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Introduction

Background and aim of the thesis

The aim of this thesis is to shed light on the relationships, interactions, and boundaries of two central life domains: work and non-work. The relationship between work and non-work is a crucial topic for several reasons. Given the increase in women’s participation in the labor force, the diversity of family constellations, and many men’s increased participation in childcare, as well as recent advancements in technology, this topic is especially relevant today. Despite a growing body of research, with relatively old roots, the relationship between work and non-work still involves many unanswered questions. The overall aim of this thesis is therefore to study the nature of the relationship and interaction between work and non-work. To investigate this, home-based telework has been selected as the more immediate subject of study, since this form of work arrangement brings together the two domains of work and non-work and creates a working arrangement without traditional temporal and spatial boundaries. Home-based telework, accordingly, provides a fitting basis from which to explore the concerns of each domain and the processes of the interaction involved.

Research on home-based telework is a growing field, but as of yet it is conceptually muddled and under-researched. In order to better understand the boundaryless character of these modern work arrangements, it is of great importance to study how individuals handle coordinating the demands of paid employment and domestic life. This entails not only investigating the phenomenon of boundaries per se, but also looking at the process whereby boundaries are establishing as well as at the outcomes that are emerging from the blurring of traditional boundaries in time and space. Accordingly, a further aim of the present thesis is to analyze the role of boundaries in the relationship between work and non-work. Because of the above-mentioned developments within working life and non-work domains (family and leisure), many individuals experience increased demands. However, instead of only looking at the conflicts and implicit relationships with stress and unhealthiness, this investigation also considers the possible positive mutual influences (facilitators) of the domains. The general approach of this thesis is thus to link work and non-work relationships to the significance of the home, restoration, stress, coping, and health. In this, a further aim will be to see how boundaries, conflict versus facilitation, and the mental and physical aspects of work activities figure in the context of home-based telework.
In sum, three issues will be discussed and analyzed:

- the issue of conflict versus facilitation as related to the segmentation and integration of work and non-work domains
- the nature and role of boundaries in work and non-work relationships
- the physical and mental aspects of work activities within both domains

Before analyzing the specific features of home-based telework, some of the developments that appear to be of relevance for the relationship between work and non-work from a boundary perspective, as related to the physical and mental activities involved in work activities, will be presented in a short historical review. This is followed by a theoretical review of the literature on the relation between work and non-work, the implication of role theory and social roles, and boundary theory.

**A historical review – the integration and segregation of work and non-work**

In the 18th and 19th centuries, Sweden (as most western countries) was an agricultural society. In providing for their own family, work took place in and around the household and often required that all members participated. The work and non-work domains were highly intertwined (Zijlstra & Cropley, 2006; Wharton, 2006). The few boundaries that existed were often shaped by nature, for example, when the harvest had to be taken in before a rain storm, or when outside work was limited to the hours of daylight (cf. Micheletti, 1990; Stenbeck, 1983). Overall, there was no clear separation between the work and non-work domains. Work activities were predominantly physical in nature and the boundaries brought on by nature gave a certain (natural) rhythm of work and restoration.

In the beginning of the 20th century and especially in connection with industrialization, several important changes emerged that led to a separation between the work and non-work spheres. The Weberian separation of the public and the private was part of the establishing of 'rational-legal authority' as the basis for the efficient and fair functioning of organizations and society as opposed to traditional or charismatic authority. In this, the private sphere was seen as a source of irrational or unfair practice. While the work domain involved the fulfillment of material needs, the family domain was the place for social, emotional, and even altruistic needs (cf. Gardiner, 1997). Work became the public realm of wage labor,
and non-work/home became the private realm (Nippert-Eng, 1996). The domains became more or less separated between two individuals, with the man mainly dealing with the paid work domain and the woman dealing with the unpaid work domain, household and family. Men were seen as the ideal workers and tended to be recruited for most jobs. In those areas where women were recruited, such as in the emerging range of office jobs or in the home-based sewing industry, an explicit gender rationale persisted, which sought to utilize feminine skills derived from the private sphere (Davies, 1979).

In conjunction with this, the very organization of work was changing in fundamental ways. As the geographical/spatial location of work shifted to the factories, the work process became highly controlled in space and time (Braverman, 1977, Stenbeck, 1983). Following the principles of scientific management, as inspired by F.W. Taylor, the work process was modified so as to put a concentration of the “brain work” in the hands of management (expressed in work rules), and the “brawn work” in the hands of workers (Thompson, 1992). Although these ideas were specifically created for use with the work process of the workplace and did not overtly concern the non-work domain, the role of the separation between thinking (mental activity), and doing (physical activity) became an important issue, which will be reapproached later in this thesis.

While Taylorism remained at the core of the basic template for work design, the post-Second World War era brought with it a new emphasis on policies that could counter or offset some of its effects on work and workers. The Human Relations School later emerged, putting individual’s motives, goals and aspirations at the center of the debate, claiming that organizational success depended on the employees’ motivation and interpersonal relationships (Katz & Kahn, 1978). Social scientists began to advocate movements towards teamwork, job rotation, job enrichment and other methods that were meant to bring greater motivation into the work process of many occupations. Considerable debate has taken place about the content, extent and success of such developments. Theorists of the labor process school have thoroughly discussed and criticized such policies on the grounds that the basic dynamics of the capitalist employment relationship, with its divergent interests, place considerable constraints on humanistic policies in the workplace (Braverman, 1977). Nevertheless, many are agreed that significant changes have taken place in the way that many occupations have come to utilize individuals’ mental and psychological resources. Thompson (2003) describes this as a qualitative intensification of labor, which focuses on having continual access to the tacit knowledge of employees while attempting to mobilize their extra-functional capacities (Flecker & Hofbauer, 1998).

In sum, the described developments brought about changes in the character of work demands and its related boundaries, which has, in turn, had an influence on
the relationship between work and non-work. Whereas work during agrarian times was predominantly physical (with whole task completion), and the work process of industries was cut off into small sequences (with no whole task completion), the work character of modern jobs is rather mental in nature. The partial break with Taylorism, through quality initiatives, teamwork and other policies, brought with it the potential for greater motivation and engagement from workers. This development was further accompanied by challenges to the traditional Weberian separation of the public and the private, brought on by the demands of corporate culture, the emergence of emotional labor, and the manifestation of employee private identities at work. Despite these changes having had some positive effects on employees, such as greater motivation and satisfaction, they have also entailed increased demands at the workplace, and become a source of work intensification and strain, resulting in, for example, employees having difficulties detaching themselves from work (Sonnentag, 2001). Consequently, the partial breakdown of these old separations has made it harder to maintain boundaries and, thereby, become a potential source of stress. Many occupations today require that employees have diverse skills, a high level of mental focus and engagement, and that they be responsible for holding deadlines (this last requirement being especially typical of project work). As a consequence, many people work longer hours in order to manage these increasing demands of work (Crouch, 1999).

In addition to the developments described above, work gradually took on a more central role in western society. Influences from the Puritan/Protestant work ethic (cf. Thompson, 1967), together with the status and economical wealth that accompanied having employment, are some of the aspects that influenced a change in how work was viewed and contributed to a work centralistic view (Karlsson, 1983; Primeau, 1995). Research on work centrality has been able to highlight the crucial role that work can play in individuals’ lives (Eriksson, 1998; MOW International Research Team, 1987). The centralistic view of work has influenced how the non-work domain is considered and how large a place in life a number of its aspects should occupy – especially in respect to gender issues (Gardiner, 1997), and views on family, leisure, and restoration (Primeau, 1995; Zijlstra & Cropley, 2006). A growing number of studies in work and organizational psychology and public health research have shown that ill-health is increasing within the working population. Recent research has emphasized the role of restoration in regard to matters of stress and health (Sonnentag, 2001). Less has been investigated about the positive influences, facilitators, and enrichment that work can bring (Halpern & Murphy, 2002; Jones, Burke & Westman, 2006).

Over the past two decades, the topic of work-life balance has received increased interest and publicity. The increased interest is due to a number of reasons. An important one of which relates to the increasing participation of women in the labor
force. Technological advancements have made it possible to integrate work and family life. Furthermore, there have been trends towards global competition and flexibility, along with lean practices and downsizing, which put increased pressure on organizations as well as individuals (Perski, 2002). These changes, together with the increased diversity in family constellations, for example, in the form of dual earner couples, single parents, and an increased participation of many men in childcare (Björnberg, 1998), have brought the topics of work and non-work relationships and work-life balance to the forefront. Political and organizational attempts have been made to facilitate the combining of work and private life. Home-based telework and other flexible working arrangements are seen as a means of facilitating this among employees who are trying to cope with demands in family life.
Theoretical background, terminology and outline

Research on the relationship between work and non-work includes a variety of perspectives and dimensions, and the definitions and terminology used in different studies differ (Pitt-Catsouphes, Kossek & Sweet, 2006; Jones, Burke & Westman, 2006). A number of closely related and sometimes overlapping concepts can be found, such as those concerned with the areas of work-life conflict, work-life integration, work-life balance and work-life interaction. Although all of these concepts are relevant, the term “interaction” appears to be the most applicable for the purpose of the current thesis, since it describes the reciprocal influence between the two domains. “If two things interact, the two things have an effect on each other” (Oxford Advanced Learner’s Dictionary, 2000).

Many studies focus on the relationship between work and family, and some tend to use the term “family” synonymously with the term “non-work” (cf. Frone, 2003), while others, for example, include leisure, community, and other parts of life within the concept of the non-work domain (e.g., O’Driscoll, 1996). The terms “work” and “non-work” are problematic to define, and a proper introduction to the many ways they have been described is beyond the scope of this thesis. One approach that should be mentioned has been to employ the term “paid work” (Gardiner, 1997). The use of this term places an emphasis on the work one gets paid for, however, which is too limiting in terms of the current thesis. Here, the focus is on the work that is done to fulfill the individual’s perceived obligations within the contract of the employment relationship (cf. Karlsson, 1986).

Within the non-work domain, as well as the work domain, people perform activities, which may be either physical or mental in nature. When it comes to non-work, it can encompass a number of various activities, such as family, leisure, and household activities. Common household work, for instance, may consist of cleaning, washing the dishes, and cooking, while caring for children at home during working hours may fall under other activities. Another type of non-work activity is personal care activity, which includes those activities individuals perform for their own needs (eating, washing) as well as those leisure activities which cannot be delegated to someone else (watching television, reading for pleasure, etc.) (cf. Gardiner, 1997, Kofodimos, 1993). Since the aim of this thesis is to study the interaction between work and non-work, and to capture how individuals handle the situation when work gets located within the home, family and features within and close to the home are of interest. Accordingly, family constitutes an important element, as do other features such as, for instance, pets, sports, leisure, and neighbors.
Since the domains of work and non-work are influenced by gender issues, a gender perspective is relevant. Although a great deal of research has been produced, many of the studies on the (paid) work domain have focused on men, while many studies on the non-work domain have focused on women. (Härenstam, Aronsson & Hammarström, 2001). Besides the issue of gender divisions, it is also important to acknowledge that there is a diversity of household types and family constellations within which gender relations can exist and develop (Bäck-Wiklund & Johansson, 2003). In the current thesis, the main focus is on the interaction between work and non-work among home-based teleworkers, and the gender perspective will only be partially discussed.

