noted above it is the women who have the responsibility for kin-keeping even extending to the families of a woman's husband (Rakow 1992, 55). The telephone is one of the key media through which this activity takes place (Moyal 1992a, 55; Rosenthal 1985, 969).

"Women organize significant community activities, perform work for their husbands, maintain relationships among family and friends and perform time-consuming and little-recognized care-giving roles via the telephone." (Rakow 1992) (53)

The telephone is a technology that makes women accessible as caregivers and thus can enforce and extend the private sphere. Claisse and Rowe report that women use the telephone twice as much as men. Further, the woman is often the "social administrator" for the home via her role as the one that has the responsibility for answering the telephone. They indicate the telephone was used to manage, inform, coordinate and to discuss and that women had a central role in this (Claisse and Rowe 1988, 213-214; Claisse 1992; Claisse and Row 1993; see also Bakke 1996, 97; Lange 1992; Lange 1993).

Some of the practical aspects of the telephone have to do with the balancing of child care and career. Vestby found that the working parents, usually mothers, use the telephone to control and coordinate certain aspects of their children's home-based after-school activities. There is recognition that this control is limited, but there is at least the geographic certainty that the child is at home⁶ (Vestby, 1996, 75). The adoption of mobile telephones by parents in some ways extends the ways they interact with their children. Rakow and Navarro have described the effect of mobile telephones as "remote mothering and working parallel shifts." (1993; see also Gillard, Wale and Bow 1998). These authors note:

Suburban middle class life is complex and necessarily mobile. Increased pressure for children to be active in athletics, music, and other activities which might improve their ability to compete for admission into colleges and careers – as well as the decline in extended family and neighborhood support for child rearing – means that mothering work has taken on new and longer term dimensions. . . . Children attend schools and extra-curricular activities at various locations that require transportation, but for which public transportation is limited or non-existent. Shopping and other family business occur at yet another set of locations. It is no wonder that one woman pointed out, "I live in my car, just being a taxi service. (Rakow and Navarro 1993, 153)

While mobile telephones allow for this type of remote mothering, their adoption by youth can undercut this (Ling 1998).

3.2.2 Women's networks and the telephone

It is clear from the literature that women endure much of the emotional work within the family. They do the calling, they maintain ties and they are available to various family members via the telephone. However, they also reap the benefit of a device that allows them to maintain near friendships over longer distances. In order to fill out the picture of women's relationship to the telephone we must turn to Moyal's suggestion that the device provides women with a "psychological neighborhood" (Moyal 1992b see also Aronson 1971 Moyal 1992a). The telephone provides a way to stitch together the various items of daily life into a comprehensible whole (Moyal 1992b, 2 see also Haddon 1994; Livingstone 1992, 121; Rasmussen 1990, 27; Silverstone 1995; Tiger and Lura 1978, 2-3). Moyal found that the telephone allows groups such as single mothers to supplement friendships for the lost familial relations and used the telephone instrumentally in relation to negotiations with their former mates (1989a). Among elderly women, the telephone is seen as a device to insure security (Dewit, Wister and Burch 1988, King 1991, Mason 1989, Matthews 1987, Synge no date, Tinker 1991, Wellman and Hall 1986 Wellman and Wortley 1989).

As noted above the telephone is perhaps more intimate than other forms of communication as one can concentrate directly on the word, the voice and the intonation of one's interlocutor (Moyal 1989a, 1992b; Rasmussen 1997). Rakow points to the idea that there is direct mouth-to-ear connection. This connection is free from other cues and distractions. Rakow talks, for example, about the need for intense communication among teen girls. The telephone is a perfect channel for this as it allows for direct private communication (Rakow 1992, 37, 43).

These themes set into relief the social vs. functional – read female vs. male – character of the telephone (Fielding and Hartley 1987; Fischer, 1988, Frissen 1995, Ling and Hareland 1997; Martin, 1991, Rakow 1988). It has been noted, for example, that men use the telephone to make specific arrangements, while women use it to integrate a social network. One male respondent in a study carried out by the author noted that

There is an awful lot you can say [over the telephone] in ten minutes. I think that if you have conversations which last longer than ten minutes it is not a question of the necessary use of the telephone. That is gossiping (*skravling*). I can not understand that it will represent a major cost if one uses it only as necessary. . . . *I use the telegram style when I use the telephone.* I can not sit and talk for ten minutes! You must have endless things to talk about (Ling 1994). (emphasis added)

As pointed out by this man, the difference in approach has economic consequences for the family and can result in disagreement and misunderstanding. Rakow describes the guilt associated with the extensive use of the telephone, particularly long-distance calls that could be seen as straying over the line into the unnecessary (Rakow 1992, 49). The exclusive nature of the telephone lends itself to this type of interaction (Rakow 1992). The extended use of the telephone has also been seen as gossip mongering. Thus, the press for economic control can take on ideological tones.

4 Findings

Now that we have set the general theoretical background in place, it is time to turn to the findings from our work. In this section of the paper I will examine parents' access to telephone equipment, their use of the telephone, their contact network and attitudinal differences.

⁶ As the mobile telephone is adopted by teens, it weakens this already tenuous link. The fact that the telephone allows geographic mobility in addition to the notion that the device can be turned off (or one can assert that their batteries were low) means that children are freer with this technology (Vestby, 1996). In Norway many teens have adopted mobile telephones and the trend is accelerating

	Percent of parents		df	f	sig.
	Fathers	Mothers			
Have mobile telephone	80.65	55.77	1,998	67.291	<0.001
Use prepaid subscription	9.38	17.11	1,625	8.025	0.004

Table 1 Percent of parents having a mobile telephone and the use prepaid subscriptions for mobile telephones

4.1 Access to equipment

Turning first to the question of access to telephone equipment our data shows that there are no significant differences in access to fixed telephony between the mothers and the fathers in our sample. This includes an analysis of access to traditional PSTN and ISDN-based telephony, and the number of subscriptions in the home.

