

WHEN WORK COMES HOME: MAPPING THE WORK-FAMILY INTERFACE

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INTRODUCTION

As telework increasingly becomes a flexible work time option and/or an accepted method of work for knowledge workers across the globe, work-family ramifications become more important for both employer and employee. Formerly telework research mainly focused on organizational efficiency, cost reduction, technological implementation, and environmental and transportation concerns from the perspectives of the teleworker and organization. The work of the early pioneers who spotlighted family aspects (e.g. Christensen, Duxbury, Hill, Huws) along with more recent authors (e.g. Eagan, 2000; Kurland and Bailey, 1999) are now moving towards central stage.

A more global market, however calls for an even more holistic approach, including multi-disciplinary perspectives from the fields of architecture, management, psychology, sociology and gender studies. These aspects should be set in cross-cultural contexts. A picture of the continuum of changes across much of the globe in both the organization of paid and family work and their mutual impacts is needed. The knowledge of universal and country-specific practices could become crucial to the viability of this teleworking option, in particular for multinational, European and North American companies. The conditions (cultural, spatial, psychological, sociological, temporal) under which telework operates are bottom line issues. Can telework serve to enhance both organizational and family goals?

The purpose of the Famitel study was to develop and test a cross-national, multi-disciplinary instrument which, given the statistical limitations of this pilot, could be used in larger cross-national and national studies. This paper thus focuses primarily on the development of the instrument and its future use as a barometer for the impact of the interaction between work and family through teleworking.

The following sections on time usage (Canadian), spatial use (Sweden) and the use of different forms of interviewing (The Netherlands) present the methodology and findings. The conclusion reviews general results and proffers suggestions for larger scale application.

TIME-USE AS BASIS FOR UNDERSTANDING

TELEWORK AND COMPONENTS OF EVERYDAY LIFE

Telework is an organization of work that differs from preceding practices with respect to its location and specific context, the differing opportunities and constraints under which work and other everyday behaviors are carried out, and the nature of interpersonal contact involved. As a consequence, there is reason to believe that the major components and outcomes of teleworkers' everyday behavior – and how they compare to those of conventional workers – are important for a full understanding of telework as a new and increasing phenomenon.

Although telework is newly emergent in its reflection of interactive communications technology, it is not unique as a trend in society in which changes in organization and process have led to potential changes in everyday life and how it is experienced. History is replete with trends that are not fully understood at first, and frequently regarded with apprehension by many. A mission of the social sciences is to secure and assess

files make it possible to examine what respondents do during the days for which they are reporting their time and then to determine by arbitrary criteria which respondents appear to be acting as home-based workers. The criteria we used were: 1) that the day reported was a weekday, 2) that the respondent reported participating in paid work on that day, and 3) that at least an hour was spent doing his or her main job for pay at home. Overtime and “homework” were not counted under the third criterion.

This method produced samples of home-based workers in which the daily mean time devoted to home-based work was well above the one-hour minimum: 250 minutes in Sweden and 272, in Canada. Furthermore, our analyses showed that those home-based workers devoting less than four hours to doing their principal work at home were also putting in significant amounts of time at other work sites, not working part-time. We called them extensive home-based workers. Those home-based workers spending more than four hours working at home largely put in comparatively long workdays there. We called them intensive home-based workers. We compared both types of home-based workers to the much larger number of respondents who fulfilled criteria 1) and 2) but not 3); these *conventional* workers, not doing their main jobs for pay as much as an hour at home, actually did virtually none of their principal employment there. (Michelson, 2000)

While this method provides an ability to identify home-based workers and to analyze the content, extent, and complexion of their days, it suffers many of the drawbacks common to the secondary analysis of pre-existing data sets. The Canadian files in particular do contain much socio-demographic information about the respondents, as well as answers to selected survey questions about their work and personal feelings of time pressure and stress. But the national surveys were not directed particularly to the study of telework, so there is little information about either the characteristics of the work done at home or details of the housing unit. Nonetheless, no two operational definitions of home-based work or telework result in identical estimates of the prevalence of these phenomena in the population. Ours, of 6.7 per cent in Sweden and 12.6 per cent in Canada, were well within the common range for the years involved. (Michelson, 2000)

Analysis of the implications of home-based work on aspects of the everyday routine brought out similar patterns from the two national surveys. For example, a graphic analysis of *when* during the day episodes of work commenced brought out, not surprisingly, that there are *peaks* amongst both kinds of teleworkers and conventional workers in both countries in the morning and afternoons, but that both kinds of teleworker are unique in their evidence of *foothills* of work commenced in the evenings in both countries. Furthermore, the teleworkers cut the day into a greater number of episodes, with more change and variety within the daily round. We were given to expect less time devoted to travel among home-based workers. Although this is shown true in aggregate, though not by much, the extensive home-based workers belie the generalization, travelling extensively, mostly by automobile. The total number of hours home-based workers spend on work and travel means that there is little time left to redistribute to leisure, social activity, and community-based activities, as is often suggested to be the case. Although the home-based workers do spend more time alone, as anticipated, they also spend more time with other family members but not friends and neighbors. Thus, while the intensive home-based workers spend considerable time doing work at home – much more daily work time than shown by the conventional workers – they are not totally isolated. (Michelson, Palm Lindén, and Wikström, 1999; Michelson, 2000)

These data also show that gender is important in understanding home-based work. Among the intensive home-based workers, both men and women named their paid work as by far their most enjoyable activity in the day. (Michelson, 1998) Yet, female home-based workers were found to spend much more time than men in domestic tasks, while the latter devoted much more of the day to their paid work. We had expected to find that men who are at home for long hours would be more likely to undertake domestic tasks, perhaps even to approximate the traditional roles of women in that regard; instead, these gender roles were not only maintained, but enhanced. (Michelson, 2000) In this context, it is perhaps understandable why measures of time pressure are found to vary significantly more by gender than by the extent that people work at home, with women reporting more time pressure regardless of their work situation (Michelson, 1998).