Given the context of home-based telework, and the stress and coping perspective of this thesis, aspects of the home (residence) and restoration will play a crucial role. A theoretical model on the social ecology of stress and restoration is outlined below, as it provides this thesis with an overall underlying theoretical framework. The outlining of the theoretical framework will begin with a review of a number of traditional theoretical conceptions concerning the structure of the relationship between the work and non-work domains, involving the segmentation, spillover, and compensation models (Frone, 2003, O’Driscoll, 1996, Parker, 1981, Wilensky, 1960). This is followed by a review of another important and traditionally used approach, the theory of social roles, role conflict and role enhancement. These approaches are all of particular interest for the relationship and consequences of work and non-work. However, they do not sufficiently take the existence, character and role of boundaries into account. Therefore, the final theoretical review puts forward the boundary theory as a complement to the previous models.

**Theoretical models on the structure of the relationship between work and non-work**

*Segmentation, Compensation, and Spillover*

The segmentation model originates in the industrial era and postulates that work and non-work are two separate domains that have no influence on each other (Blood & Wolfe, 1960, Haavio-Mannila, 1971, Piotrkowski, 1979). Proponents of this view argue that individuals in western societies live out each domain independently from the other and that the domains are physically and psychologically separate (Dubin, 1956, Staines, 1980, cf. Sumer & Knight, 2001). Since the occupations shaped by scientific management often were unsatisfactory in respect to motivation and engagement, segmentation between work and non-
work was interpreted to be a natural process (Blood & Wolfe, 1960; Lambert, 1990).

The compensation model proposes that the lack of satisfaction and motivation in one domain can be compensated for by the equivalent in the other domain (Dubin, 1973). The idea is that workers try to compensate for a lack of satisfaction in either work or non-work by trying to find more satisfaction in the other domain. This model has mainly been applied to explain reactions to fragmented, highly specialized, and machine-paced jobs, but it also provides a plausible explanation for cases where employees become more involved in their work while experiencing problems in the family domain (Lambert, 1990, cf. Hochschild, 2001). Accordingly, results presented by Hochschild (2001) showed that many employees seemed to experience their work as the place where they could find the resources usually associated with the home, while their homes had become a place which rather depleted their energy in a way that was formerly associated with work.

Finally, the spillover model emphasizes the influence of one domain on the other. The influence can be either positive or negative, and it may be bi-directional (Frankenhaeuser, Lundberg, Fredriksson, Tuomisto, Myrsten, Hedman, Bergman-Losman & Wallin, 1989; Lambert, 1990; Meissner, 1971). In other words, both the negative and positive experiences in both domains tend to influence the other domain (Zedeck 1992). For instance, the emotions, attitudes, skills, and behaviors established in one domain can spill over into the other domain (Piotrkowski, 1979, Kelly & Voydanoff, 1985). The majority of studies have focused on the work-family conflict and shown positive relationships between job stressors and work-family conflict. Frone, Russel and Cooper (1992) as well as Greenhaus and Beutell (1985) point out the importance of distinguishing between work-family conflict (feeling that work responsibilities lead to neglecting family) and family-work conflict (feeling that family responsibility leads to neglecting work). Research on the work and non-work relationship in regard to stress shows that the spillover of fatigue/stress from one domain to the other is common (e.g., Eckenrode & Gore, 1990; Greenhaus & Beutell, 1985). Usually, work is found to intrude on non-work life rather than the reverse (e.g., Frone, 2003; Greenhaus & Beutell, 1985; Johansson, Huang & Lindfors, in press).

In conclusion, even though some studies provide evidence for both the segmentation (Campbell, Converse & Rodgers, 1976, Haavio-Mannila, 1971) and the compensation model (Evans & Bartolome, 1984; Rothbard, 2001), the spillover approach has the greatest empirical support (Crouther, 1984, Staines, 1980, Kirchmeyer, 1992). However, an examination of the research on the nature of the relationship between work and non-work reveals that a sound conceptual framework appears to be lacking (Lambert, 1990; Jones, Burke & Westman, 2006). When considered individually, none of the above models captures the dynamics of
the work and non-work relationships (Gardell, 1976, Meissner, 1971). Rather, they all contribute, in some part, to explaining the complexity of the relationship between work and non-work. In light of this, it seems reasonable to view the processes of segmentation, compensation, and spillover as overlapping rather than competing processes (cf. Sumer & Knight, 2001, Edwards & Rothbard, 2000).

Critical aspects of the models

The segmentation model was developed at a time when most paid work took place in demarcated areas (factories), and when no effort was made to make working activities more motivating or satisfying for the employees (cf. Thompson, 1992). Furthermore, the breadwinner model assumed one breadwinner, usually the man (cf. Boris & Lewis, 2006). Hence, a perspective which comprised work and non-work as separate domains was relevant. Today, work has become a central role in most individuals’ lives, partly due to the efforts made to make work more motivating and satisfying, and has shown itself to be of consequence for individuals’ self-identity and self-esteem (Rothbard, 2001). Such a development arguably results in a tendency towards an integration of the work and non-work domains. Furthermore, in Sweden and many western societies, the breadwinner-household constellation and the implicit division between men as breadwinners and women as caregivers is unusual. Rather, there is a diversity of households, consisting of dual-career couples, single households, and other forms of family constellations (Bäck-Wiklund & Berglund, 1997). Instead of being separated between two individuals, most adults are having to deal with a combination of both work and non-work elements in their lives (Near, Rice & Hunt, 1980). This tendency is reinforced by information and communication technologies (ICT), allowing work to be performed in all kind of environments.

However, even though the segmentation model gives an insufficient framework (based on little empirical evidence) for the nature of the work and non-work relationship, segmentation may be relevant from a different perspective, namely from a stress and coping perspective. The segmentation model was developed in the industrial era, when work processes were not concerned with bringing motivation and satisfaction to the workers. Today, many jobs are motivating and demand a high level of engagement as well as considerable time investment. Studies show that many suffer from stress due to high demands at work (Hill, Hawkins, Miller, 1996). One reason for this may relate to the partial breakdown of the separations between the dichotomies of brain and brawn, public and private, and the related demands for personal engagement in a downsizing labor market, in the sense that work requiring strong engagement is also more difficult to detach
from and thereby carries with it a slowing down of the restoration and relaxation process after a period of job-related stress (Sonnentag, 2001). In peoples’ efforts to limit negative stress and make room for other interests and demands in life, the concept of segmentation may regain relevance. Recent research shows that in many situations where segmentation between the two domains has occurred, it has been the result of employees’ active attempts to separate work and non-work because of stress (Kylin & Karlsson, 2006; Rothbard et al., 2005). That is, rather than arising as a natural process, as is assumed by the segmentation model, it now appears to be a deliberate process among employees who prefer segmentation (cf. Piotrkowski, 1979; Mirchandani, 1999; Kylin & Karlsson, 2006; cf. Sonnentag, 2001).

The relationship between work and non-work seems to constitute a dynamic relationship. As concluded above, the reviewed models only partially contribute to our understanding of this relationship. Furthermore, it appears that they implicitly assume that boundaries exist (Lambert, 1990). The nature of these boundaries and the process of creating them are poorly understood, and a further exploration of the nature of the segmentation, and of the boundaries between the domains is highly desirable. In the following sections, a review of the theoretical conceptions of role theory in general, and the models of role conflict and role enhancement is presented. These are commonly used in the areas of work and non-work research and are relevant since they have contributed to a better understanding of the social and mental divisions of work and non-work.

Theoretical models on individual-level outcomes – The theory of social roles and role theory

Beyond the above traditionally discussed theories, role theory has been an often applied theoretical framework. (Barnett & Gareis; Frone, 2000). Social roles are sets “of activities and relations expected of a person occupying a particular position in society, and of others, in relation to that person” (Bronfenbrenner, 1979:85). Kahn and his colleagues describe their concept of roles as follows: “Associated with each office is a set of activities, which are defined as potential behaviors. These activities constitute the role to be performed, at least approximately, by any person who occupies that office” (cf. Kahn, Wolfe, Quinn, Snoek, & Rosenthal 1964:13). To be a worker, spouse, mother, or friend, etc., prescribes a set of expectations that constitute an individual’s roles. Role expectations go beyond one’s self and others, as they are rooted in ideologies and institutional structures. Role ambiguity can emerge when an individual does not receive enough information about the expectations associated with a certain role (Kahn et al., 1964).
Role engagement refers to one’s psychological presence in, or focus on, role activities (Kahn, 1990). It has two central components: attention and absorption. Attention refers to the cognitive availability and amount of time spent thinking about a role, while absorption refers to the intensity of one’s focus on a role. In short, “people can use varying degrees of their selves, physically, cognitively, and emotionally, in work role performances, which has implications for both their work and experiences” (Kahn, 1990:692).

**Role conflict**

In the large field of role theory research, two main approaches have emerged: the role conflict (role strain) and the role enhancement (role enrichment) approach. Role conflict arises when expectations associated with one role contradict the expectations of another role. It is central to a commonly used theoretical foundation within industrial and organizational psychology and in the context of work and non-work relationships (Thompson, Beauvais & Allen, 2006). While there are different types of role conflicts (e.g., intra-sender conflict, inter-sender conflict and inter-role conflict), the inter-role conflict is the most relevant in this context. It describes when role pressures associated with one domain (e.g., workplace) are in conflict with pressures from another domain (e.g., family members, leisure). The basic assumption of the role conflict model is that work and family constitute conflicting domains, since both make claims on an individual’s limited and finite resources of time and energy (Barnett & Gareis, 2006; Kanter, 1977). The argument is that each individual has limited resources of time and energy and that the allocation of these resources to each domain (work, non-work) influences whether an individual experiences conflict or balance between the life domains or not. The “rational” approach goes even further and assumes that the extent of inter-role conflict (conflict between the roles within different domains) is directly proportional to the amount of time or energy spent in each domain (Gutek, Searle & Klepa, 1991, Adams & Jex, 1999). According to this view, the more roles a person occupies, the greater the pressure on the finite resources of time and energy and the more depleted her capacity. The expected consequences of role conflict are, for example, psychological distress and burnout. (cf. Barnett & Gareis, 2006).

The role conflict perspective can be approached from a work-family or a family-work angle and is a type of inter-role conflict which occurs when there is an incompatibility between the demands of work and family (Greenhaus & Beutell, 1985). Greenhaus and Beutell (1985) identified three types of work-family conflicts: time-based conflict, concerning time demands; strain-based conflict, marked by symptoms of psychological strain (e.g., anxiety, fatigue, irritability); and
behavior-based conflict, based in expected or appropriate behaviors (e.g., expressiveness, emotional sensitivity).

Recent research has moved away from chiefly focusing on negative outcomes, as aspects of health, well-being, and the enhancement of the domains have begun to receive more attention (cf. Seligman & Csikszentmihalyi, 2000, Antonovsky, 1991).

**Role enhancement**

Consistent with the broad movement within psychological research to not focus mainly on mental illness but on mental health as well (Seligman & Csikszentmihalyi, 2000; cf. Lindfors, 2002), application of the role enhancement model has suggested that multiple roles are beneficial for women and men. This approach has its origins in studies concerning psychological well-being and primarily seeks to identify the mental and physical risk factors for health outcomes (e.g., Grzywacs and Marks 2000). The model is based on the premise that it is possible to increase one’s energy supply by engaging in multiple roles (Marks, 1977; Gutek, Searle & Klepa 1991). It presumes that energy is not limited and fixed, but an expandable quantity. Individuals can thereby have multiple roles, combining employee, colleague, mother, spouse, etc., which they can benefit from. In general, by engaging in a plurality of roles, individuals become more attention and positive feedback (in terms of identity, self-esteem, rewards) on different levels, which provides positive experience that can be drawn upon as a buffer in other situations of conflict (Baruch & Barnett, 1986; cf. Primeau, 1995). This approach has also produced studies which show, that women benefit from working roles and men benefit from family roles (cf. Barnett & Gareis, 2006). Women’s participation in the labor force, for instance, can contribute to improving their integration in society, and also offer them greater economic freedom and access to skill and competence training, while the men can benefit from participating in their children’s development and upbringing (cf. Björnberg, 1998).