However, when one begins to examine gender vis-à-vis mobile telephony a different pattern emerges. Table 1 shows a strong gender based difference. The data shows that just over 80% of the fathers in the sample have a mobile telephone while only 56% of the mothers report the same.⁷ These frequencies of having a mobile telephone are quite high, even for Norway where there is roughly a mobile telephone for every other person in the country. They ring true, however, when considering that this group, particularly this group of men, is in their prime working and income years. Turning the tables, mothers are more likely than fathers to report that they regularly loan a mobile telephone.⁸

Another aspect of mobile telephone use can be seen in the analysis of prepaid vs. traditional payment. Table 1 also shows that women disproportionately use prepaid subscriptions while men are more prone to use traditional systems of payment. This finding points toward private vs. job-related access to mobile telephones. Fathers are significantly more likely than mothers to have some type of support from their employer for a mobile telephone. If one removes the effect of job subsidized mobile telephones from the analysis; there is no significant difference in the use of prepaid mobile telephone subscriptions. Thus, one can posit that the users of privately owned telephones have perhaps a more cautious relationship to the device. This, in turn, leads them to prefer pre-paid subscriptions wherein the cost of use is more obvious.

Time period	Mean nr. calls		df	f	sig.
	Fathers	Mothers			
6-9	1.42	1.42	1,141	0.000	0.986
9-16	2.00	2.06	1,515	0.247	0.620
16-19	1.93	1.89	1,486	0.099	0.754
19-23	1.64	1.78	1,429	0.596	0.440

Table 2 Mean number of private telephone calls made and received by gender and time of day, all terminal types

⁷ We asked if the respondent had a mobile telephone at their disposal (*disponert*). It could be that the interviewee owned the device or that they had received it from their place of work.

⁸ $f(1,993) = 3.89$, sig. = 0.049

When it comes to single mothers there is limited access to technology. As noted by Silverstone, this group is characterized both in terms of their relative material deprivation and – as we will see below – in terms of their relative social isolation (Silverstone 1995). While the mobile telephone opens the possibilities of remote mothering (with all its good and bad sides) it seems that this is not within the grasp of the single mothers who participated in our survey. First, single parents of both genders were significantly underrepresented both in terms of the number of mobile telephones in the home and in terms of the interviewees' regular access to a mobile telephone.⁹ Further, within the category of single parents, mobile telephones were significantly less common in the homes of single mothers than in the homes of single fathers.¹⁰ Further, single parents of both genders had fewer fixed telephones than their counterparts who were living with a partner.¹¹ Some of this may be due to living in smaller homes wherein there is less need for extension telephones. The same is true for access to PCs and the Internet.¹²

4.2 Use of the phone

The data in table 2 shows that the number of calls reported from all types of terminals is about the same for both mothers and fathers. Interestingly, the highest number of personal telephone calls is reported during the working day. This is different from the data on adolescent telephony wherein the majority of calls are made in the early evening. Obviously, adults have access to telephones at their jobs while teens rarely have access to telephones at school or in their entry-level jobs (Ling 1998).

While the total number of calls is about the same, there are significant gender based differences in the length of the calls. This was often a theme in the interviews with parents.

I have family in Hamar that I like to talk to. But I have to admit that when I feel the need to talk with my girl-friend that I use the telephone and then I don't think about how long I sit there. If I want to be on the telephone for a long time then I do it without thinking about what it costs. **Kari 41**

The data shows that overall the respondents report using about nine minutes per call for private telephone conversations. The mean rises from about six minutes during the early part of the day to more than 12 minutes in the late evening. The data shown in Table 3 indicates that mothers talk significantly longer on fixed telephones in all except the earliest period. The largest difference is in late afternoon and early evening. During this time mothers report conversations that are on the average almost twice as long as those reported by fathers.

		Mean call length (minutes)				
Time period		Fathers	Mothers	df	f	sig.
6-9	Fixed	4.56	8.09	1,108	2.393	0.125
	Mobile	5.69	7.40	1,19	0.217	0.647
9-16	Fixed	5.75	8.56	1,423	7.354	0.007
	Mobile	6.88	5.06	1,58	0.154	0.696
16-19	Fixed	7.52	12.49	1,411	9.878	0.002
	Mobile	4.68	5.12	1,46	0.053	0.818
19-23	Fixed	9.93	15.63	1,379	7.303	0.007
	Mobile	11.05	7.07	1,34	0.446	0.509

Table 3 Mean number of minutes per private telephone conversation by gender, time of day and terminal type

The data shown in this figure also indicates that gender based differences in time use are exclusively found in the use of fixed telephony. There were significant gender based differences in the time of use for fixed telephony. These differences were reported starting with the working day and continued through the evening. There were no significant gender based differences in the time used on mobile telephones. The latter finding contrasts with that reported for youth. In the case of teens there were significant time based differences for both fixed and mobile telephony (Ling 1998).

⁹ $f(1,997) = 29.650$, sig. < 0.001. for the number of mobile telephones in the home and $f(1,996) = 8.498$, sig. = 0.004 for the interviewees regular access to a mobile telephone.

¹⁰ $f(1,182) = 6.404$, sig. = 0.012

¹¹ $f(1,364) = 4.270$, sig = 0.04 for men (2.55 vs. 2.18 devices) $f(1,630) = 14.516$, sig. < 0.001 for women (2.45 vs. 2.02 devices).

¹² $f(1,996) = 16.616$, sig. < 0.001. for the presence of a PC in the home and $f(1,994) = 12.242$, sig. < 0.001 regarding an Internet connection in the home.

The content of the telephone calls is examined in tables 4 and 5. Echoing the informant who used a “telegraphic” style on the telephone, Figure 5 shows that men often call in order to give short messages. Our data shows that about one third of the men report this type of telephone call while only about one quarter of the women report the same type of telephone use. This type of call is particularly predominant during the early part of the day. While the percentage of men reporting this type of telephone call falls during the day, for women it peaks during the working hours and then falls during the afternoon and evening. The data shows a significant difference between the genders for this type of telephone call during the late afternoon and early evening.