Thus, time-use studies have the potential to shed considerable light on what teleworkers do and what they experience in the course of their everyday lives. Nonetheless, the large-scale national time-use studies not only lack a specific focus on telework and its home setting but sample no more than one person in a household. Therefore, to understand how telework impacts on families having one or more teleworkers, researchers need to take the advantages of the time-use approach and complement them with other germane approaches. In the next section, we shall describe how the time-use approach and subsequent analyses were adapted to be more sensitive to the intersection of telework and family functioning and to other kinds of data pertaining to this subject, as represented in the pilot research of the Famitel research group.

TIME-USE: IN THE FAMITEL MULTINATIONAL PILOT STUDY

The Famitel groups' interest in family dynamics led to the sampling of families with two adult partners, at least one of which was a teleworker who performed as such on the day covered by the time-use protocol.

Both adults were asked to fill out time-use protocols for the day. Obtaining time-use materials from both partners is potentially time-consuming, so we used written questionnaires on which the social contact and location components were pre-coded, with lists of the codes on the protocol.

Not wanting to bias eventual findings by skewing the sample to one or the other gender, an effort was made to study equal numbers of families with male and female teleworkers.

The Famitel group's interest in interactive communications technology led to a column of information for each episode on the extent and nature of use of such devices, if relevant.

An interest in learning of perceived subjective feelings about the contexts of everyday life led to scale values for each episode on the degrees of stress and satisfaction associated with it.

At the start, respondents were showed a page from a hypothetical time-use protocol, so that they would understand the nature and level of detail expected. The interviewers were present while respondents filled it out, so as to be able to answer questions and to exert some quality control over the product.

Due to the objective of obtaining a variety of information about the families and family members interviewed, in part with in-depth qualitative interviewing and observation, research resources were concentrated on fewer families. This had the effect of suggesting that means be made to portray the results of the time-use segment less in detailed statistical tables and more in graphic illustrations of patterns which could relate to the qualitative findings. Tabular presentations of complex substance from small samples are seldom robust. Although graphic presentation of data from small samples should not be unjustifiably reified, it can allow the suggestion of *patterns* which support or refute, with a foundation in objective and/or quantitative data, what may be stated informally by one or more respondents in a qualitative interview or observed by interviewers. Here are emphasized the graphic presentation of analytic patterns generated from the Famitel pilot time-use protocols not only for this reason but also as prototypes of what could and would be generated by expanded studies in the future (even if substantive results might differ once drawn on larger, more representative samples).

Considerable effort by David Crouse, a member of the Canadian team, went into the creation of three-dimensional charts which show through an aggregation of continuous single lines the path through the waking day by individuals in separate envelopes of home space, travel, and external space, involving (as the third dimension) specific places in space (i.e. at home and externally) and modes of transportation. (Michelson, Crouse and Stalker, 2001, and forthcoming). This is a fully empirical application of the types of three-dimensional graphs pioneered by the Swedish time-geographer, Tortsten Hägerstrand (1970), but presented originally only as conceptual illustrations. The comparison, for example, of six Canadian teleworkers with their partners (see Figure 2¹), showed very clearly the more intricate juxtaposition of different activities in the time use of teleworkers, compared to their non-teleworking partners. Though more likely to be at home, the activities of the teleworkers involved use of many different locations within the home, not simply the specified workplace. This pattern was a factual underpinning for the clear concern shown by these telecommuting families for the design of their entire homes, not their office space alone. Changing the vantage point facilitates observation of different aspects.

Nonetheless, what depicts a clear pattern and comparison when based on six cases, becomes more cluttered and unclear when including the daily time-lines of many more respondents. we thus found it desirable to proceed to graphic forms of presenting time-use results that could reflect unrestricted sample sizes through the incorporation of means calculated from the individual values.

Figure 3 compares for each hour between 8 a.m. and 10 p.m. the mean number of minutes spent by teleworkers and their partners engaged in paid work by pilot study respondents in Canada, Sweden and the Netherlands - the first three teams to finalize their data and forward them to the Canadian analysts. Despite their juxtaposition of work with other activities, the teleworkers spent more time actually working than did the conventional workers. This is consistent with longstanding findings about "water-cooler culture" in conventional work situations from time-use studies. (c.f. Szalai, 1973; Robinson and Godbey, 1997) and with recent observations about the high productivity of teleworkers.

¹Figures 2-5 are shown on pages 13-14 and will be available at the presentation.

Figure 4 indicates the utility of gaining data from time-use protocols on the use of electronic equipment. In the present case, a distinction is made between use of ICT equipment more generally and computers specifically - and between teleworkers and partners from the pilot respondents in three nations. The question pertaining to each episode of daily behavior concerning use of equipment can certainly be changed to reflect the data need or interest of the specific study, as long as it does not become so complex as to be unwieldy in the flow of protocol. The comparison between teleworker and partner is but illustrative of the wide range of possible analytic comparisons.