Work-family, work/non-work enhancement, role enhancement, role enrichment and facilitation are all terms used to describe positive connections between the domains. Facilitation refers to “the extent to which participation at work (or home) is made easier by virtue of the experiences, skills, and opportunities gained or developed at home (or work)” (Frone, 2003:145). Family support, for instance, has shown itself to be a source of facilitation for individuals who face high demands at work (Grzywacz & Marks, 2000, Kirchmeyer, 1992), potentially providing greater family and job satisfaction and organizational commitment (Allen, Herst, Bruck, & Sutton, 2000; O’Driscoll, Brough & Kalliath, 2006). Because of the complexity of
factors involved, such as the number of roles, role quality, and indirect effects, there is need for further investigation in this area. Although there is lack of systematic research to date, there are also suggestions that work-family facilitation may increase physical health and well-being (Frone, 2003; Grzywacz & Marks, 2000).

In conclusion, when it comes to the relationship of work and non-work, the role theory has provided a useful metaphor for describing the social and mental divisions between work and non-work. It has certainly contributed to a better understanding of the complex relationship between work and non-work. Although the time and energy sources of individuals are limited, and can contribute to stress when the domains compete for them (conflict perspective), engagement in multiple roles provides a number of benefits that are likely to lead to enrichment (enhancement perspective). However, there is a call for extended theoretical frameworks that are able to consider both positive and negative outcomes and the components and mechanisms involved.

**Critical aspects of role theory**

In regard to this thesis, the concept of role theory has some critical features. First, a very important issue for the current thesis is that when Kahn et al. (1964) published their ideas on role theory, work and family roles were usually separated in time and space. In more concrete terms, the transition between the roles of work and home occurred, and was facilitated by, one’s commute to work, where the mental “switch” was made between the roles (cf. Hall & Richter, 1988). In work arrangements like home-based telework, the situation lacks the distances in time, space, and activity. Furthermore, since role norms are exposed to changes in social processes (e.g., changed attitudes towards work and leisure) (cf. Lewis, Rapoport & Gambles, 2003), prevailing social attitudes are likely to lead to changes in these roles (cf. Elvin-Nowak, 1999). The blurring of the boundaries between work and non-work are likely to lead to a blurring of the roles attached to these domains.

Concepts of role engagement that take into account attention and absorption, one’s cognitive availability and the amount of time spent thinking about a role, and the intensity of one’s focus on a role appear important, but need further investigation in regard to the relationships and interdependencies of their components. One dimension that could be of relevance concerns the basic work aspects of physical and mental activity. To relate the conflict and enhancement approach to questions of integration versus separation vis-à-vis thinking (mental activity) and doing (physical activity) may be of interest. While a relatively good amount is known about physical conditions and limits (e.g., Lundberg, 2002;
Lundberg & Melin, 2002), too little is known about the limits of mental engagement. For instance, what conditions are needed in order to maintain a person’s attention and engagement in different roles? How are a person’s attention and ability to concentrate related to stress and restoration cycles? In comparison to work activities during industrial times, which were repetitive and restricting, with short, clear-cut tasks, many occupations today are in the form of projects and require many skills. Moreover, they are based on being responsible (freedom under responsibility) for many different tasks, which has led to the situation where a stressor can now result from having too many uncompleted tasks going simultaneously. Thus, it seems reasonable that issues of mental versus physical activity have become central in today’s working life—especially in the context of home-based telework, where roles and domains are co-located.

Furthermore, there is need for further investigation of overlapping activities. Generally, to have a high level of work engagement in a workplace, a high level of engagement is usually required socially with colleagues. Tasks such as baking for colleagues or arranging a holiday party at the workplace cannot easily be sorted under the dichotomies of paid work or leisure, work or non-work, since activities of this kind have characteristics in line with those of both domains. In the case of baking for colleagues, it may, on the one hand, fulfill the role (expectations) of a baking parent, while it also fulfills the role of being a good and social colleague. The activity is performed at home, and constitutes a leisure activity as well as an activity carried out for the common good at work (Karlsson, 1983). Another example of a type of activity that may overlap are activities involving seeking information on the internet and general in-service training, which result in an increased competence that can be applied to both domains, making them difficult to allocate to a certain domain. In other words, some activities may provide for the interests of both domains.

Another issue concerns the question of whether role conflict and role enhancement stand in opposition to each other or are complementary processes within a whole context? Rothbard (2001) proposed a model that describes, among other things, the process of psychological engagement in a role, through which family and work roles can influence each other negatively or positively. Although there have been a few attempts in this direction (Grzywacz & Marks, 2000), “… it behooves researchers to develop a comprehensive theoretical framework that can guide our examination of the positive and negative effects of combining work and family roles” (Thompson et al. 2006:287).

One relatively new approach within research on the work and non-work relationship is the boundary theory. As is explained in more depth in the following sections, this model focuses on the process of negotiating and maintaining boundaries between work and non-work.
Boundary theory

The process of negotiating and maintaining boundaries between work and non-work is the concern of a body of literature that can be termed “boundary theory” (Ashforth, Kreiner, & Fugate 2000, Mirchandani, 1998, Nippert-Eng 1996, Zerubavel, 1991). The act of creating (mental) boundaries is crucial for several reasons. First, on a basic and individual level, detachment from our surroundings is essential for the development of selfhood and identity (Zerubavel, 1991). The theory includes the cognitive process of social classification in individuals, and encompasses the notion of “mental fences” (Zerubavel, 1991:2) which are built around areas, events, ideas, etc., that seem to be similar, functionally related, or associated in some other way (Ashforth et al., 2000; cf. Frone, 2003). Boundaries serve to simplify and order such structuring. “Work” and “home” are two examples of domains created by boundaries (Nippert-Eng, 1996). Many of the studies on boundary theory concern home-based telework, since the aspects of boundaries are particularly relevant in those working arrangements.

Boundaries, individual choices, and constraints

The degree of integration versus segmentation between the work and non-work domains may differ between individuals due to their different wants. Although it is important to bear in mind that constraints do exist in the overall context of every individual’s situation, shaped by employment relationships, politics, culture, society, family, gender, class, ethnicity, life course, etc., (Noon & Blyton, 2002) it is also important to realize that people have possibilities within these constraints. Individuals have particular goals and opportunities for education, employment, family and lifestyle, which can, in turn, impact how and whether they wish to integrate or segment the domains. Gender and family status are two examples of plausible factors that can influence an individual’s decision to segment or integrate the domains (cf. Kossek, Noe & DeMarr, 1999; Magnusson, 2006). When it comes to the possible effects of integration, it may provide flexibility and enable employees to handle demands in other life domains. However, a high level of integration may bring disadvantages such as constrained restoration (Hartig, Kylin & Johansson, 2007). In regard to segmentation, a greater degree of it may increase one’s protection against, for example, the spillover of negative emotions and experiences from one domain to the other (Edwards & Rothbard, 2000, Hall & Richter 1988), and also protect against stress, depression, and extreme
psychological mood swings (Linville, 1987). Furthermore, individuals may want a high segmentation between work and non-work in order to cope with differing expectations and norms for behavior in the two domains (Clark, 2000). In short, it is likely for individuals to separate work and non-work due to increased demands and stress (cf. Rothbard et al., 2005).

Clark (2000) has developed a border theory that aims to provide a framework for individuals and organizations who are promoting a balance between work and family responsibilities. The theory emphasizes the perspective that individuals seem to be proactive or enactive rather than reactive, as much of the work/family conflict literature assumes (Clark, 2000). Her model consists of four central characteristics: the work and home domains, the borders between work and home, the border-crosser, and the border-keepers (for instance, spouses, children, etc.). She suggests that although people who segment work and home domains minimize negative and positive spillover, a synergy may still be created between them because they are separate, different, and involve different needs. In other words, a mixing of different activities can be stimulating and engaging.

Components and mechanisms of boundary theory

Generally, literature on the interaction between work and non-work focuses on the components of the work and home domains, the handling of boundaries and integration in regard to these domains, and other potentially related factors of influence (cf. Clark: border-keepers). Clark describes the domains to be like “worlds that people have associated with different rules, thought patterns and behaviour” (2000:753). On a basic level, both domains consist of a set of various activities, which are performed in accordance with a person’s work- or non-work-related goals. The domains can be separated or integrated. When boundaries are clear and definite, the domains are segmented. In contrast, the domains are integrated when the boundaries are blurred; in such cases, there is an overlap between the domains (cf. Nippert-Eng, 1996). Since situations in which there is either a clear segmentation or full integration between the domains are likely to be rare, the relationship between work and non-work, including their activities, is often structured as a set of different dimensions which are placed on a continuum ranging from high segmentation to high integration (Nippert-Eng, 1996; Ashforth et al., 2000, Rothbard et al., 2005).

Most of the literature in this field refers to three types of boundaries: spatial, temporal, and, sometimes, psychological/mental. Spatial boundaries in the workplace can, for example, take the form of a wall or a door, which serve to
divide the workplace from the environment (cf. Ahrentzen, 1990). An example of a typical temporal boundary is the end of the working day or shift, as designated in the official time schedule. As regards mental or psychological boundaries, Clark defines them as “rules created by individuals that dictate when thinking patterns, behaviour patterns and emotions are appropriate for one domain and not the other” (2000:756). According to Clark, “borders are lines of demarcation between domains, defining the point at which domain-relevant behaviour begins or ends” (2000:756).

Overlap between the domains occurs through the integration mechanisms of flexibility and permeability. Flexibility refers to the malleability of the boundary between two or more domains, its ability to expand or contract, and to accommodate the demands of one domain or another (Ashforth et al. 2000, Clark, 2000). Permeability, on the other hand, involves the extent to which a boundary allows psychological or behavioral aspects of one role or domain to enter another (Ashforth, 2000, Clark, 2000, Pleck, 1977). Situations where employees are allowed to receive private phone calls during work time, or to stop working earlier due to childcare, or in which work tasks are performed after working hours are examples of situations with flexible and/or permeable boundaries. Flexibility and permeability have been studied in relation to the dimensions of time and space (Nippert-Eng, 1996). Flexible temporal boundaries may, for instance, be found in work arrangements where employees are permitted to adapt their working hours to the school hours of their children. Flexible spatial boundaries, however, may be present, for instance, in a situation where the same room is allocated for work during working hours and for private use at other times. Temporal permeability in the work domain may be found in cases where an employee is able to accept personal calls or visits regularly. Boundaries, and their levels of flexibility and permeability, apply to a subject, which may comprise a certain group, such as household members, colleagues, clients, or managers. Since time and space as well as flexibility and permeability may often be interrelated, it can be difficult to analyze their direct relationships.

Another important aspect of this theory concerns the transitions between the roles within the work and non-work domains (Ashforth et al., 2000). Standen et al. (1999) define boundaries “as a structural phenomena imposed by the spatial and temporal separation between work and family life” (1999:373). According to Hall and Richter, the daily commute to and from work is “an important psychological function in that it gives people a chance to get ‘into’ work in the morning and to ‘unwind’ in the afternoon” (1988:220). This seems reasonable since commuting to the workplace involves distance, a sort of “boundary land” in space, time, and activity, and may thus facilitate mental switching. In this, boundaries have a
mental/psychological dimension in that they enable the workers to mentally disengage work and family activities (Standen, Daniels, & Lamond, 1999).