By contrast, women made a disproportional number of calls in order to have a chat (*slå av en prat*). Overall, more than 38% of the mothers report having this type of telephone call on a typical day while only 20% of the fathers report the same. This use of the telephone is most predominant during the late evening. The greatest gender difference, however, is during the working hours and in the late afternoon and early evening.

Time period	Percent		df	f	sig.
	Fathers	Mothers			
6-9	41.46	29.67	1,130	1.766	0.186
9-16	37.89	35.71	1,496	0.240	0.624
16-19	33.74	23.96	1,475	5.200	0.023
19-23	23.26	17.29	1,422	2.069	0.151

Table 4 Percent of parents reporting having made a call to give a short message by gender and time of day, all terminal types

These findings are supported in the literature. According to Rakow, (1992, 42, 49) women reported that men only used the telephone to make specific arrangements. By contrast, as we have seen above many authors have described women’s use of the telephone to maintain a network. Livingston even reports that men are reluctant to answer the phone (1992, 122).

Time period	Percent		df	f	sig.
	Fathers	Mothers			
6-9	14.63	20.88	1,130	0.711	0.401
9-16	15.26	28.90	1,497	12.330	<0.001
16-19	26.99	46.96	1,475	18.407	< 0.001
19-23	23.26	58.31	1,423	5.768	0.017

Table 5 Percent of parents reporting having made a call to have a chat (*slå av en prat*) by gender and time of day, all terminal types

Livingston’s finding leads neatly to another aspect of telephony in the home. That being the parents’, and in particular the mother’s function as a “receptionist” for the calls of other family members. Several of the informants noted this in their comments. One mother said:

When she came home from America then we installed ISDN because otherwise I would not have endured because it rings and rings. That generation there, they don’t have any respect for not calling after 10 or things like that. It doesn’t matter when in the day they call so that telephone is in her room and the other line goes to Internet. . . . There is the answering machine for when she is not here. That is not my problem. I am not a receptionist and I never will be. I can’t take that. So we solved the one problem because I would have been driven crazy. . . . Before she moved to America she lived at home for a year, and before that I thought I was going to be crazy. You are simply super-aggressive when you are a receptionist. You have to remember everything and people call in the middle of the night, I just can’t tolerate that. . . . You know 90% of the telephone calls were for her. Synnøve, 41.

The data from the questionnaire shows that women took significantly more messages for their husbands than vice-versa.¹³ However, the data showed no significant differences between mothers and fathers when it came to the number of messages taken for children. Moving ahead slightly to attitudes toward telephony we also find that men, and most particularly university educated men, reported being reluctant to take messages for other family members.¹⁴

¹³ $f(1,811) = 6,959$, sig = 0.009

¹⁴ Fathers with a secondary education were significantly more in agreement with the statement “It is an annoyance to take messages for other family members” than women with a secondary education ($f(1, 459) = 3.992$, sig. = 0.046). Men with university education were even more in agreement with this than women with a university education ($f(1,406) = 12.146$, sig. = 0.001).

4.3 Contact network

One might be inclined to interpret the data presented above as supporting the somewhat negative notion of women as talkers. A further analysis, however, points to the positive social function of women's telephone use. In an offhand way, this double message comes through in the comments of Ragnar, a 47-year-old man who expressed irritation over his wife's and his children's use of the telephone for what he saw as unnecessary calls. He noted: "The mother of the house is very talented with the telephone you understand. It is such that she calls [to family and friends]. It is for both of us you know." Thus, even though there is an irritation with the use of the telephone, he seems to think it positive that his wife attends to the social responsibilities of the family.

As noted above, the literature on social networking indicates that women take the responsibility for developing and maintaining familial and social networks. The data on the private use of the telephone supports this finding. The data in this analysis shows that, in many situations, it is mothers who use the telephone to contact family, relatives and friends. In the words of a 41-year-old divorced mother "I have a large family that I am in contact with a lot with the telephone. And then there are girl friends and friends that I call."

In qualitative analyses, it is common to find women who call older relatives and friends who are sick and children living away from home. One mother said "I had a girl friend who was terminally ill and so I called to her parents to hear how she was doing" (Lill, 43). A mother interviewed in a different context reported using the telephone to keep in contact with her teenaged children living in the next town in order to attend high school (Ling 1994).

With children, the telephone is especially important. [In rural Norway], as a rule, after the children are done with the 9th grade they move away. The only contact you have with them during the middle of the week is through the telephone.

In other cases the telephone was used as an aid in the woman's role as the primary care giver. This came through most clearly in the case of a 50-year-old mother, Bjørg, who must be continually available because of her handicapped child and her elderly parents.

We have a car phone and a little portable. Most often when I am out of the house here I activate call forwarding. We have a problem because we never know when the school can call and I have parents that are sick. We never know when something can happen. And so it is just transferring our home number [to the mobile telephone] . . . We need to get that information that is necessary for family members because it can happen whenever. So I feel more secure that they can reach me. . . .

In consideration of her parents, she used both fixed and mobile telephony.

When it comes to my parents, they know that they can reach me if things happen. And in the car it is ok because we drive down to Sandefjord where they live and down through Vestfold there are so many accidents. And if we don't come at about the correct time they are very insecure and afraid. Then we can just call and say that we are in bumper-to-bumper traffic and they can relax. And they can reach us regardless because they have the number.

There is a reflexive nature to these comments. The woman can imagine the insecurity of her parents vis-à-vis her own safety and thus wants a channel of communication in case they begin to wonder about her safety. This woman was prepared to go to some length in order to be available to her family. In the case of their summer cottage, mobile telephony was unavailable and so they had developed a rather extended chain of technology through which they could maintain contact with her parents.

Bjørg: The cottage is such that there is no mobile coverage there. . . . but that is no problem because the house next door has a telephone and so we transfer our telephone to there.

Interviewer: Ok, so they can get a message?

Bjørg: Yea, that is no problem. We take a cordless [telephone] with intercom so the people in the house can just push the button and so we know.