Figure 5 is a comparison of the mean stress profile of these same teleworkers and partners for each 2 hour segment throughout the 8 a.m.-10 p.m./ time period. This chart of teleworkers and *their own* partners produces a different pattern that reflected in the previously-discussed statistical comparison of teleworkers and unrelated conventional workers. Since the time-use respondents in the Famitel study are from the same families, we see in familial perspective that the teleworkers report a higher level of stress than their partners do at every moment of the day, until its conclusion. By far the most stressful times of the day for them are in the mid to late afternoon, just before or as the arrival of other family members joins paid work on their horizon. For the partners, the stress levels at the start and the end of the day are higher than during most of the time spent in their conventional work situations. It would be very interesting to see if these differences continue in larger, representative samples which also include other family members.

We do not argue that these findings to date from the Famitel data should be taken as definitive results to be projected onto any population. We suggest, however, that the pilot demonstrates the utility of time-use data in shedding light on many valuable components in the telework experience, particularly as we have adapted this approach for the telework context. There are lessons for others seeking to understand more about their own interests in telework and its implications.

THE SPATIALITY OF WORKING IN THE HOME

ON THE LEVEL OF THE DWELLING

The introduction of telework in the homes of people also means changing spatial relations of everyday life that are normally taken for granted. The spatial aspects are pertinent to telework at least on three levels:

- *on the regional level*, where teleworking may affect not only people's commuting, other travel patterns and choice of where to live, but also (in the long run) influence the allocation of housing, workplaces and services in the region,
- *on the neighborhood level*, where *people's day-to-day presence, encounters with neighbours, use of local facilities, participation in the local community etc. may be affected, and, finally,*
- *on the level of the dwelling.*

Whereas time-use protocols employed within the pilot study trace daily trajectories through all three-levels, the in-depth spatial analysis primarily concerns *the uses of the home interior* (and - whenever relevant - the close neighbourhood) for teleworking. It also concerns *the re-negotiation of time/space boundaries* (Ahrentzen 1990) between activities related to household chores, leisure and paid work.

The in-depth spatial analyses of teleworkers homes are based upon their own stories as told in interviews and are also supported by their time-use diaries. However, they also depend upon information specifically describing the uses and arrangements of space. Among the methods available to collect such data are:

- Making sketches of the design of the dwelling, if possible with support of a drawing of the house
- Making detailed sketches of the workspace, including furniture and work equipment
- Taking photos of exterior, interior and particularly (covering all four walls) the place(s) of work
- Collecting basic information about the dwelling, i.e. size, type of house, ownership, type of neighbourhood

“To be (at all) is to be in (some) place” Edward Casey writes, referring to Archytas of Tarentum

(Casey,1997). *The concept of place* is crucial for the understanding of teleworking: place as demarcated by architecture, defined by cultural patterns of space use and continuously redefined in people's daily doings.

Spatial issues are often neglected or understated by the social sciences (Giddens 1984). However, teleworking is one field where the researcher is always reminded of how people's interactions and experiences always occur in places. In the national samples of the Famitel pilot study, earlier Swedish experiences were repeated and corroborated (Wikström & al 1998). First of all, the presence of the teleworker, busy with paid work activities in a surrounding defined by domesticity, leisure and family life, is basically a place phenomenon. This presence has an important temporal aspect: when does it occur and how is it related to the times and doings of other family members? The teleworkers physical/visual presence does not necessarily imply his or her availability, and this in some cases engendered conflicts and tensions with spouse or children. Secondly, the size and design of the dwelling are important resources when developing and negotiating new routines. Within the dwelling, distances, subdivisions, connections, doors and furniture are employed to manage boundaries between work and home. Here, architecture is taken into use in a practical as well as symbolic sense: the closed door, for instance, not only hinders the view and stops some of the noise, it also tells family members that mum or dad is working. Thirdly, the context of the home is important. Living in the city is something different from living in a suburb or in the countryside, not only in terms of commercial and cultural facilities available but also because of the differences in lifestyles, neighbourhood spirit and local culture.

The dwelling is traditionally the physical framework for family life. It offers opportunities and sets limits for co-operation and social intercourse, but also for working in peace and quiet. The design of the housing makes up the interface between the family and the outside world: it affects how people interact or coincide with neighbours. For most teleworkers the home contains a quite limited space for work activities within a domestic setting. The dwelling offers certain spatial conditions for the encounter between the world of work and family life. The two might be carefully separated in the layout or floating together in a more flexible situation.

RESEARCH EXPERIENCES FOR DEVELOPING A SPATIAL METHODOLOGY

In a Swedish study, the ways of arranging the teleworkers' workplaces were represented by four metaphors (Wikström & al 1998). *A place in the sun* means being mobile within the dwelling, to choose the place of work according to where you feel most comfortable at the moment. This demands mobile equipment like a mobile or cordless phone and a laptop computer. The second metaphor, *at the hub of events*, refers to working in the centre of the dwelling, for example in the kitchen. The teleworker thus had to adapt the work situation to domestic life - or vice versa. The third way to arrange the teleworkers workplace was called *hiding in the corner*, using a part of the living room or bedroom for work purposes. This also implies a close integration of professional life into home routines. The last way was called *in splendid isolation*, which means working in a separate work room, a regular home office, for instance in the basement, on the top floor or in the garage, at some distance from the family

Those different ways of establishing a workplace in the dwelling were also found in the national samples of the Famitel pilot study, and seem to depend upon e.g. space available, cultural traditions and gender relations. In the Swedish pilot a new solution appeared, apart from those mentioned above. One of the teleworkers lived in a collective house, i.e., a house with private flats and common facilities and rooms. For meetings with clients the teleworker made use of the semi-private space in the house and thus had a sort of *split workspace*. In a general sense, multi-purpose common localities in the neighborhood could play an important role for teleworkers in crowded or lively homes.