Conclusion

As a whole, the relationship between work and non-work can be seen as a dynamic system with different parts interacting with each other. This would include one level of domains, the work and non-work domains. The domains consist of work and non-work activities, respectively, which can be either mental or physical in nature. These activities can be seen as falling within a continuum extending from total separation to total overlap in regard to the dimensions in time and space. Physical boundaries are the demarcations in space, time, and activity that separate the domains of home and work from each other. In the context of home-based telework, a spatial boundary may be a wall, or a door, etc., which divides the workplace from other parts of the home (cf. Ahrentzen, 1990). Temporal boundaries could take the form of time schedules for when to start and end, or when breaks are to be taken during the working day. Boundaries for activity concern which activities are considered to be appropriate and legitimate to perform or not during a teleworking day (Kylin & Karlsson, 2007).

Boundaries in time, space, and activity also have mental and physical aspects.

This duality can be witnessed, for example, in the movement from a workroom to a leisure room, where the crossing of a physical boundary may lead one to mentally “switch” from thoughts of work to thoughts of home. However a simultaneous switch (physically and mentally) is not always the case, as thoughts of work might linger in the non-work domain. Other cases could involve looking at a clock (time boundary), or hearing a bell that signals the end of the working day, which may both bring about a change in mental focus; however, thoughts about work can even occur after crossing these boundaries. Finally, a shift in activity can lead to a shift in mental focus, although this is not always the case. There are several studies showing that people are often preoccupied with thoughts of work while at home, when they are outside scheduled working hours (Fronè, 2003; cf. Steward, 2000).

The relationship between work and non-work consists of the following:

- The work and non-work domains.
- The activities within the work and non-work domains.
- The physical and mental types of activities within the domains.
- The placement of the various activities along a continuum from total separation to total integration/overlap in regard to time, space, and activity.
Boundary theory has partly highlighted the importance of boundaries and broadened our understanding of the relationship between work and non-work (Frone, 2003). However, many questions remain unanswered. In general, there is a need for further exploration of the characteristics and dimensions of boundaries. Furthermore, when coming from a stress and coping perspective, more emphasis should be put on the importance of boundaries. While a number of studies have focused on the stress levels and restoration that individuals experience after work, the nature and effects of the borderland between work and non-work has been neglected. In other words, the significance of the distance and commute between work and non-work, needs more investigation. Thus, questions concerning the meaning of this type of distance between work and non-work domains and how boundaries relate to stress coping and health in general, especially in the context of home-based telework, deserve further attention. In the next section, work and non-work will be considered in relation to stress and restoration and the meaning of the home.
Work, stress, coping, and restoration

Increasing demands in the work and non-work domains

Looking at developments in today’s societies, it is reasonable to believe that there has been an increase in the conditions leading to conflict between the work and non-work spheres. As described in the introduction, in many occupations the types of skills required have partially shifted from being physical in nature to being mental. Qualitative demands have increased in terms of level and variability. Employees today are often expected to both perform one major task and to also participate in quality development, or projects of different kinds. The demand for high-level mental focus and engagement, together with the given responsibility of holding deadlines, leads many people to work longer (Crouch, 1999). Developments towards the intensification of quantitative as well as qualitative demands (Allvin, Aronsson, Hagström, Johansson, Lundberg & Skärström, 1998; Hage, 1995, French & Daniels, 2005, Nolan, 2001) as well as demands for greater productivity in organizations increase job demands and the pressure on employees. Coupled with the issue of the blurring of boundaries between work and non-work (brain and brawn, public and private), such demands are likely to become a potential source of stress. In this, the aspect of boundaries plays an interesting role. This concerns, firstly, the ways individually created boundaries (in time, space, socially, etc.) can determine the relationship of integration versus segregation between the domains, and, secondly, the way the mental and physical activities may require limits/boundaries, in regard to a stress, restoration and health perspective.

Individuals’ non-work, everyday lives are also filled with demands of various kinds. Apart from household work, parenthood is an area within the non-work domain that is connected with many demands. Along with our increased knowledge about what constitutes healthy social and psychological childhood conditions comes the added pressure for parents to be able to live up to the conditions being advocated. Other demands within the non-work domain can concern, for example, healthy living, traveling, home renovation, and cooking (cf. Jones, Burke & Westman). The “ideal” individual of today, as conveyed through the media, should be engaged in multiple sets of activities within different spheres. For many individuals, the demands compete and give rise to conflicts which then lead to stress reactions (Perski, 2002).
Demands of unemployment and non-activity – on the facilitators and positive sides of work

Although the issue of demands is a very weighty and relevant one in relation to today’s working life and home life, it is also important to realize the positive sides of employment and engagements in other life domains (multiple roles). In her early studies on the psychological consequences of unemployment for individuals, Jahoda found the following aspects to be crucial, in reference to (traditional) employment. The first is time structure, since work provides opportunities for regular activity (cf. Giddens, 1993) and the formation of a well-defined time structure in daily life (Jahoda 1979). Secondly, it was found that regular work creates opportunities for experiences and social interactions with people outside of the family. Thirdly, work was shown to provide a direction for goals that were beyond the individual’s own, and, fourthly, to also be an important source for personal identity and status. Although new trends in the labor market have led to an increase in untraditional types of employment, such as temporary contracts, which are often characterized by job insecurity and lack the positive aspects of traditional contracts, unemployment appears to be even more stressful for most individuals (Grossi, 1999; Andersson, 2003). In sum, it appears as if work or some kind of activity is a basic human need (cf. Kanter, 2006).

The following section begins with a brief review of some of the fundamentals of stress, coping and restoration. Thereafter, a theoretical model on the social ecology of stress and restoration will be outlined. The model illustrates how processes operating above the individual and household levels (including work and non-work domains), such as in home-based telework, may affect the stress and health of individuals by modifying the spatial and temporal distribution of demands, resources and restoration opportunities within and across everyday life settings (Hartig, Johansson & Kylin, 2003).

Stress and coping

In the mid 1900s, Seyle (1956), in his study of physiological responses to threat, identified a stereotypical physiological response that he termed stress. This response serves a useful short-term purpose by mobilizing the individual’s capacity to deal with environmental demands. It is mediated through the central nervous system so that when an individual experiences stress, signals from the brain trigger the release of the hormones necessary for mobilizing energy in order to react to the threat (Frankenhaeuser & Johansson, 1986).
In current bio-psychosocial stress research, stress is seen as a dynamic process of interaction between individuals and their environment. In this and related fields, a common conception of stress is that it is a process of responding to an imbalance between perceived demands and the perceived resources available for meeting those demands (e.g., Appley & Trumbull, 1986), and the outcome of the process is determined by the individual’s appraisal of the balance between these demands and resources. Resources can take the form of social support from family, friends and colleagues, good health, and possessing the confidence that things will work out well (Antonowsky, 1991). Money itself (and the services it can buy) is another possible resource. Whether a situation is experienced as being stressful or not depends on one’s physiological characteristics, personality, prior experiences, mood, resources, and individual perceptions and interpretations of the situation. Besides environmental influences and demands, stress also involves the aspect of control, that is, whether one evaluates a given situation as being controllable or not (cf. Perski, 2002). Recently, stress research has changed its focus, from mainly studying the stressors and their consequences, to focusing more on the recovery phase of the reaction, which is when restoration takes place after and in-between the stressful events (Sonnetag, 2001; Zijlstra & Cropley, 2006).

When it comes to work-related stress and its long-term effects, an influential framework in this area is the job-strain model (Karasek & Theorell, 1990). This model posits that the combined exposure to high demands and a low level of autonomy is associated with elevated distress, which may increase the risk for cardiovascular ill-health (Eckenrode & Gore, 1990). Although elements of the model have been criticized (e.g., Doef & Maes, 1999), there is enough empirical evidence to support its basic structure (Schnall, Schwartz, Landsbergis, Warren & Pickering, 1998; Kivimäki, Leinio-Arjas, Luukkonen, Riihimäki, Vahtera & Kirjonen, 2002).

When confronted with stressful conditions, individuals will seek a way to handle the situation. This process is called coping. In a process-oriented definition, Lazarus describes coping as “constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person” (1984:141). As a whole, the process of evaluation involves a cognitive process of appraisals, where different brain systems are involved and influence the cognitive, behavioral, emotional and physiological responses (Näswall, 2004). These responses influence behavioral actions, referred to as coping strategies.

Two broad categories of coping have been identified: problem and emotion-focused coping. Problem-focused coping refers to the process of defining the problem, identifying goals, generating possible solutions, comparing different alternatives and evaluating their costs and rewards, and finally choosing a certain
solution. Emotion-focused coping refers to the cognitive processes that aim to change the subjective meaning of a stressful situation or to disregard the stressor in order to reduce the emotional distress. In addition to these two categories developed by Lazarus, some literature distinguishes a third category: appraisal-focused coping (Billings & Moos, 1984). Appraisal-focused coping involves attempting to change the perception or appraisal of the stressor, which may include comparing oneself with others, thinking how things could have been worse, or focusing on the benefits of the stressful situation. This issue of social comparison has in the past decades shown itself to be a prevalent way of coping with stress, yet literature on coping has paid generally little attention to this subject (Buunk, De Jonge, Ybema, & Wolff, 1998).

One crucial aspect of the coping concept is the level of control available to the individual (Shapiro, Schwartz & Astin, 1996; Aronsson, 1989). Control can be objective in the sense that individuals can actually alter their exposure to a stressor, and it can also be subjective in that individuals can believe that they have the competence needed to change their exposure, or to exercise control over the situation or not. Control, in interaction with social-environmental and biological-genetic factors, plays an important role for the physical and mental health in individuals (Shapiro, Schwartz, & Astin, 1996).

**Restoration**

Restoration involves the personal and/or social recovery of functional resources or capabilities that were diminished in efforts to meet different demands (Hartig, Johansson & Kylin, 2003). The resources used in restoration may be physical, psychological, or social, and different forms of restoration may proceed in tandem, and require different durations (Haynes, Gannon, Orimoto, O’Brien, & Brandt, 1991). Sleep is a basic form of restorative activity, which, among other things, renews one’s physical energy and capacity to remain attentive. Restoration can also occur during waking hours, given two main conditions. First, a person needs to be out of harm and distanced from their demands and, second, she or he would need to be engaged in an environment that is pleasing or in some way contains positive distractions. Studies have shown that periods of rest from work are important for the well-being of employees at work (Sonnentag, 2003). An increasing number of studies have also indicated that a positive relationship exists between recovery and the decrease of perceived job stress and burnout (Westman & Eden, 1997; Westman & Etzion, 2001). Furthermore, recovery has also been shown to increase work engagement (cf. Kahn 1990, Sonnentag, 2003).
Many studies on stress and health behavior and coping focus on reactive behavior, which refers to the strategies used after the stressful event in order to alleviate the tension. In addition to this, it is also important, however, to take proactive and preventive coping into consideration where possible (Aspinwall & Taylor, 1997). When individuals build up resources (e.g., strength, good health, restoration), it will enable them to cope better with demands in the future (Ingledew, Hardy, Cooper, & Jemal, 1996; Jones, Kinman & Payne, 2006).