Other mothers reported using the telephone for various types of contact with their children and the children's care givers.

I use the [regular telephone] a lot to find out where these children are when they don't come home and that you call to friends to sit there and visit. I actually use it for everything. We couldn't make it without a telephone. . . . If these kids don't come in at about 4:30 then I start calling. Lilly, (27).

Moving now from traditional fixed telephony to mobile telephony, the development of this technology has extended the range and the ways in which women carry out their role. Informants reported using the mobile telephone to contact their child's caregivers.

There was one time that I was on my way from work to get Egil [at the day care center], it was a late afternoon last year, and it stopped in the tunnel between Nationalteateret and Majorstua. I was taking the subway. Then I should have had a mobile telephone because the driver had no way of telephoning and so I was able to borrow a mobile telephone from another passenger to let them know. Katja, 50.

Other informants reported using the mobile telephone as a type of internal communications system for direct contact with their children for, sometimes, inconsequential matters.

Synnøve 41: I use [the mobile telephone] as a halfway babysitter so Barbara (9) can always get in touch with me. If I am out and she comes home or something like that. If there is something then she can call me, always find out where I am, and give a message. I like that. It is actually, it is a very good babysitter once in a while. . . . So that people can get in touch with me.

Interviewer: Have you called your mother on her . . .

Frank 13: A lot.

(Mother laughs)

Synnøve: A lot, a little bit too much.

Frank: *I wonder where she is or should I take one thing or another with me or where is this or that.*

Synnøve: It is really nice you know, one has to accept that the mobile telephone bill will be a little high from these calls, you just have to accept that.

Interviewer: You think that is ok?

Synnøve: I really think it is ok because it gives a security that like Barbara always knows where we are and so if there is something. . . It is good that they can get in touch with me if they need to.

Interviewer: Do all of you call your mother or is it just Barbara?

Synnøve: All of them call.

Anne (23): [Barbara] calls the most but us others call too.

Synnøve: And there are some others that know about that telephone number, but it is not like I give it out, like to the public because

Anne: It is almost just the family that has it.

Synnøve: There are a few others that know it but there are not too many. (emphasis added)

Single mothers reported similar use of the mobile telephone, i.e. a device allowing the balancing of their responsibilities as parents with other activities.

Let's say that I am at a parents' meeting at school, you know, then I can have it along. They know that they can reach me if something comes up. . . . The time I needed it I was stuck in traffic. . . . If the children are alone and I, . . . something like that, then I think it is ok to have it. Irene, 42.

Thus, while this group is underrepresented among the users of mobile telephony, some have begun to integrate it into their daily routines. Here we see the enactment of Rakow and Navarrow's remote mothering. The mobile telephone is a technology that makes women accessible as caregivers and thus can, at the same time enforce that portion of their everyday life while providing them with a certain freedom. The mobile telephone allows them to exist in both their work and private roles simultaneously – a situation that can cause role conflict (Rakow and Navarro 1993).

	Mean nr. calls		df	f	sig.
	Fathers	Mothers			
Sons	0.45	0.50	1,118	0.117	0.675
Daughters	0.45	0.71	1,189	6.479	0.012

Table 6 Mean calls per day to children living outside the home by gender of parents and gender of children, all terminal types

Turning back to the quantitative data one also sees the central role of women in the family's communication network. Looking first at the immediate family or the family of procreation, Figure 7 shows the mean number of calls between parents and children not living in the home. The data shows that there is significantly more interaction between mothers and daughters than that for any other combination.¹⁵ Wellman and Wortley reported similar findings (1989).

4.3.1 Nuclear and near family

Figure 8 shows that mothers are more active than fathers in calling near family.¹⁶ While fathers report an average of slightly more than three calls per week, women report more than 3.5 calls per week. Like the material on the use of the

¹⁵ $f(1,189) = 6.479$, sig. = 0.012

¹⁶ Near family or the family of orientation was defined as the interviewee's parents, the interviewee's siblings, and the parents and siblings of the interviewee's partner. The data shows that mothers were significantly more active in contact with near family members $f(1,997) = 4.664$, sig. = 0.031. This difference was seen reported calling activity for the past week $f(1,953) = 8.944$, sig. = 0.003 and during the past day $f(1,902) = 7.582$, sig. = 0.006.

telephone reported above, this data shows that mothers are the most active with regards to this type of social contact. Again, the qualitative data supports the findings from the quantitative material. A typical statement was: "I call regularly to southern Norway to my family. I have my mother and sister there. . . . It varies a little, once every two weeks or perhaps it is once a week" (Grete, 45). Other interviewees reported calling their parents almost every other day in a form of what we might call remote daughtering following from the concept of Rakow and Navarro. This particularly prevalent among those who had elderly parents.

I call to hear how my parents are doing. Both of them are over 80 and so I call and talk about different things, trips to the cabin, my 50th birthday, or social things, private social things. . . . We got a mobile telephone this summer, a cheap one, because as I said I my parents are over 80. . . . and this year I will be traveling around a lot in the car so I decided that it was ok to have a telephone so that I could be in contact, especially with them. Kristin, 50.

Women's contact with near family can even cross over familial lines in that sometimes the wife has responsibility for contact with the husband's parents.

	Mean nr. calls		df	f	sig.
	Fathers	Mothers			
Last week	3.01	3.55	1,953	8.944	0.003
Last day	1.04	1.30	1,902	7.582	0.006

Table 7 Mean number of calls to near family per week and per day by gender, all terminal types

This data supports the suggestion, noted above, that it is the women who have the responsibility for kin-keeping even extending to the families of a woman's husband (Rakow 1992, 55). The data also shows that degree to which telephoning is seen as one of the essential aspects of this activity (Moyal 1992a, 55; Rosenthal 1985, 969, Wellman and Wortley 1989, 287, Wellman 1992, 82).