What all these patterns of space use have in common is that they involve social and cultural practices occurring in space. But this is just what is implied by the concept of place! When studying and interpreting phenomena of telework, spatiality cannot be taken as an aspect *per se*. It must be treated as intrinsic to those phenomena. The pilot study offered a range of examples of the pertinence of place in the experiences of teleworkers and their families.

PLACE ISSUES OF THE FAMITEL PILOT STUDY

We would like to give a few examples of findings from the pilot to illustrate the importance of involving spatial dimensions in the study to come. The examples represent the kinds of questions and problems that the pilot study was designed to discover.

Letting work take over? Some of the interviewees experienced problems with delimiting their telework activities. Being self-employed obviously makes it difficult to say "no" to job offers and thus to control the length of the workday, but employed teleworkers also had similar problems. However, the ability to set limits

for the amount of work carried out at home may also depend upon other factors. How important is for example the design of the house in this context? In a couple of the United Kingdom interviews, the use of the home architecture of the dwelling as one of the tools for managing boundaries between home and work was discussed, e.g. the use of doors, stairs and distances between the workroom and living room or kitchen. It is important for interviewers to pursue such questions, but interview transcriptions are seldom fully intelligible without good sketches and photos. The size and layout at large of the dwelling are almost self-evident as preconditions here, but still important to analyse within the full context. Here the pilot study suggests great differences within the countries. In Canada, the Netherlands and Sweden most interviewed teleworkers lived in spacious, detached houses, duplexes or row houses while teleworkers in other countries e.g., Eastern Europe or Asia, may only have small flats available.

Gendered work practices. Some of the cases hint at gender-related patterns of arranging and conducting paid work in the home. Gender roles are known to differ between the countries involved and were in some cases expressed in the way women and men respectively appropriate dwelling space for work purposes. How is this done in the countries involved and what are the arguments and cultural patterns behind? What are the practical considerations and the symbolic issues of conducting work “in the hub of events” or “in splendid isolation”? A combination of interviews, diaries and layout sketches must be employed to be able to describe the (time/space) strategies of men and women in different cultures and under varying circumstances.

Home as a workplace or working in the home? According to the British study, interviews with children appear to be an efficient way to find out in what ways teleworking affects the atmosphere of the home. Children, who tell about always having to play silently, also tell us about homes that are dominated by paid work. The lack of spatial seclusion and/or the necessity to combine paid work with childcare is a question of quality of life. But the “workplace or home” issue is also reflected in the ways teleworkers and their partners furnish and decorate their homes. The Canadian photos often show offices with large, ergonomically designed “office type” chairs and efficient storage, while the Portuguese pictures display dens with a homely atmosphere but lacking visible ergonomic ambitions. Some of the Dutch homes displayed a sparse modernism which seemed to blur the boundary between home and work. But does home lose its sense of home when used for teleworking? In the Canadian study, one person reports working longer hours and more efficiently at home, because at the office she gets homesick. Some interviewees of the Swedish study stated that teleworking makes home more a Home, while others had the opposite experience. The methodological conclusion must be that a wide range of methods should be used to be able to analyse how the sense of home is affected by teleworking.

METHODOLOGICAL EXPERIENCES AND PROBLEMS

With issues like those, how should the methodological questions concerning the study of home as a place for paid work be dealt with? The methods tested during the pilot study had certain benefits, but also weaknesses.

Researchers from a number of disciplines will carry out the future cross-national study. The composition of the research group was definitely a strength when the researchers got together to share experiences and ideas, but appeared to be a problem during the pilot study, when sociologists, psychologists and architects were separated, but still were supposed to conduct multidisciplinary research. More frequent group meetings and/or sharing of work in progress could be of benefit here.

For instance, from an architect’s point of view, using graphical representations such as photos, drawings and sketches is mere routine. But all researchers are not trained in working with images so that all interviews did not reflect the awareness of teleworking as a set of practices that occur in concrete spaces. . On the other hand, sociologists and psychologists are normally experienced in conducting interviews. Some researchers develop their own special techniques that may be difficult to adopt by others. The future study would surely benefit from closer co-operation regarding multidisciplinary methods as applied by each participant.

Making accurate sketches of the teleworkers’ homes and workplaces apparently was difficult for non-architect colleagues. More practice and clearer instructions are necessary to reach an acceptable level of precision. A certain level of standardization is necessary. Alternatively architect students or others that are already trained in making hand-drawn sketches may be engaged. Working in pairs, letting one person be responsible for the interview and the other t for the sketches and photos, seems to be a good idea. Sufficient time must be allotted for sketching and photographing. Also it is worthwhile to make a substantial effort to obtain the architect’s drawings of the buildings in question. If available, layout drawings save researchers a considerable work when making sketches of the dwelling.

Photographs provide important information about the teleworkers’ environments. More explicit

instructions seem to be necessary to make sure that all interesting aspects are covered. A list of photo points to cover would help researchers not to miss important views. Photos tell a lot about the lifestyle of the teleworker's family and offer vital supplementary information about technical equipment, furniture, housing design and neighborhood.