In conclusion, an individual’s experience of stress is determined by his or her evaluation of the meaning of the situation and of the resources available for handling that situation (Lazarus & Folkman, 1984). One crucial aspect of the coping concept is the level of objective or subjective control available to the individual. Thus, coping strategies are dependent on whether an individual perceives a situation as controllable or not (cf. Danielsson, Vrbanjac & Larsson, 2006). Since “keeping something within boundaries” makes it easier to apprehend, it is plausible that it will also become more manageable and controllable. It thus appears that the concept of psychological stress and coping is closely related to boundaries. For instance, it is likely that individuals create boundaries to protect themselves against work-related stress when they say no (draw boundary) to receiving a newly expanded working area. Hence, it seems reasonable that coping with stress entails a process of creating control via creating boundaries.

The social ecology of stress and restoration

Approaches using the social ecological perspective focus on the exchange between people and their environment across levels of analysis and time (Catalano, 1979, Stokol, 1992). A social ecology of stress and restoration shows the relation between environment (in this context, home) and stress and restoration. It rests on the following three basic assumptions (Hartig, Johansson, & Kylin, 2003). The first one is that, in everyday life, people cycle through processes of stress arousal and restoration. Secondly, the stress and restoration cycles are presumed to be regulated by activity cycles, which are patterns of activities within allocated periods of time in specific settings. The demands faced and the opportunities for restoration have a systematic distribution across times within the regular cycles of their activities. Thirdly, social, economic, technological, organizational, and other processes that operate above the individual level can influence these activity cycles. This can be seen, for example, in how particular times of the day and days of the week are generally allocated for work and occur in certain patterns, which, in turn, influences factors such as individuals’ availability for communication and restrictions on their movements. These processes can therefore have an impact on how demands and
restoration opportunities become distributed across time and across the settings for people’s activity cycles, and on their stress and restoration cycles. In modern societies, one risk to the process of restoration is posed by the highly increased accessibility of individuals, which has been made possible through, for example, the use of mobile phones and the internet.

Discussions related to stress are often based on observations of stress reactions in individuals and/or stressors in the socio-physical environment. However, given that the actual stress process lies in the interaction between the person and the environment (cf. Haworth, 1997), it is therefore important to explore how individuals cope with new environmental situations. In the following section, the role of restoration and its relation to the home and restorative environments will be briefly discussed.

The home and restorative environments

Home and residence are two closely related terms. Studies on the home often focus on the meaning and emotions attached to it. Research on residence, on the other hand, tends to emphasize health-related phenomena, relating it to housing, location, and neighborhood attributes, as well as to activities in and around the housing, such as daily routines, interaction with neighbors, etc. (Hartig, et al.). In the context of this thesis, the meaning assigned to the home, as well as related health issues are important, in terms of stress and restoration.

The home plays a crucial role for individuals as a foundation of ontological security, defined as “confidence or trust that the world is as it appears” (Giddens, 1984:375). It is the environment where individuals satisfy their basic and intimate needs, such as the needs for physical comfort, love, and affection. People also perform basic personal and household activities in their homes, including cooking, eating, cleaning, and caring for others. Performing these household activities can be perceived as something positive by some individuals, while, for others, it may evoke stress. Nevertheless, these activities imply a number of demands since they need to be planned and coordinated in conjunction with other activities. Another important feature of the home is that it is often the place where recovery and regular restoration takes place. For instance, sleep, an essential restorative activity, occurs in the home. Individuals generally spend a large part of their leisure time in the home. However, it is clear that the quality of restoration may differ immensely depending on one’s life situation, available resources, and related constraints.

Stokols (1992) distinguishes between primary and secondary environments. Primary environments, such as the residence, are those where an individual spends
a lot of time, relates to other individuals on a personal basis, and engages in diverse, personally important activities. It is likely that people will have relatively high control expectations with regard to primary environments. Secondary environments are those where relations to others are relatively transitory, anonymous, and inconsequential (Stolkol, 1992). Whether, when, and how an adult’s restoration occurs in the residence is influenced by the other members of the household. Women in families with children, for instance, seem to perform a greater workload than their spouses (Lundberg & Frankenhaeuser, 1999). In short, the residence is a crucial place for individuals as regards personal, social and restorative aspects.

In conclusion, stress research has provided us with a good deal of important knowledge. Because of such research, much is known today about the risk factors that can cause diseases or ill-health in the long term, and also about what contributes to a healthy lifestyle. The modern work environment often contains challenges related to time pressure, lean organization, and job insecurity, which puts increased pressure on individuals when combined with such aspects as multiple roles, expectations from ourselves and the environment, and total workload. In general, it seems as if one of the main problems of today is the lack of restoration (cf. Åkerstedt, 2003). Most individuals seem to be able to handle stressful situations, and this can even be seen as challenging and positive. However, if it continues over a long time, and there is little possibility for rest and relaxation, problems and health risks may arise. In sum, processes of stress, coping and restoration create a variety of psychological, physiological and behavioral processes that, in turn, lead to different health outcomes.

When it comes to home-based telework, these conditions and consequences especially need to be investigated since it is a situation involving the overlapping of the domains of work and home. Home-based telework, as will be discussed in the following section, is a type of working arrangement in which work has been relocated to the private sphere, thus modifying the traditional boundaries in time and space. The blurring of these boundaries makes the work-non-work relationship, boundaries, stress, and coping highly relevant.
The case of home-based telework

Home-based telework as the ultimate opportunity for integrating work and non-work

Working at home is not a new phenomenon. As discussed in the introduction, in agrarian societies, production in or near the home was the major form of work. In modern societies, the development of telecommunication structures and linking computer networks offers new opportunities for paid home-based work (Huws, Korte & Robinson, 1990). These opportunities have figured into a number of speculations about future work trends, including the notion of the “electronic cottage” (Toffler, 1980; cited in Forester, 1989; cf. Rifkin, 2000), in which the idea of a re-integration between work and non-work life is at the core. “Family empowerment means… using home computers to bring back into the home many functions that were there before the industrial revolution” (Wakefield, 1980). It raises the question of whether home-based telework could represent the ultimate means for integrating work and non-work. An increasing number of studies show that the blurring of boundaries between the domains is partly due to co-location and partly due to the use of information communication technology, which has resulted in people being more accessible (Major & Germano, 2006; Wharton, 2006). However, the blurring of boundaries does not necessarily lead to an integration of the domains. Rather, this type of work seems to create a need for new forms of differentiation.

Definition and distribution of home-based telework

There is no generally established definition of home-based telework (Huws et al. 1990) and many different terms, such as telecommuting, homeworking, and distance work, are used for concepts similar to telework. Usually, the definitions include: (1) working outside a traditional workplace, and (2) the usage of ICT (Bailey & Kurland, 2002). According to eWORK, home-based teleworkers are those who (eWORK 2000:26):

- work from home (instead of commuting to a central workplace) for at least one full working day per week
- use a personal computer in the course of their work
use telecommunication links (phone/fax/e-mail) to communicate with their colleagues/supervisor during work at home
- are either in salaried employment or self-employed in which case their main working place is not the contractor’s premises.

The extent and distribution of such teleworking arrangements varies depending on the definition of telework used and where the cut-off points for the classifications are set. In Sweden, the AKU defined telework as work carried out at least one day a week in the home and under a formal agreement between employer and employee (SCB, AKU, 1997). The number of teleworkers in Sweden who were working at home more than one day a week was estimated at a maximum of 150,000 to 200,000 people (approx. 4-6% of the total number of employees) in 1995 (Forsebäck, 1995). While outcomes related to management, productivity, and commitment have been studied rather thoroughly, research on the psychological consequences at the individual level is rather scarce (Hone et al., 1998, Standen, Daniels & Lamond, 1999). Generally speaking, telework has not experienced the great increase that some had expected (Forester, 1989; Forsebäck, 1995; Salomon, 1998). Why this is the case needs further investigation and might be related to some of the issues discussed in the following sections.

General conditions and aspects of home-based telework

**Modified control relationships**

One essential aspect of home-based telework is that the work takes place in the private sphere. Since neither the traditional boundaries in space and time nor the traditional control aspects are present, they have to be compensated for in some way (cf. Fischer, 1997). According to Friedman (1977), there are two general control strategies: direct control and responsible autonomy. Direct control entails a high level of control and a far-reaching division of the labor process, as represented in scientific management. In work arrangements characterized by responsible autonomy, workers are given some authority, which is connected with their responsibilities for completing tasks within certain time limits (Friedman, 1977; Hage, 1995). Although this form of responsibility contract is a common feature in today’s working life, in home-based telework it is even more prevalent. In a normal workplace, control is most often exerted implicitly, if not through the manager.
him/herself, through colleagues, etc., whereas the employee in home-based telework is completely out of sight and presence.

*The lack of spatial and temporal distance between work and non-work*

Another important issue regarding this work arrangement concerns the lack of spatial and temporal distance including the matter of physical and mental distinctions between home and work. In contrast to traditional working contracts (where the employee travels to a certain workplace), there is no distance or zone between work and the home in home-based telework. The (activity of) traveling to a traditional workplace can be seen as a “boundaryland,” a zone in space, time, and activity, which reasonably facilitates mentally switching from home concerns to work concerns. To put it another way, the daily traveling of office workers to and from work can serve an important psychological function as it allows them to shift into a work mode in the morning, and then to unwind on the way back (Hall & Richter 1988:220). This aspect is absent from home-base teleworking arrangements.

In addition, with home-based telework, a need for negotiations within the home is created. Given the co-location and the overlap of the work and home domains involved, difficulties may arise if cultural standards and norms from the different domains collide, which can be the case when, for example, standards on work hours and scheduling differ from those of the home domain. Another potential source of conflict is found in the expectations attached to the home environment; the pressure to be polite to relatives or neighbors who phone or visit, for example, may cause problems in this regard. As a consequence, employees may need to negotiate with their cohabitants and others with whom they have contact (cf. Felstead & Jewson, 2000). These new demands and expectations can lead to the perception of lost control, and stress. A practical area of concern, for research on telework, is the investigation of the ways in which individuals and households manage the boundaries between work and home (cf. Ahrentzen, 1989, 1990; Gurstein, 1991). How the work surroundings within the home are to be suitably arranged, including what adjustments need to be made, to ensure uninterrupted work time is a matter that the employees and their households have to work out. In so doing, a modification of interpersonal behavioral norms, scheduling, access restrictions, etc., may be called for. Having discussed these important aspects and conditions of home-based telework, in the following section we will briefly turn to some of the possible motives and outcomes of home-based telework.
**Motives and outcomes of home-based telework**

The reasons for engaging in telework differ among individuals. According to Mokhtarian and Salomon (1994), the decision to telework is determined by a combination of facilitators, constraints, and drives. The facilitators relate to the suitability of telework for the given job, such as being able to work without social and professional interactions at the workplace, receiving tolerance and support from other household members, and having problems commuting to work. The same factors may constrain telework when they are reversed. Examples of motivating factors for teleworking at home include the desire to get more work done, to reduce stress connected with social obligations at the workplace, to gain more control over the physical work environment, to satisfy personal needs for more independence or space away from others, to have more opportunities to meet family demands, to have more time with the family or for leisure activities, and, finally, to escape time-consuming commutes to work (Mokhtarian and Salomon 1994). As such, home-based telework can be viewed as a kind of a coping strategy in that it involves using the home to try to better coordinate demands, resources, and restoration possibilities. For example, this arrangement may enable a family to move or to stay at a certain residential location, depending on the distances to other locations, such as schools.