4.3.2 Friends¹⁷

Moving further outside the family circle, we now turn to telephone contact with friends. As with the other cases reported above, mothers are in contact with friends via the telephone more often than fathers.¹⁸ There are, however, variations in this picture. The data shows that single parents have a different pattern of interaction than those living with a partner. In table 8 one sees that women generally have higher levels of daily telephonic contact with friends than men. There are indeed, significant differences among the youngest and the oldest age groups. The only variation to this pattern is among those in the 36-42 year age group where the fathers have a slight, but not significant edge on the mothers.¹⁹

Age group	Mean nr. friends		df	f	sig.
	Fathers	Mothers			
22-35	0.61	1.21	1,146	4.116	0.044
36-42	0.95	0.79	1,368	1.221	0.270
43-49	0.56	0.79	1,342	3.581	0.059
50-71	0.44	0.87	1,135	5.337	0.022

Table 8 Mean number of friends in daily telephone contact by age and gender

we see that mothers and fathers who live with a partner had less telephonic contact with friends. By contrast, those living without a partner had higher levels of contact with friends. In some cases, this latter category report more than twice as much contact.

¹⁷ We were interested in the total use of telecommunication for familial and social coordination. As a result we included questions covering the use of e-mail in the analysis. While there were some income and educational based differences in access to this service, the actual use of e-mail for the coordination of one's private lifewas inconsequential. We found, for example that only 10 of the 1000 interviewees had ever used it for communication within the immediate family. The numbers are similarly small for contact with other portions of the social network. We found, for example, that 9 interviewees reported e-mail in contact with school or free time activities.

¹⁸ Women were in contact with significantly more friends during a typical week ($f(1,990) = 3.987$, sig. = 0.046 and during a typical day ($f(1,999) 5.839$, sig. = 0.016.)

¹⁹ In examining these it is important to remember the limits of the data, i.e. it does not include an adequate sample of the youngest fathers.

The data in table 9 makes a commentary on the situation of women living with a partner vs. those living a single parents. For every age category the single mothers were in significantly greater contact with friends than was the case for their counterparts who were living with a partner. This is perhaps most intense for those single mothers in the youngest age category. It points to the fact that the telephone is used to supplement a life wherein the demands of children can reduce the time for social interaction. The importance of friends is also underscored in that this group of women does not have access to the normal array of family and relations. The data shows, not surprisingly, women living with partners report a greater number of calls to both near family and to more remote relations (Gunnarsson and Cochran 1993, 107).²⁰

Another interesting aspect of single parent friendship is shown in the data. Respondents were asked to give the total number of friends with which they had regular contact. The criteria was that they should be in contact with them over the telephone at least once every third month. The data shows that single mothers and those living with a partner reported about equal numbers of friends in all age groups with the exception of the oldest group, i.e. those over 50 years of age.²¹ In this age group, the women living with a partner reported a mean of 6.3 friends and single mothers reported a mean of slightly more than ten. While the data is cross sectional and not longitudinal, this finding may indicate that the years of more intense contact on the part of single women mean that they retain friends over a longer period than women living with a partner.

The data also allows for some inter-gender comparisons. Looking at this according to the age of the interviewee, we see that single mothers and the fathers have very different patterns of contact with friends. While the single mothers who are less than 35 years old report high frequency of contact with friends, this drops dramatically during the middle years and then rises slightly for those who are older than about 50. In so much as the data allows it, the opposite pattern can be seen for single fathers. They report a relatively high level of telephone interaction in the 35-42 age group. This followed by a drop in the frequency of calls among the oldest single fathers. A partial explanation for this may be that commonly single mothers care for children.

Age group	Gender	Mean nr. friends		df	f	sig.
		w/partner	wo/partner			
22-35	Fathers	-	-	-	-	-
	Mothers	0.94	2.08	1,108	8.804	0.004
36-42	Fathers	0.80	1.93	1,115	7.238	0.008
	Mothers	0.72	1.14	1,251	4.972	0.027
43-49	Fathers	0.51	0.81	1,134	1.473	0.227
	Mothers	0.66	0.77	1,205	6.808	0.010
50-71	Fathers	-	-	-	-	-
	Mothers	0.62	1.50	1,59	5.335	0.024

Table 9 Mean number of friends in daily telephone contact by age and couple status, all terminal types

4.4 Attitudinal differences

Finally, we have mapped out attitudinal differences between mothers and fathers using a set of statements regarding the use and ownership of various telecommunication devices. The results show that mothers were significantly more favorable to statements regarding the social use of the telephone. They are significantly more often in agreement with statements wherein the telephone is used to maintain social contact. By contrast, men were significantly more positive to statements having to do with the use of telecommunication devices to maintain contact with various persons and social institutions.²²

²⁰ The statistics comparing partnered and single women's contact with near family were $f(1,630) = 4.462$, $sig = 0.035$. When it comes to contact with more remote family the f statistic was $f(1,614) = 5.018$, $sig. = 0.025$.

²¹ $f(1,56) = 6.27$, $sig. = 0.015$

²² The levels of significance as follows:

Reach children's friend's parents ($f(1,989) = 22.352$, $sig. < 0.001$)

Have a long chat ($f(1, 1000) = 69.917$, $sig. < 0.001$)

Ok to cheer up others one way by gender = ($f(1,997) = 11.790$, $sig. = 0.001$)

Telephone contact with children's organized activities ($f(1,989) = 15.566$, $sig. < 0.001$)

E-mail to coordinate family ($f(1,720) = 9.144$ $sig. = 0.003$)

Pagers are bad ($f(1,901) = 6.313$, $sig. = 0.012$)

E-mail contact with school ($f(1,790) = 16.010$, $sig. < 0.001$)

Looking somewhat further, we have found that men with university education were often that group who was most opposed to the social use of the telephone. If we take as an example the item stating that "it is nice to have a longer chat on the telephone" one can see that university educated men were far less likely to agree with this statement than all other groups.²³ While the other inter-gender differences were also significant, the response pattern for the category of university educated men sets it apart from others.