THE WORK/FAMILY INTERFACE IN TELEWORKER/PARTNER INTERVIEW

BACKGROUND INFORMATION

The contours of the pilot study were developed during Famitel's annual seminar meeting in Manchester (UK) in 1999. These were²: every team studies six teleworkers and their partners; they (teleworker and partner) both fill out a time-diary (1 work-day); sketches and pictures of the home, interviews covering questions such as: (additional) background information, work and life experiences, education, motivation for teleworking, initial phase of telework and adjustments made at home, interaction between telework and family functioning, relationships with colleagues, chefs, employer etc., expectations for the future etc.

Each participating team followed the general set-up within the constrictions of their situation and made adaptations to the questions as needed to match their specific cultural situation.

Result was quite some variation in the way couples were selected (snowball, internet ad, organizational referrals) and how the data were collected. In most countries this was done in two rounds. In the first round the diaries were completed, sketches and pictures made. In the second round the interviews were held, either with both the teleworker and partner at the same time or with both apart. Most teams collected some essential background data before couples were included in their sample.

The following table presents some features of the country samples.

Overview Teleworkers and Partners for Five Countries

Country	1=teleworker 2=partner	Age Range	F/M	Children			Employment status partners
				no children	total number	age range	
Canada	1	26-43	3F / 3M	?	3	3-6	5 employed / 1 student
	2	24-54	3M / 3F	?			
Netherlands	1	35-51	3F / 3M	1	9	>1-19	16 employed
	2	35-46	3M / 3F	1			
Portugal	1	29-44	3F / 2M	1	6	?	5 employed
	2	32-42	2M / 3F	1			
Sweden	1	45-63	5F / 1M	1	7	4-26	4 employed / 1 retired / 1 no partner
	2	50-70	4M / 1F	1	6		
Gr. Britain	1	28-66	2F / 4M	?	11	6-21	?
	2	28-69	4M / 2F	?			

The selection of the sample was not only different in respect to method (snowball, neighbors, organizational referrals etc) but also in focus. For example the Dutch team tried to involve teleworkers in large companies through organizational referrals, the Portuguese team chose more self-employed or free-lance teleworkers, and the Swedish team chose social workers and government employees. These differences could have influenced the results, but the trends we found are generally the same.

THE INTERACTION BETWEEN WORK AN FAMILY THROUGH TELEWORKING

The Dutch team were especially interested in the interaction between work and family through teleworking. The teleworker is part of two organizational structures, the organization he/she works for and

² The criteria are more detailed, but that would take too much space.

the family unit in which he/she lives. These structures are interchangeable in regard to time and place. This new situation offers opportunities and advantages as well as limitations and problems for *both* organizations.

Organizations may have to develop new ways of tracking what their teleworkers are doing outside the office. Telework can save office space, reduce time lost in commuting and assist them to serve clients more efficiently. To accomplish this, companies need to provide the teleworker with a number of essential tools.

Teleworkers may have more autonomy in structuring their work, are better able to combine work with family obligations. Teleworkers may have trouble to keep track of what is going on in the company, lose less time in travel but have to create office-space at home. This is just name a number of changes which are occurring and already documented by other research. Our concern in the pilot was how the interaction between the two organizations took form and what were the consequences.

General outcomes were that most teleworkers and the majority of their partners were positive on teleworking in their situation, but not unconditionally so. Several teleworkers saw it as a temporary solution, for problems at work and/or at home. Women (but also some of their partners) saw it as a solution to combine work and family needs when their children were small. Others (men and women) worked in organizations which were no longer able to provide sufficient workplaces for all their employees.. Other reasons included the loss of time and energy commuting to the office or the need for a transition period to set up their own business. Some partners (mainly women) were pleased that their workaholic partners were teleworking as it gave them and their children more chances to see more of the man-in-the-house and to attract their attention.

Most teleworkers and many of their partners see two documented dangers in teleworking. First, teleworking absorbs all available time and secondly, it requires discipline to work regularly and to stop work. Teleworking allows the working day to be spread out to add family and leisure periods. In extending the hours, however, the teleworker often loses track of work time as he/she misses a secretary as timekeeper. On the home front some spouses assumed that role but nevertheless the lure of technological tools often leads the teleworker to finish *just* one more thing.

Most teleworkers work all over the house. For some this is a necessity because there is no place where they can withdraw, for others it is out of convenience or even principle. In general the men more often have a separate office in the house and/or claim that the family should accommodate to his work (dominating the phone access, asking for silence, bringing clients or colleagues home, expecting the partner to wait on "the guests" etc). Women are more likely to have to find a place where the needs of the family can be accommodated at the same time or to prefer a place from which they can meet family needs. Still there are male teleworkers who prefer to work in the kitchen or family room and male partners who feel crowded in because their teleworking wife usurps the house and invades privacy. There are female teleworkers who have separate offices or feel troubled because the family prevents their working.

In general female teleworkers have more difficulty to switch from the family to their teleworking. While male teleworkers have more often problems to switch from teleworking to the family.

Many teleworkers have experienced that others (family and friends; colleagues and clients) think that they are not really working when they are working at home. Some teleworkers make sure that outside people don't know that they are teleworking. Others mention that there is no problems as others (neighbors, friends, colleagues) are also teleworking.

Teleworking is not only seen as a chance to combine work with children, but also as a chance to combine work with pets.

The definitions of telework proffered by the teleworkers and their partners themselves illustrated the evolution of telework as a recognized manner of working and as part of organizational change spurred by the necessity of flexibility in a global market. There was agreement in relation to the key elements of time and location. The teleworkers themselves saw teleworking as a positive development with one respondent stating that "telework is working where your heart is."