Gender, occupational category, and household type are some categories that have shown themselves to be relevant for the decision to telework or not (Mokhtarian, Bagley & Salomon, 1998). Women, for instance, more often than men, tend to cite family reasons and stress reduction as motives for teleworking. Looking at the reasons studied, it is reasonable to believe, for instance, that family reasons comprehend an aspect of integration, insofar as employees try to integrate their family/leisure/non-work life with work through the flexibility contained in this working arrangement.

Generally, studies show that home-based teleworkers report both advantages and disadvantages (Huws et al., 1990, Korte & Wynne, 1996). Included among the positive benefits are autonomy and flexibility (Hill, Hawkins & Miller, 1996). Reported disadvantages were problems with motivation and self-management (Standen et al., 1999, Felstead & Jewson, 2000), job insecurity, lack of training, and health-related problems (Standen et al., 1999).

An important and recurring topic in telework research concerns the evaluation of the overlap between work and home (e.g., Ellison, 1999; Hill, Hawkins, & Miller, 1996). Ahrentzen (1990), for example, found role overlap among teleworkers, but could not find that it was necessarily connected to role conflict and stress. However, in other studies, employees have reported feeling that they cannot escape from work, that work is too closely available to be able to detach, and that they
tend to work longer hours (Lindfors, 2002; Ellison, 1999). While these tendencies give evidence for negative overlap, there are also studies which show the positive sides of overlap, such as those which show, for instance, the possibilities for combining paid work and household tasks in an individually suitable way (Kylin & Karlsson, 2006; Standen et al., 1998).

Conclusion

In conclusion, looking at the specific situation for home-based teleworkers, several aspects appear important. Firstly, this type of working arrangement has been shown to lead to a blurring of the traditional boundaries between the work and non-work domains. Secondly, with the relocation of work to the home and the disappearance of traditional control mechanisms, a modified trust relationship between employer and employee emerges. Thirdly, apart from the practical, physical arrangements that need to be done in the home in order to be able to work there, the need to negotiate with members of the household and with other family members and contacts in the social environment may arise. These negotiations, aimed at redefining certain time and space boundaries for the sake of ensuring more favorable work circumstances, may involve various scheduling changes as well as a modification of interpersonal behavioral norms, which may, in turn, lead to conflicts. Fourthly, home-based telework can be a coping strategy, in that it creates possibilities to, in a more flexible way, adjust to circumstances and demands associated with the home. However, it may also lead to unwanted consequences; for instance, the home may, at least to some degree, no longer function as a place for restoration (cf. Sonnentag, 2001, 2003).
Summary of the Studies

Methods

The present thesis is part of a larger research project aiming to examine the conditions and consequences of increasing flexibility in modern working life, entitled “Boundaryless work or the new boundaries of work” (Allvin, et al., 1998). Two of the studies (Study I and III) are based on a larger questionnaire data collection conducted at the Swedish National Energy Administration (Statens Energimyndighet; STEM). Study II is based on interview data conducted at the Swedish Municipality of Karlstad. The combination of quantitative and qualitative methods is generally regarded as appropriate when studying a complex phenomenon like the topic of this thesis (cf. Patton, 1990). The need for a compensative methodological approach emerged during the research process. The initial analysis from the questionnaire study utilized questions of a more explorative character in order to try to understand the process whereby home-based teleworkers construct their workplace and work in their homes. Some of the questions that were raised concerned the role of overlap (integration) and boundaries (segmentation) and how the employees experienced this working situation. The initial examination of the occurrence of these phenomena was followed by a more in-depth examination in the qualitative study.

Data collection, participants, and procedure, Study I and III

In 1998, the Swedish National Energy Administration (STEM) was relocated from Stockholm to Eskilstuna, about 100 kilometers away. Due to the relocation and relatively long geographical distance in between, all staff members were offered the option to perform part of their work as home-based telework. A telework agreement was drawn up which allowed employees to spend up to three workdays per week working in their homes. Since most of the work activities of the STEM-employees were of intellectual character (delivering reports, etc.), and since they also had good ICT-support, home-based telework appeared to be a suitable type of working arrangement.

A questionnaire was distributed in the spring of 1999, about one year after the move. The questionnaire included several hundred items concerning basic demographic data and individuals’ work, family and home conditions, as well as
questions of work-related travel and commuting, working hours, job demands, etc. (Four different themes were covered: Management routines and work organization, Learning and competence development, Stress and health, and Work role and other life roles.)

Participation was voluntary but encouraged by the management. When the questionnaires were distributed, the total number of employees was at 169. All of these employees, except those who were on parental leave or other leave of absence, and those who were temporarily employed or who had not yet entered their contract, were invited to participate. The questionnaires were filled in during paid work hours in the office. Each participating employee chose one of three sessions especially arranged for this purpose, in which they completed the questionnaires in 60 to 120 minutes. 120 forms were distributed and responses were obtained from 107 persons. The dropouts occurred due to work overload, sick leave on days of data collection, or unknown reasons. All employees had their homes to themselves during their teleworking day.

Data collection, participants, and procedure, Study II

Study II is based on interviews with 14 employees of a Swedish municipality. In order to facilitate work conditions and the combination of work and non-work, the municipality had introduced the general option of home-based telework. Employees could apply for this option after agreement by their manager. The following conditions were set up in a policy document: telework must not decrease the level of service provided to the public, the period of teleworking should not exceed two weeks a month, and the teleworking employee should be in attendance at the telework workplace at a certain time agreed upon by the employer and employee (Policy dokument, Distansarbete).

Since the number of teleworkers in this organization was limited, the interviews could not feasibly be directed towards a specific occupational group. However, despite the fact that the occupations differed, including, for example, that of remedial educator, IT-specialist, and headmaster, many of their work activities were of a similar kind. Many, for instance, had to perform tasks involving some form of evaluation or documentation, and these tasks were typically the ones they chose to perform at home. The interviewees were comprised of seven women and seven men. Similar to the questionnaire data sample, none of these individuals had children or other cohabitants while working at home.

In accordance with the aim of the study, which is to explore how people handle the interaction between work and non-work life while working from home, and,
more specifically, to look at the process of creating and experiencing boundaries and their overlap, an open structured interview process was chosen (Thomsson, 2002). The interviewees were asked to reflect and talk freely about six topics – telework, family, home, work, leisure, and health. The interviews were taped and transcribed.

The analysis of the interviews was based on techniques used within grounded theory (Glaser & Strauss, 1967). During the process of open coding, several codes for different topics emerged, such as trust, control, legitimacy, work discipline, work morale, freedom, availability, and expectations from the social environment. The process of analyzing continued with comparing and re-comparing, relating and re-relating codes, as well as writing and re-writing memos. This process revealed two main features which most codes seemed to relate to: boundaries and boundaryless. During the whole process, analytic tools such as fourfold tables were used to ensure the systematic procedure of the analysis (Starrin, Larsson, Dahlgren & Styrborn, 1991). Finally, one main category (main concern, Glaser & Strauss, 1967) emerged, which seemed to provide a basis for why boundaries were created and re-established in this otherwise boundaryless work arrangement, namely the process of legitimizing work.

Study I. The telework-trade-off: Stress mitigation vs. constrained restoration

Activity cycles involve regular patterns of activities performed in different settings and within traditionally allocated periods of time and specific areas of space. The overall aim of this study was to, within a theoretical framework of social ecology, investigate the influences of home-based telework on employee’s stress and health outcomes. To shed some light on the relatively unexplored aspects of chronic stress and its health outcomes in this area, the focus of this study was on the effects of the co-location of work and home on the quality of restoration in the home. Home-based telework was frequently referred to as way in which to cope with commuting and parenting demands, and increased flexibility was seen as a positive factor in meeting these demands. Generally, the home was experienced as more of a place of restoration than one of demands. However, there were some indications that working in the home had undermined some of its restorative functions. In regard to overlap, having a separate room for telework appeared to ameliorate the spatial but not the temporal and mental overlap of work and non-work life. Irrespective of the type of overlap, as perceived overlap increased, the evaluation of it shifted from
positive to negative. Nonetheless, a large proportion of the teleworkers seemed indifferent to the given degree of overlap, and roughly 10% of them had a positive view of the nearly complete or complete spatial and/or temporal overlap they noticed between work and non-work life.

Furthermore, in this study, there were indications that women experienced less restoration while performing home-based telework than men, as compared with their counterparts among non-teleworkers. This suggests the possibility that women are more susceptible to the costs of home-based telework, insofar as it may reinforce gendered patterns of domestic work, brought on by women spending more time on domestic activity.

Study II. Re-establishing boundaries in home-based telework

Following up on the results from study I, study II aimed to explore the concept of overlap as well as the phenomenon of establishing boundaries in working relations. Too little is known about the consequences of relocating work to the home domain, or the consequences of not having time and space distances in such working arrangements. This study, therefore, set out to investigate how people deal with working under arrangements that include the blurred boundaries in time and space. The need (or lack of need) for boundaries in home-based telework arrangements was also examined along with the process of establishing boundaries and its problems and consequences. Based on a qualitative analysis of interviews with 14 employees in a Swedish municipality, the results show that individuals in home-based telework arrangements handle the interaction between work and non-work (and its possible reciprocal intrusion) by (re)establishing boundaries. Boundaries in time, space and in activity were identified. Although the majority of literature concerning the work-home interaction in telework arrangements has focused on three types of boundaries: spatial, temporal, and mental/psychological, this study emphasizes the issue of mental boundaries versus mental aspects of boundaries. The interviewees indicated that they developed rituals to get “into” work and to “unwind” after work, which appear to be acts that facilitate the mental transition through the work-life boundary. The boundaries differed in respect to both flexibility and permeability and who they related to, which included oneself, family, colleagues, customer/client, and neighbors. The results also indicated that the employees experienced problems when working at home that were due to the issue of legitimacy. Through the relocation of work to the private sphere, and through the modified control systems (from control via space and time, visibility and presence, to control via work tasks, deadlines, etc), the working arrangement of home-based telework creates the illusion of an expanded trust relationship. The
process of creating boundaries follows as a process of creating order and legitimacy.

**Study III. Conflict vs. facilitation in the work/non-work interface. A study of health and well-being in flexible work arrangements**

As flexible working arrangements do not guarantee autonomy and control at the individual level, the question remains how individuals are able to balance work-life and non-work activities like household, childcare, leisure, and restoration. Perceived conflict versus facilitation and its consequences for health and well-being was investigated in this study, based on questionnaire data from STEM. The results show that work to family conflict was more pronounced than family to work conflict and family to work facilitation more common than work to family facilitation. Both conflicting and facilitatory interaction between work and non-work gave significant contributions to the total variance in outcomes such as life satisfaction and recovery from work, but not to mental health.

**Study IV. Residence in the social ecology of stress and restoration**

In this theoretical article, we relate residence to health and well-being within a social ecological model of stress and restoration. Residence is discussed in terms of demands, coping resources, and responses and opportunities for restoration. The model is used to show how processes operating above the household level can modify the quantity, quality, and distribution of demands resources and restoration possibilities in everyday life, including residence. Home-based telework is discussed as an illustration of these dynamics.
Discussion

The interaction between work and non-work life in home-based telework - On the issues of segmentation versus integration

Love and work: these basic human needs are the foundation for the huge edifice of society. Yet the connections between them are still not fully understood nor managed effectively in the public realm (…) Taken together, loving and working use time and define temporal rhythms, provide identity and meaning, create social standing, and shape values, politics, and public policies(…) Government is definitely in the bedroom as well as in the boardroom, whether people like it or not. (Kanter, 2006:xii).