As we have shown above, university educated men were most skeptical to the use of the telephone for longer chats. In addition, they were the most skeptical to the use of the telephone to cheer up others.²⁴ They were the least likely to feel it necessary to have the number of the parents of their children's friends.²⁵ They felt less need to have the number of their children's school activities²⁶ and finally, they were the most antagonistic to taking messages for others in their home.²⁷

If one examines the attitudes of university educated men vis-à-vis the application of technology there is the opposite pattern. Here one finds that they are more positive to the idea that children should have a pager so that they could be called in to dinner,²⁸ that e-mail is a good way to keep in touch with the school,²⁹ and that it is ok for children to have their own telephone.³⁰

The explanation for this is likely that these men have developed a type of ideology concerning the use of the telephone. One can read from these results that while fascination with the physical object and the potentials of advanced telecommunications are seen as positive, use for social interaction is less so. Another element here seems to be that, in the abstract, this group is interested in the application of technology to the problems of everyday life. Rather than a conservative attitude towards technology there seems to be a pioneer attitude towards its use. In contrast to this, under certain conditions mothers were significantly against their children's use of technology.³¹ In a similar way, the qualitative data provides examples of mothers who were skeptical to their children's adoption of advanced telecommunication equipment:

One mother said of her son's desire for a pager: "He is not so important that he needs to be reached there and then." Another mother was critical of her daughter's recent acquisition of a mobile telephone. She noted:

First, there is the uncritical use that she has shown with the [traditional] telephone. It has been completely crazy. And second, there is the misuse at school, that she forgets to turn it off when she should and things like that. . . . I am afraid for the use, that she will not be able to control that.

The fathers acquiesced or even allied themselves with their children in many of these cases.

5 Conclusion

This analysis has shown that both the use of the telephone and its physical presence in our lives are variously defined. We have seen that while men are perhaps more focused on ownership of the physical technologies, women are equally defined in terms of their use patterns.

Pagers to call in children ($f(1,892) = 4.972$, sig. = 0.026).

²³ Among the lowest educational group the inter-gender difference was significant $f(1,120) = 9.998$, sig. = 0.002). For the group with secondary education the difference was $f(1,461) = 15.962$, sig. < 0.001), for the university educated group the difference was also significant $f(1,411) = 47.214$, sig. < 0.001).

²⁴ $f(2,993) = 3.600$, sig. 0.026 for a two way ANOVA of gender by educational level.

²⁵ $f(1,407) = 16.800$, sig. < 0.001 comparing mothers and fathers with university education. $f(1,456) = 5.226$, sig. = 0.026 for the difference between fathers and mothers with secondary education. If one looks at the 95% trimmed mean for the three education groups, the "secondary" group probably falls out of significance, but not the university group. It is those with the higher educational level who are least in agreement with the statement.

²⁶ $f(1,408) = 15.049$, sig. < 0.001 comparing mothers and fathers with university education. $f(1,120) = 4.877$, sig. = 0.029 for the difference between fathers and mothers with primary education. If one looks at the 95% trimmed mean for the three education groups, the "primary" group probably falls out of significance, but not the university group. It is those with the higher educational level who are least in agreement with the statement.

²⁷ Fathers with a secondary education were significantly more in agreement with this than women with a secondary education $f(1,459) = 3.992$, sig. = 0.046. Men with university education were even more in agreement with this than women with a university education $f(1,406) = 12.146$, sig. = 0.001.

²⁸ $f(1,377) = 4.009$, sig. = 0.046

²⁹ $f(2,786) = 3.416$, sig. = 0.033 this is a two way ANOVA whereas the other two indicators are only one-way ANOVAS wherein an inter-gender contrast is significant.

³⁰ $f(1,410) = 5.167$, sig. = 0.024

³¹ Specifically women with children living outside the home were more skeptical to their children's ownership of mobile telephones. $f(1,112) = 9.791$, sig. = 0.002

The data shows that mothers stand in the hub of both familial and social networks. To a significantly greater degree than fathers, they are the ones that maintain the contact within the family and they are the ones with the friendship networks.

While both genders have access to fixed systems men predominate in their access to mobile telephony. Our analysis shows that while men often receive their mobile telephone in relation to work, this is less often the case for women. Turning to mobile phones that are exclusively private, it is more often the case that these use a pre-paid system of payment as it is a way to control the total cost.

When it comes to use, it is clear that women have longer conversations and that they employ the telephone for a broader range of social interaction than men do. Finally, the data shows strong gender-based attitudinal differences. While women were positive to statements regarding the use of the telephone for social activities, men, and particularly university educated men, were negative. At the same time, men were positive to the application of technology to their communication needs. Women were negative on this point.

We have seen that the telephone ties the extended family and friendship network together through the development of common meaning and experience. The social use of the telephone is a well engrained aspect of women's role. At the same time it threatens the stability of the immediate family in the form of arguments over the size of the telephone bill. It is a tool used to building up a common sense of family or group. At the same time the perception of its overuse within the family can also be an erosive factor. The telephone is a device that leaves the traces of its use in the sense of a common identity while also leaving traces of its use in the billing and the payment system. While longer conversations can be seen as showing care for a relative or friend in need of cheering up, they can, and are, stigmatized as gossip. Thus, it is not just talk; it is also identity construction and maintenance with a price tag.

Another gender based dynamic, that has both centrifugal and centripetal elements, is that associated with telephone equipment. Particularly in the past decade, the physical presence of telecommunications equipment has moved from a relatively anonymous position in our lives to one that is more central. This is due to the development of a range of new technical systems and the accompanying consumer devices, i.e. mobile telephony, ISDN, Internet and the like. Here again is occasion for disagreement. While men may press for the most advanced telecom systems and their use in various situations, these solutions may not be greeted with equal fervor by all family members.

Thus, we end with a paradox. Women wanting the social contact provided by the technology but less interested in the more advanced applications. Meanwhile, men seem to be more interested in the advanced applications but with less interest in the social use of the device. It is a mismatch that often stands at the core of differing gender-based interpretations of telephony.