PARTICIPANT OBSERVATION, THE LIFE AND PROFESSIONAL CAREER OF THE COUPLE

The Dutch team met twice with the couples . Both the teleworker and partner participated each time.

The first time one interviewer began with an introduction and some background questions. She sat

down with the couple when they filled out the time-diaries answered questions and listened to their conversation. The other interviewer made sketches of the different rooms and took pictures. Both observed what was going on and said. For example: when a child asks for attention how do the parents react?. Following the completion of the time-diaries, there was some conversation. Then the couple was informed about the intended second round. Their cooperation was requested, but no details about the second visit were given.

The second time both the teleworker and partner were interviewed at the same time but in different locations within the house. These interviews were recorded. The interview was not formally structured but five themes had to be covered, information on designated topics had to be collected and also some specific questions were asked, but always where they fit in the conversation.

The themes addressed were: early life expectations regarding work, marriage and family; employment career, life career, telework itself, the teleworker/partner's actual situation now and in the future. The last area considered organizational issues such as productivity, collegiality, relations with managers and secretaries. In conclusion the respondents were queried regarding the potential of telecommuting to create extra time, their opinion concerning developments in the coming years and what advice they would give to a beginning teleworker.

The method of the double interviewing offered an additional check on data and an opportunity to clarify differences in the perception of developments. The different impacts of the changed home situation on teleworker and partner were thus underlined. Gender as mediating influence played an important role in given situations.

From the partner's perspective, two topics frequently cited in the different countries were (1) physical presence and lack of dependability in regard to family needs and (2) longer hours. Physical presence is no guarantee of actual presence as most teleworkers were so absorbed in their work that even though, they were there, they were not there. This was a point of irritation for partners who were at home at the same time, even though the spouse was pleased that the partner was home. As far as dependability for family matters, "there is only one thing you can count on and that is that you can't count on him." Unexpected work demands could override family priorities at a minute's notice. For dual earner families with children, this could constitute a crisis.

All teams found conflicts between teleworker and partner as result of teleworking, or conflicts between the teleworker and her/his family, but through interviewing both of them separately and simultaneously, it was possible to get more information on how and why the problems arise. This includes insight into whether the problems have to do with teleworking per se, with the conditions set and offered by the employer, with the conditions in the home, the structure of the family, personal characteristics etc. This information opens the way to predict the success of the teleworking and / or to devise ways to enlarge the chances for success.

Gaining the cooperation of the respondents, individually and as a couple, turned out to be very important. Cooperation is more than just agreeing to participate. It means that the respondents get involved, start to reflect on their own situation and are willing to enter into an interaction with the interviewer. Having two rounds assisted here. The first round, besides getting a lot of information that made the interviews during the second round really valuable, created a secure atmosphere for further cooperation. The triangulation of the time-use protocol, spatial analysis and follow-up interviews provided the interviewers with a far better grip of the situation in the home of the couple, i.e., a better understanding of the conditions under which telework operates. Moreover the answers given by the respondents made more sense and could be more readily comprehended offering a clearer picture for later cross-cultural comparison.

The addition of extra themes turned out to be very important. The expectations and attitudes of the respondents, led to relevant information on their past and gave much insight into the why and how of the present situation. Starting from the teenage period, it was natural to proceed with their career and the interaction of the development of their relation and start of a family with their careers as persons and as couple. And this again gave more information to predict the future in respect to teleworking, work and career.

CHILDREN

In the pilot the teams of the United Kingdom and Sweden made preliminary interviews of a few children. There was not enough time to work out proper procedures to get the perspective of the children. both teams are convinced that children should be involved in the future.

CONCLUSION

The purpose of the Famitel pilot was to develop a cross-national, multi-disciplinary instrument which could be used in a larger cross-national study. The methodology employed combined time study diaries, spatial usage and qualitative interviews. This paper has presented information gained in regard to five aspects of the pilot.:

- the methodology,
- the teleworker as part of a functioning family unit,
- the interaction of work and family,
- the importance of the dwelling and its spatial use,
- the significance of the stress/satisfaction factor.

Although the instrument we developed is still incomplete, its prospects are promising. It still needs refining, but then we will have an instrument to use both in single country studies and in cross-cultural comparative research. The finished instrument will provide a means to better comprehend the interrelationships among housing, technology, family (composition, demands, behavioral patterns and values) and office (groups, demands, procedures and standards) which come into play when telework is introduced. This instrument will also be especially useful for large companies with branches in different regions or countries.

- In regard to methodology we learned once more how important multi-disciplinary and multi-cultural cooperation is in constructing such an instrument. It is essential that what we need to know and measure be defined in detail, that this is supported by full consensus, and set down in clear guidelines and criteria. This, however, does not imply that everywhere the same items for measurement or the same phrasing of questions will or can be used.

- In regard to the teleworker as part of a functioning family unit, the results demonstrated that for teleworking to be a success for both companies and employees, it is of essence that this unit be recognized and integrated into HR policy. Furthermore it developed that it is indispensable to know some relevant facts about the life stories of the teleworker and the partner as well as the life story of the family unit they started. The experience of children as part of the family unit still needs to be integrated into the instrument.

- In regard to the interaction of work and family, points where the organization of work in both employment and family spheres mesh and conflict are noticeable. The mechanisms involved need to be uncovered. This is important as most couples had problems and conflicts, but at the same time both partner and teleworker found it difficult to put this into words. In general couples rated teleworking positively in their own situation in comparison to their former situation or to current possible alternatives

- In regard to the importance of the dwelling and spatial use when a family member is teleworking, the dynamics of the spatial use was established as an important factor to insure that teleworking will be profitable for both employer and employee. Its impact is far greater than providing a "home office" for the teleworker within the home, or paying attention to the impact of teleworking on transportation etc. Here a multi-disciplinary approach proved specifically relevant for the instrument and rewarding.