Although there are numerous studies providing empirical evidence for the finding that the domains of work and non-work are related, the general view that the relationship between work and non-work is segmented has rather persisted due to the historical reasons discussed in the previous chapters (Near et al. 1980, Kanter, 1977, Nippert-Eng, 1996). With the disappearance of the traditional boundaries in space and time in home-based telework, this working arrangement becomes an important object of study through which to explore the conditions and consequences of such working contracts for individuals. These types of working agreements have been the subject of diverse speculations, being viewed, for instance, as the ultimate version of integration, where one can experience the benefits of both worlds – participation in the international flow of information, and the comforts of the protective sanctuary of the home (Huws, 1991, Forester, 1989). Even if such speculations seem unrealistic, the question arises whether this could constitute a re-integration of the relationships between the two domains.

In general, the results from the four studies included in the current thesis show that the domains of work and non-work interact with each other in different ways. Aspects of segmentation, compensation and spillover can all be relevant, as can aspects of conflict and enhancement. Time and energy also come into play, and can contribute to stress when the domains compete for them (conflict perspective), just as engagement in multiple roles may provide benefits and lead to enrichment (enhancement perspective). However, the models lack a concept of boundaries. Accordingly, the results from the studies included in this thesis, show that the employees create their boundaries and that they are important for several reasons, which will be discussed in the following sections. First though, one issue that emerged as central in the examination of integration versus segmentation will be discussed, namely the issue of what is being integrated or segmented.


Work and non-work activities and the possibility of combining tasks in home-based telework

Upon reviewing the models and theories discussed in the introduction, we can see that the objectives focused on regarding the relationship between work and non-work differ, as they vary among, for example, the aspects of emotions, skills, behavior and attitudes. However, the results from Study II indicate that there is another relevant dimension: that which includes the basic components and aspects of the work and non-work activities.

Since ancient times, philosophers and scientists have thought about work and its contents, and there are numerous definitions of work. According to Aristotle, work is the process of theoretically producing the result before producing it in material. In the current context, the fact that human work consists of both physical and mental activities is considered important, since these activities involve different conditions and are ruled by different boundaries, or aspects of boundaries. Work tasks such as, for example, writing a report demand both mental and physical activity. Household work such as cleaning, washing the dishes, and preparing meals also include a physical as well as a mental aspect. However, they do differ in character when it comes to the degree of mental concentration involved (cf. Harvey, 1999; Klingberg, 2007). While writing a report calls for quite a high degree of mental activity and effort, household activities consist of repetitive and routine exertion, which generally require less mental concentration. Furthermore, household activities are predominantly characterized by a strong cyclical structuring of activities, and the sequencing and synchronization of different tasks (Harvey, 1999).

Study II demonstrated that it is possible to perform a physical activity in one domain while also performing a mental activity that belongs to the other domain. The interviewees reported performing activities in the household (laundry, washing, etc.) that were of a routine character and therefore could be performed at the same time as mental work activity. Most respondents reported engaging in special activities that suited them during their work breaks over the course of a teleworking day, which all evaluated positively. Some said that these special activities even made their paid work more efficient (cf. Hultén, 2000, Mirchandani, 1999). Thus, it seems as if the performance of a work task which requires a high degree of mental concentration may profit from changing to a physical work activity of a routine character when mental concentration limits are reached. These results indicate that this aspect of home-based telework brings with it advantages for the employees and can therefore be seen as a form of facilitation or enrichment.
for integrating the domains. However, from a more critical perspective, this issue may have consequences in the long run and lead to the work domain intruding on the non-work domain (cf. O’Driscoll, 1996; Frone, 2003; Grzywacz & Marks, 2000).

In conclusion, different activities require different levels of concentration (cf. simultaneous capacity, Klingberg, 2006) and, accordingly, different investments of time and energy. This makes it possible to allocate resources to different domains. In home-based telework, it is possible to physically allocate activity to one domain and mentally to another domain according to preference. From a critical perspective, this working arrangement can involve an intrusion of work on home and non-work (cf. Coser, 1974; Meissner, 1971), from a positive perspective it can be a form of enrichment or facilitation.

The concept of overlap

The issues of the previous section are partly connected to the concept of overlap. In the questionnaire study (Study I), the respondents were asked whether they experienced overlap and, if so, to evaluate it according to the three dimensions of space, time and mental space. The results show that all respondents experienced overlap to some degree, spatially, temporally, and mentally. The majority of the respondents tended to favor low overlap, which indicates a preference for keeping the domains separated. However, a large number seemed indifferent to the degree of overlap, and some did evaluate it positively. This result is similar to those of Ahrentzen (1990). The results are interesting in that they give a notion of the complex issue of overlap and the differences in its components. This can be inferred from the observation that employees at times chose home-based telework due to its potential for flexibility, integration and overlap, but did not necessarily evaluate overlap as something positive, as they seemed to prefer having boundaries at least to some degree in some of the dimensions. Nevertheless, it is clear that the concept needs further development in order to better reflect the characteristics of this phenomenon.

The employees in Study I were highly educated experts in their field. The prevalence of mental overlap may be a reflection of the intellectual and mental character of their work, a type of work which can be more difficult to detach from (Sonnenstag, 2001). Furthermore, the temporal and mental overlap reported among the respondents in Study I may be associated with the development of “lean” staffing practices in Sweden during the 1990s (cf. Johansson, 2002), which may have driven these employees to work during non-work hours.
In regard to the concept of overlap, one further issue appears relevant. Rather than being easily allocated to either the work or the non-work domain, a number of activities seemed to fall under both domains. For example, activities such as finding information on in the internet, or baking a cake with children that is then brought to work, relate to both domains. In such instances there is an overlap of activities and goals in the dimensions of time and space.

The concept of boundaries

In general, all of the studies included in this thesis show the relevance of boundaries. The results discussed in the previous section reveal a preference for keeping the domains separated to some degree in the different dimensions. An example of this is found in the results from Study I concerning employees’ actual spatial arrangements within their homes, which showed that, with the exception of a few respondents who did not answer the question, all had arranged a delimited area of a room or a separate room as their workspace. And, although the way in which the interviewees in Study II constructed their workplaces differed due to individual preferences and social and environmental circumstances, boundaries played a crucial role for them all. While one man chose to follow the schedule of his regular workplace regarding when to have coffee breaks, and when to stop working, etc., most preferred to alternate work and domestic activities in other ways that were effective for their working conditions. This included taking breaks when it felt appropriate for the work task or when they needed a break from a mental task.

Most literature on home-based telework focuses on two types of boundaries: the boundaries in space and time (Rothbard, Phillips & Dumas, 2005). Results from Study I and II showed that one way the employees in these samples created space boundaries was by reserving a room or part of a room for work. Time boundaries, on the other hand, were often created by using schedules for when to work. In Study II, a further type of boundary was identified: boundaries in activity. Boundaries in activity apply to the degree of appropriateness associated with the activities performed while working at home. For instance, the possibility of dealing with household activities during a teleworking day was generally evaluated positively, however performing such activities also created problems for some who felt that others suspected them of neglecting their paid work. These results echo the previous findings of Steward (2000) and Mirchandani (1998) who found that flexible work which involved synchronous work and domestic activity is associated with guilt. This may have to do with the fact that the norms for appropriateness of activity in such situations are less established and less clear than they are for the
dimensions of time and space. A few did reject the notion of doing any kind of household activity, while others mentioned certain selected activities they used to do in this way. Among the latter, doing the laundry and washing the dishes were the most commonly cited as being appropriate. Some of the other activities mentioned were walking the dog and picking up the children from daycare or school (and then continuing to work later). It seemed as if whether a household activity was perceived as appropriate or not depended on the nature of the activity in terms of the level of mental concentration needed. For instance, monotonous activities or activities that could be accomplished (partly) synchronously to work tasks (e.g., doing laundry, running the dishwasher) were often mentioned.

The results from Study II also indicated that boundaries consist of both a physical and a mental aspect. In some of the literature, mental and/or psychological boundaries are discussed (e.g., Clark, 2000, Hall and Richter 1988, Ashforth et al., 2000). Clark defines psychological boundaries as “rules created by individuals that dictate when thinking patterns, behaviour patterns and emotions are appropriate for one domain and not the other” (2000:756). Different socialization processes create norms with regard to when special thoughts, behaviors, and emotions are appropriate or not. However, the rules governing thinking patterns and emotions can presumably only be controllable to a certain degree. For instance, it can be difficult to control one’s thoughts or perform concentration-intensive work tasks after being interrupted by individuals or elements in the surroundings (cf. Kahneman, 1973). Therefore, it seems suitable to complementary analyze these processes as mental aspects of boundaries. The spatial movement from a workroom to a leisure room (crossing a boundary physically), for instance, may lead to a mental switch from work thoughts to home thoughts. Similarly, looking at a clock (time boundary), signaling the end of a working day, may bring about a changed mental focus. However, the parallel change physically and mentally, may not be the case. Rather, thoughts of work can linger on in the non-work domain.

The mental aspect of boundaries was further indicated by another phenomenon, namely the creation of routines that helped shift thoughts from home to work or vice versa. Similar to the findings of, for example, Mirchandani (1999), many interviewees in Study II described a procedure they had developed in order to ease the start of their teleworking day. For instance, they would read the newspaper, make coffee, get the mail, enter the workroom, check email, etc. They normally would end their teleworking day with some “close-up” procedures. However, the end of a teleworking day was sometimes influenced by other family members coming home. These procedures seemed to function as a replacement for the psychological aspect of commuting (Hall and Richter, 1988), which involves distances in time, space and activity. That is, they seemed to facilitate the mental
shift from one domain to the other (cf. van Gennep, 1965, Mirchandani, 1999; Ashforth et al, 2000).

The boundaries created by the employees could differ according to flexibility and permeability. Temporal flexibility, for instance, was found in those cases where respondents worked during their lunch breaks in urgent situations. The flexibility and permeability of boundaries has also been found to relate to a further conceptual component, namely that boundaries are created and directed towards someone or something. Accordingly, boundaries can be directed towards environmental elements, family members, neighbors, colleagues, clients, customers, etc. Moreover, in this study, it appeared that the flexibility and permeability of boundaries was affected by the objects towards which they were created. This was witnessed in the selective permeability of certain boundaries, as when a boundary was impermeable to clients (they were not allowed to call during a teleworking day), but permeable to colleagues (they were allowed to call).

Furthermore, in some cases, the boundaries were shown to be “movable,” such as in the case where a previously selected day for working at home (Friday) was changed to another workday (Wednesday) after experiencing problems with family members who had special expectations for Fridays. The construction of the workplace in the home seemed to involve a coping process in terms of “constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of the person” (Lazarus & Folkman, 1984).

**Modified control and trust relationships**

Results from Study II reveal that the contract of home-based telework creates an ambiguous situation. Generally, when an employer’s ability to exert control is limited (as it so often is with telework), she or he must reasonably be willing to rely on trust (Aronsson & Karlsson, 2001; Allen & Wolkowitz, 1987, Mirchandani, 1999). The interviewees in this study indicated that they felt privileged since they were trusted to work at home, beyond the sight and presence of managers and colleagues. Thus, the location of work in the home and the disappearance of traditional control mechanisms appear to give this work arrangement the character of an extended trust relationship between the employer and employee. The gratitude the employees experienced in connection with this led them to wish to reciprocate in some way. None of the interviewees in the study (Study II), for example, charged their employer for their teleworking expenses, such as the costs of telephone calls, computer equipment, or electricity, claiming it was one of the concessions of working under such a contract. In contrast, they sometimes felt
distrust from their family members, colleagues, and neighbors over whether they were able to actually do an equivalent amount of work in their homes to what they would have done in the organizational workplace.