One can ask how and if this paradox will be resolved. Its elimination requires two social changes, the first seems inevitable and the second utopian. It is easiest to suggest that as the cost of the various advanced telephony solutions, most particularly mobile telephony, comes down that women will become more equally represented as owners of devices allowing for its use. On the other hand, to suggest that the further development of telecom devices and systems will make men more verbose is less realistic. However, the spread of the telephone into other areas of our lives, via the development of mobile telephony, will allow more nuanced coordination of everyday life. Use of the telephone to give and receive short messages to other family members is an obvious use for mobile telephones. As we have seen, the use of the telephone to give and receive messages is a "male" style of use. Peering into the near future, then one might see a world in which there is a growth in this use of the telephone.

6 Bibliography

Aronson, S.J. 1971. "The sociology of the telephone." *International journal of comparative sociology* 12 (3) 153-156.

Bakke, J.W. 1996. "Technologies and interpretations: the case of the telephone." *Knowledge and society* 10 pp. 87-107.

Berger, P. L. and Kellner, M. 1964. "Marriage and the construction of reality." *Diogenes*, 46, 1-24.

Clark, H. and Brennan, S. 1991. "Grounding in communication." In Levine, J.M. and Teasley, S.D. (eds.) *Perspectives on socially shared cognition*. Pp. 127-149. Washington, D.C., American Psychological Association.

Clark, H. and Marshall, C.R. 1981. "Definite reference and mutual knowledge." In Josi, A.K., Webber, B. and Sag, I. (eds.) *Elements of discourse understanding*. pp. 10-63, Cambridge, Cambridge University.

Clark, H. and Schaffer, E.W. 1989. "Contributing to discourse." *Cognitive science* 13, 259-294.

Claisse, G. 1992. "Domestic telephone use in France." In Moyal, A. and McGuigan, A. (eds.) *Research on domestic telephone use: Proceedings of a CIRCIT-telecom workshop*. 25-26 February 1991 pp. 106 – 114. Melbourne, Australia: CIRICT.

- Claisse, G. and Rowe, F. 1987. "The telephone in question: Questions on communication." *Computer networks and ISDN systems*. 14. 207-219.
- Classe, G. and Rowe, F. 1993. "Domestic telephone habits and daily mobility." *Trans. Res.* 27A (4). 277-290.
- Cochran, M. et al. 1993. "The social networks of coupled mothers in four cultures." In Cochran, M. et al. (eds.) *Extending families: The social networks of parents and their children*. Pp 86 – 104. Cambridge, Cambridge.
- Dewit, D., Wister, A.V. and Burch, T.K. 1988. "Physical distance and social contact between elders and their adult children." *Research on aging*. 10 (1). 56-80.
- Di Leonardo, M. 1987. The female world of cards and holidays: Women, families and the work of kinship." *Signs: Journal of women in culture and society*. 12 (3). 440-453.
- Duncan, S. 1972. "Some signals and rules for taking turns in conversations." *Journal of personality and social psychology*. 23 (2) pp. 238-292.
- Fielding, G. and Hartley, P. 1987. "The telephone: a neglected medium." In Cashdan, A. and Jordin, M. (eds.) "Studies in communication. Pp. 110-124. Basil Blackwell, London
- Fisher, C. 1992. *America calling: A social history of the telephone to 1940*. Berkeley, Univ. of California.
- Fishman, P 1978. "Interaction: The work women do." *Social problems* 25 pp. 397-406.
- Frissen, V. and Yves, P. 1997. "Never mind the gap: Integrating qualitative and quantitative methods in ICT user-research: The case of busy households." Presented at the 6th EMTEL workshop, Barcelona, 7-9 November 1997.
- Frissen, V. 1995, "Gender is calling: Some reflections on past, present and future uses of the telephone." In *The gender-technology relation: Contemporary theory and research*. Grint, K and Gill, R. (eds.) pp. 79 – 94. London, Taylor and Francis.
- Gillard, P., Wale, K. and Bow, A. no date. "Telecommunications: Enemy of friend of life at home?" <http://cs.art.rmit.edu.au/tnrg/CONFERENCE%20PAPERS/EnemyOrF.html>.
- Gillard, P., Wale, K. and Bow, A. 1998. "The friendly phone." in Howard, S. *Wired up: Young people and the electronic media*. Pp. 135-150. UCL Press.
- Gluckman, M. 1963. "Gossip and scandal." *Current anthropology* 4 (3) pp. 307-315.
- Gunnarsson L. and Cochran, M. 1993. "The social networks of single parents: Sweden and the United states." In Cochran, M. et al. (eds.) *Extending families: The social networks of parents and their children*. Pp 105 - 116. Cambridge, Cambridge.
- Haddon, L. 1994. "The phone in the home: Ambiguity, conflict and change." Presented at the COST 248 Workshop 'the European telecom user' 4.13-14 Lund Sweden.
- Imray, L. and Middleton, A. 1983. "Public and private: Marking the boundaries." *British sociological association 1982 papers*. Pp. 166-176.
- Johnstone, A., Berry, U., Nguyen, T. 1995. "There was a long pause: influencing turn-taking behaviour in human-human and human-computer spoken dialogues." *International journal of human computer studies*. 41, 383-411.
- Jones, D. 1980. "Gossip: Notes on women's oral culture." *Women's studies international quarterly* 3 pp. 193 – 198.
- Kendon, A. 1967. "Some functions of gaze-direction in social interaction." *Acta Psychologica* 26 pp. 26-63.
- King, H. 1991. "A telephone reassurance service: A natural support system for the elderly." *Journal of gerontological social work* 16 (1/2) pp. 159 – 177.
- Krogh, H. 1990. *We meet only to part*. Doctoral dissertation. Ann arbor, UMI Dissertation services.