- In regard to the significance of the stress / satisfaction factor, at the beginning there was some doubt concerning the possibility of a valid measurement. Now it is clear that it will be a very viable part of the instrument. Moreover it is also a good example of the importance of a multi-cultural approach. Although, stress is an important factor in every culture and society, it appears that *the* measurement of stress is highly dependent on differences in culture and in countries.

Given the space limitations of this paper, we conclude with several remarks on the general results of the study in regard to two aspects – the multidisciplinary perspective and the cross-cultural comparison.

In regard to the *multidisciplinary aspects*, the pilot:

* corroborated earlier research findings, but by placing them in a more holistic context interrelated diverse elements (e.g., while the office context mandates homogeneous standards, telework spotlights the diversity of the individual teleworkers' approaches);

* provided a voice for the partners (and in some cases, the children) regarding the integration of telework into their family lives;

* demonstrated the dynamics of the spatial use of the home as office as it changed locations at different work periods,

* signaled changes in attitude and organizational processes needed in both company and home situations,

* suggested issues for future research and scenario development (e.g., voluntary and non-voluntary telework, different groups of teleworkers and partners, age cohorts, and the impact of the office culture on the home environment).

Cross-cultural comparison offers an outsider's perspective which can spark new insights in another culture and provide a second perspective on one's own cultural situation. The instrument developed allows researchers to rephrase questions in their own national context and eliminate questions that cannot or should not be posed in their specific culture.

The pilot discovered universal issues in the principal countries participating (Canada, England, The Netherlands, Portugal and Sweden). These were also shared in the partial documentation from the Czech Republic. At the same time several problems of getting information from the former East European countries were encountered, i.e., the current stages of the introduction of telework in SMEs and multinational organizations, funding and confidentiality issues.

Another problem which arose in the pilot was a factor that researchers in English-speaking countries often underestimate, namely, the extra time needed to adapt and translate materials into non-English languages, followed by the necessity to translate and edit the completed protocols and interviews into English. This is an important point to take into account in project scheduling and financing.

A second problem is caused by time zones in cross-national research. Urgent discussions cannot always take place in real time, as for example, a Swedish researcher's problem might arise while his Canadian colleague sleeps. E-mail and faxes appear to benefit the advance time zones in those cases.

Technology posed a third practical problem, similar to the introductory phase of teleworking programs in general. A cross-national study requires standardization of work processing, spreadsheet and graphics software. We solved a number of the glitches with faxes and hard copies but that is an area which could be resolved better in the planning stage.

As the global market expands, organizations have a greater need to comprehend the interrelationships among housing, technology, family (composition, demands, behavioral patterns and values) and the office (groups, demands, procedures and standards) which come into play when telework is introduced. While the pilot was too small to be statistically significant, it did fulfill its purpose in establishing a viable base for further study. Such a cross-cultural instrument could assist both families and organizations to function better in both spheres.

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Charts – Figures 2-5

Figure 2

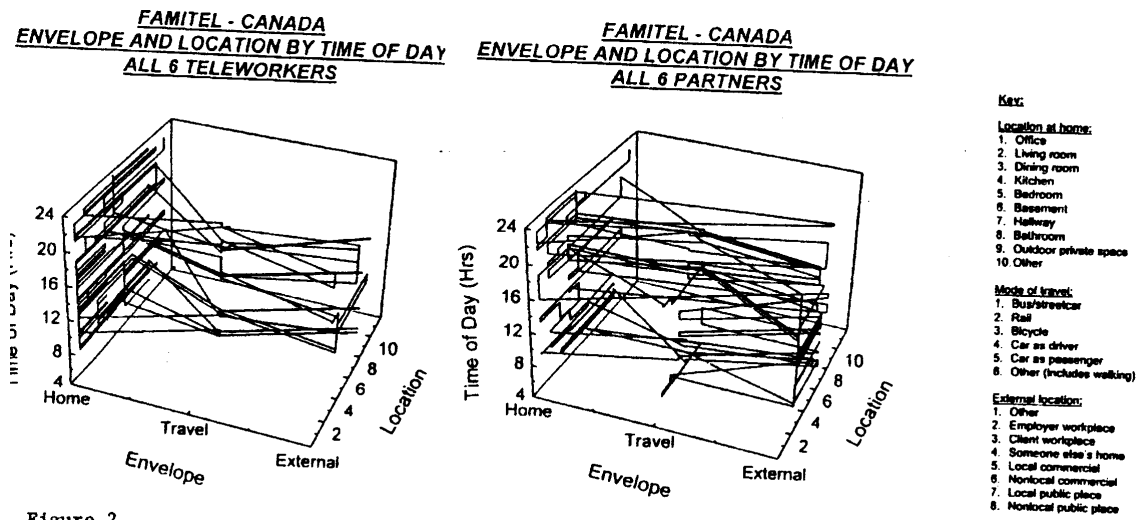


Figure 2.

Figure 3

**FAMITEL - CANADA, SWEDEN & THE NETHERLANDS
"TYPICAL DAY" - FUNCTION BREAKDOWN
THE INTERNATIONAL TELEWORKER & PARTNER - PAID WORK**

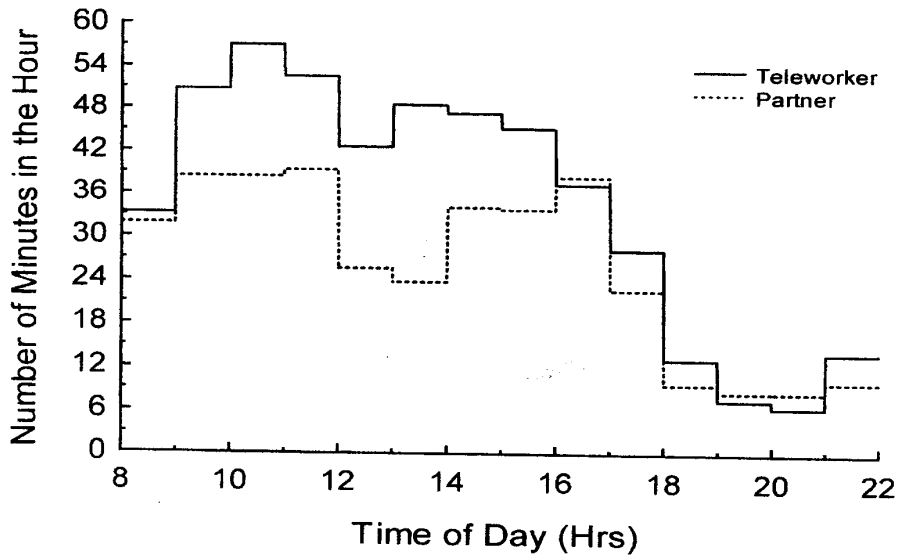


Figure 3

Figure 4

FAMITEL - CANADA, SWEDEN & THE NETHERLANDS
ICT AND COMPUTER USE BY PERCENT OF TIME REPORTED
TELEWORKERS VS PARTNERS

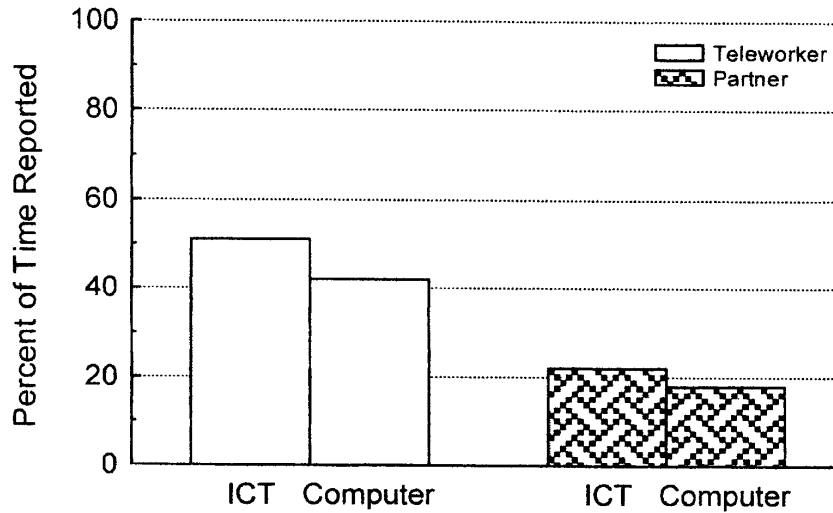


Figure 4

Figure 5

FAMITEL - CANADA, SWEDEN & THE NETHERLANDS
CONSOLIDATED STRESS PROFILE

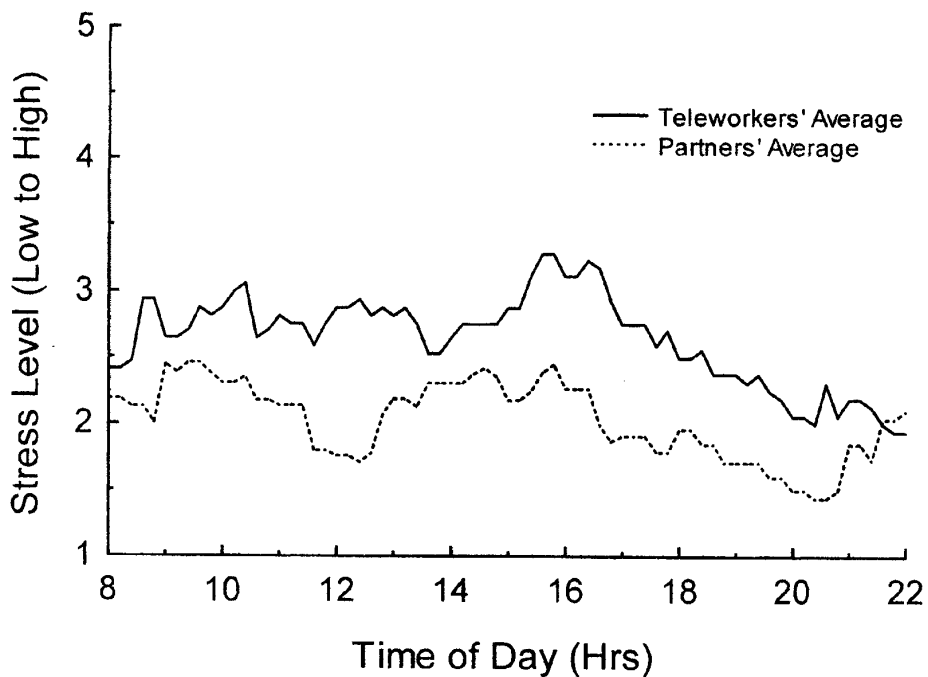


Figure 5