- Lange, U. 1992. "The concept is the message – Some results of the Berlin telephone study." In Moyal, A. and McGuigan, A. (eds.) *Research on domestic telephone use: Proceedings of a CIRCIT-telecom workshop*. 25-26 February 1991 pp. 92-105. Melbourne, Australia: CIRICT.
- Lange, K. 1993. "Some concerns about the future of mobile communications in residential markets." In *Telecommunication: Limits to deregulation*, Christoffersen, M. and Henten, A. (eds.). Amsterdam, IOS press. pp. 197 – 210.
- Ling, R. 1994. "Folk knowledge of pricing and payment for telephone services in Norway: A qualitative analysis." TF R 47/94, Norwegian Telecom Research, Kjeller, Norway
- Ling, R. 1998. "'It's ok to be available': The use of traditional and mobile telephony among Norwegian youth." Presented at the International Sociological Association in Montreal, August 1998.
- Ling, R. and Hareland, M. 1997. "The cost of being social: User expectations of metering unit displays and cordless telephones." In Nordby, K., *Proceedings of the 16th International symposium on human factors in telecommunication*. Pp. 365-379 Oslo, Norway 12-16 May 1997.
- Livingstone, S. 1992. "The meaning of domestic technologies: A personal construct analysis of familial gender relations." In *Consuming technologies: media and information in domestic spaces*. Silverstone, R., Hirsch, E. (eds.) London, Routledge. Pp. 113-130.
- Martin, M. 1991. *'Hello central?': Gender, technology and culture in the formation of telephone systems*. Montreal, McGill-Queens University Press.
- Mason, J. 1989. "Reconstructing the public and the private: The home and marriage in later life." In Allen, G. and Crow, G. (eds.) *Home and family: Creating the domestic sphere*, pp. 102-21. London, Macmillan.
- Matthews, A.M. 1987. "Widowhood as an expectable life event." In Marshall, V.W. (ed.) *Ageing in Canada: Social perspectives*. Pp. 343-366 Toronto, Fitzhenry and Whiteside.
- Moore, G. 1990. "Structural determinants of men's and women's personal networks." *American sociological review*, 55, pp. 726-735.
- Moyal, A. 1989a. "The feminine culture of the telephone: People patterns and policy." *Prometheus* 7 (1) pp. 5-31.
- Moyal, A. 1992a. "The gendered use of the telephone: an Australian case study." *Media culture and society*. 14 pp. 51-72.
- Moyal, A. 1992b. "Women calling! The gendered use of the telephone." *Telegeography*
<http://www.telegeography.com/publications/moyal.html>
- Parsons, T. and Bales, R.F. 1955. *Family, socialization and interactive processes*. Glencoe: Free Press.
- Rakow, L.F. 1988. "Women and the telephone: the gendering of a communications technology." *Technology and women's voices: Keeping in touch*. Kramarae, C. (ed) 207-229.
- Rakow, L.F. 1992. *Gender on the line*. Urbana, University of Illinois.
- Rakow, L.F. and Navarro, V. 1993. "Remote mothering and the parallel shift: Women meet the cellular telephone." *Critical studies in mass communication* 10 144-157.
- Rasmussen, T. 1990. "Telefonen i hverdagslivet II; Bruk" Televerkets Forskningsinstitutt R40/90. Telenor, Kjeller.
- Rasmussen, T. 1997. "Social interaction and the new media: The construction of communicative contexts" *Nordicom-information* (2-3) pp. 1-12.
- Riley, D. 1993. "Network influences on father network in childrearing." In Cochran, M. et al. (eds.) *Extending families: The social networks of parents and their children*. Pp 119 – 130. Cambridge, Cambridge.
- Ross, M and Holmberg, D. 1990. "Recounting the past: Gender difference in the recall of events in the history of a close relationship." In Olsen, J. and Zanna, M. (eds.), *Self-reference processes* pp. 135-152. Hillsdale: Lawrence Erlbaum.

- Rosenthal, C. 1985. "Kinkeeping in the familial division of labor." *Journal of marriage and the family* 47. (November) pp. 965-974.
- Saks, H, Schegloff, E.A., Jefferson, G. 1974. "The simplest systematics for the organization of turntaking for conversations." *Language* 50, (4), pp. 696-735.
- Sattel, J. W. 1976. "The inexpressive male: Tragedy or sexual politics." *Social problems* 23, pp. 469-77.
- Silverstone, R. 1995. "Media, communication, information and the 'revolution' everyday life." In Emmott, S. J. *Information superhighways: Multimedia users and futures*. 61-77. London, Academic Press.
- Smith, T.W. 1990. "Phone home?: An analysis of household telephone ownership." *International journal of public opinion research* 2 (4).
- Synge, J. no date. "Women, not men and frequent telephoners: on telephone use and kin and friendship ties in later life." McMaster University, Hamilton, Ontario. No reference.
- Tannen, D. 1991. *You just don't understand: Men and women in conversation* London, Virago.
- Tiger, V. and Lura, G. 1978. "Inlaws/Outlaws: The language of women." In Buttruff, D. and Epstein, E.L. (eds.) pp. 1-10. Akron, Ohio, Univ of Akron.
- Tinker, A. 1991. "Alarms and telephones in personal response: research from the United Kingdom." In *International journal of technology and aging* 4 (1) pp. 21-25.
- Vestby, G.M. 1996. "Technologies of autonomy?: Parenthood in contemporary "Modern times." In Lie, M and Sørensen, K.E. *Making technologies our own: Domesticating technology into everyday life*. pp. 65 – 90. Oslo, Scandinavian University Press.
- Treichler, P.A. and Kramarae, 1983. "Women's talk in the ivory tower." *Communication quarterly* 31 (2) pp. 118-132.
- Wellman, B. 1992. "Men in networks: Private communities, domestic friendships" In. *Men's friendships*, Nardi, P. (ed) Newbury Park, Sage pp. 74 – 114.
- Wellman, B. and Hall, A. 1986. "Social networks and social support: implications for later life." In *Later life: The social psychology of aging*. Marshall, V.W. (ed.) Beverly Hills, Sage.
- Wellman, B and Wortley, S. 1989. "Brothers' keepers: Situating kinship relations in broader networks of social support." *Sociological perspectives* 32, (3) pp. 273-306.