**Boundarylessness disciplines, while boundaries legitimize**

The findings of Study II show how home-based teleworkers construct the workplace and their work within their homes. It appeared as if boundarylessness works as a mechanism for discipline. When no traditional boundaries exist, they are compensated for by creating others, for instance, by establishing a special working room or certain working schedules, etc. Previous studies on home-based telework have shown the need for self-management and stress the importance of employees organizing their work and non-work lives in such working arrangements (Felstead, 2000; Forester, 1989). Apart from the need to construct and organize, coping with problems that arise in relation to the family or spouse, or environmental problems, etc. appeared crucial. (cf. Forester, 1989:8).

In sum, the studies in the current thesis show the relevance of boundaries. Not only is the act of creating boundaries essential for the development of selfhood and identity (Zerubavel, 1991), it is also a process by which to simplify and order the environment. In general, one can say that human beings seem to create boundaries in order to create social order; we create different categories, within a landscape of categories, in which to place and orient ourselves. The act of creating categories involves creating boundaries around the categories themselves. Besides this, the results also showed that the interviewees felt a sense of trust towards their employers, a trust that was based on the fact that they were allowed to perform their work in their homes. In relation to the social environment, they also experienced distrust and suspicion from their neighbors, family members etc., over whether they were able to do the equivalent work from home. The process of creating boundaries seemed to not only be an act which partly created order for oneself and one’s relations to others, but it also created legitimacy as an answer to the perceived distrust from the social environment.

**Work, home, stress and coping**

*Home-based telework from a stress and coping perspective*
A large group of the teleworkers in Study I referred to travel issues as one of their main reasons for teleworking, and among the respondents with children under 12 years old living at home, 44% gave parental responsibility as one of their main reasons. Interestingly, employees who cited at least one reason that was categorized under parenting or travel reasons tended to experience less effective restoration than those who did not cite such a reason. Although the results were not significant, they bring attention to the question of whether home-based telework involves a trade-off between mitigated stress and constrained restoration. Accordingly, one interviewee in Study II reported that he, in periods of very stressful working situations, had to go out fishing on the lake in order to gain restoration, since he otherwise felt like he had trouble separating from work.

A comparison of the results of how teleworkers and non-teleworkers experienced their homes, in Study I, indicates that the teleworkers tended to experience their homes as somewhat less restorative and more demanding in character than the non-teleworkers. Statistically, however, the results are not quite convincing.

Overall, there were only partial indications of the consequences of home-based telework for restoration. Results from the questionnaire study (Study I) showed that there was a significant interaction between telework status and gender. While the teleworking women reported less effective restoration than the non-teleworking women, their male counterparts, the teleworking men, reported slightly more effective restoration than the non-teleworking men. These results are noteworthy since they may reflect the existence of a “gender trap” in which gender-specific domestic activities are reinforced (cf. Michelson, 2000).

In conclusion, these results illuminate some important aspects of the influences of working conditions and arrangements on individuals’ situations, from a stress and restoration perspective. The home is normally the place that provides significant opportunities for regular restoration. However, just how crucial the home is to a person’s ecology of stress and restoration depends on the determinants of social roles and the characteristics of that person, such as their gender or age. One’s social roles shape their activities and settings, as they help determine with whom, when, how often, and for how long certain activities are carried out. For example, over the past decades, in Sweden and other western societies, there has been an increase of women in the labor force who work while their children are still young. Although there are tendencies indicating men’s increased participation in child care (Björnberg, 1998), neither the women’s role as the primary caregiver for the children, nor the division of domestic labor in the household has changed (equivalently) much. Rather, women continue to carry the responsibility for domestic work and child care. This, in turn, has consequences for the distribution of the total work load, and women’s health (Lundberg & Frankenhaeuser, 1999; Lundberg, 2002).
Conflict and facilitation, and stress and well-being in home-based telework

“A conflict is something one tries to solve, and then it is resolved. Balance demands constant effort to be maintained, an effort that is never completed. Every now and then conflicts can arise while working to keep the balance, but the purpose of the balancing is not necessarily conflict resolution, but rather to prevent them from being expressed, or from arising at all.” (Magnusson, 1996:53).

Results from Study I indicate that home-based telework can be adopted to mitigate stress due to commuting to work and be used to facilitate in the fulfillment of family and home demands. Results from Study III show that individuals who experience conflict between the domains of work and non-work also report health consequences. Those who perceived conflict from work to family reported a lower degree of life satisfaction. Generally, work intruded more on family/non-work than vice versa. The results also revealed the aspect of facilitation between the domains. Accordingly, there were significant associations between facilitation (positive spillover) and immediate consequences such as life satisfaction and recovery, but no significant relationship was found in the results from a long-term perspective as set out in mental health (GHQ).

Nevertheless, one should bear in mind the risks involved in these working arrangements. Accordingly, Elvin-Nowak found women to experience a flipside of flexible working arrangements, in that flexibility was perceived as something positive, which could enable them to manage the two domains more efficiently. On the other hand, when unable to achieve efficiency, it may result in frustration and stress reactions. However, if one succeeds in managing the new conditions of flexibility and boundarylessness, one may develop skills of “time architecture” (Hochschild, 2001) rather than time struggle.

Conclusion: coping with boundaries in home-based telework

In conclusion, although this form of home-based work might create a semblance of a re-integration of work and non-work life, it does not go beyond that. The blurring of boundaries associated with this working arrangement appears to bring about a need for new differentiation – as boundaries are needed to both structure and legitimize work and to mark detachment from work.
Methodological considerations

The relationship between work and non-work has been thoroughly investigated in a number of different areas, including psychology and sociology. The focus of psychologists in this regard has been on employees’ desires and needs as a basis for organizational policies, while sociologists have tended to focus on the organization, structures, and practices of the workplace itself. Because of the dependency in historical impacts, and the closeness of these approaches, this thesis tried to accomplish a dialogue by referring to literature in both fields (cf. Wharton, 2006). This thesis and its empirical work comprise a combination of quantitative and qualitative methods, which should be seen as a benefit in that it makes it possible to approach the issue from different angles and thereby profit from the advantages of both methods. In order to do this, the initial quantitative study was followed by a qualitative study that allowed for a more in-depth investigation.

Studies on the relationship between work and non-work have produced a complex picture of the domains that is influenced by process, person, context and time characteristics (Grzywacs & Marks 2000). Since the studies included in this thesis are cross-sectional case studies, it is only possible to produce a fragmented picture in this context. The samples in Study I and Study III (the questionnaire data) cannot be regarded as representative, since they include a majority of well-educated professionals. Furthermore, as the studies are based on self-reported data only, the information about the independent and dependent variables relied on the same source, which may have led to somewhat exaggerated correlations. The interview study itself may be a source of problems, since the interview situation is important and needs to provide as much “objective” information as possible. Moreover, due to the small sample sizes, statistical power is reduced and conclusions are limited. Nevertheless, the contributions from the different studies, and their various research designs, were of great importance.

A further methodological limitation arose from the conceptualization of home-based telework. The definition adopted in Study I and Study III addressed commonly raised concerns, for example, by restricting its applicability to those who were employees and not including freelancers, and by prescribing the minimum amount of time that needed to be spent working at home. However, most of the non-teleworkers reported working some percentage of the time at home. Arguably, any engagement in paid work in the home can entail the kinds of phenomena studied here. In Study II, the average time spent performing home-based telework was about one workday per week. This might be considered a short amount of time when analyzing telework. However, the implication is that if the
processes of establishing boundaries are discovered, it is likely that they also exist in cases where teleworking is more extensive. Considering the relevance of this thesis (and its results), it is plausible that some of its results or aspects can be applied to others besides home-based teleworkers, namely any employees who take work home to finish – a trend that seems to be increasing (Felstead, 2000; Standen et al., 1999). Hopefully, the studies in the current thesis can serve as a basis for further investigation in this area.

**Implications**

As emphasized in the model of social ecology, when studying the work/non-work relationship in the context of home-based telework, it is important to consider the influence of the household and the process that operate above the household and individual level. For instance, structural and ideological forces behind the development of social arrangements in work and non-work constellations have influenced the possibilities for women and men to shape their work and non-work relationships. Although the Swedish welfare system has been slimmed down in recent decades, it contains a number of social policies that facilitate employment for women and give support to dual-earner families (Johansson, Isaksson, Lindroth & Sverke, 2006). Public childcare, for instance, has been available since the 1970s, allowing Swedish parents to receive about a year of paid parental leave for each child, as well as a certain number of days of paid leave per child in case of child sickness. Similarly, the Swedish legislation on allotted vacation time has been relatively generous, allowing many people an extended respite from the demands of everyday life (Hartig, Johansson & Kylin, 2003; Statens Offentliga Utredningar, 1988). Furthermore, advances in telecommunication structures and the linking of computer networks (broadband) has opened up opportunities for many individuals to perform work from their homes. Still, there is a demand for the development of (innovative) policies within organizations that facilitate the combination of work and other life domains (cf. Jones, Burke & Westman, 2006).

In Sweden, as in most countries, the labor market is divided along gender lines, and household and family relationships are embedded with ingrained traditions of gender differentiation (Lundberg, 1999; Magnusson, 2006). And, although there are studies showing little or no gender difference as relates to perceived work-to-family conflict (Frone, 2000; Frone, 2003; Grzywacz & Marks, 2000;), gender issues should still be considered. For instance, in analyzing gender identification, Magnusson (2006) shows how women’s freedom of movement has historically been, and still seems to be, more limited than men’s, and also shows that women seem to have more difficulties protecting their time and leisure interests from the
encroaching demands of others as compared to men. Studies on total work load show that women commonly perform traditionally female work within the home, while men perform traditionally male work (Lundberg, 1999; Magnusson, 2006). Since, in home-based telework, the location of paid work is within the home, the men and women of the household are likely to be affected by the working arrangement, which may, in turn, comprehend gender-related issues. Indications from Study I show that women may be more susceptible to the downsides of telework, since it may reinforce the traditional gender divisions of household work, and thereby potentially restrict restoration (cf. Michelson, 2000). Thus, there is need for more in-depth gender-related research in this area.

Although the current thesis helps provide some insights into the phenomenon of boundaries, questions remain unanswered. For instance, little is known about how boundaries are related to time and space. Given that work and non-work entail a set of activities that may differ over time, the question becomes how individuals handle the segmentation and integration with regard to specific activities. It is reasonable to assume that individuals have or develop a system of priorities that is based on preferences, desires, or constraints included in the life domains. The interview study, for instance, contained examples of the different ways and reasons behind drawing boundaries in relation to vacations, weekends, and evenings, and the different ways of forming boundaries in relation to technology such as mobile phones, e-mail, etc, as the following quotation illustrates:

I mean, personally I think that you are in the wrong in that case. If you don’t have, your boss demands it because of your work tasks, or if you are the boss and in some way, that it is clearly said that you should be available. But to in some way put it on yourself and think that I should... Yes you try, and you feel all the time that, that pressure or whatever you want to call it, to be available. And in some way we live it, at the same time there are the warning signs you know, like, is it good to be so available. So I create it, you know, and when I have done that to a certain extent, I can’t back down later. (Interview 14)

Sometimes the issues of when to draw boundaries between work and non-work/private life were seen as problematic. As it is very important that individuals are able to maintain their freedom of choice when it comes to these issues, generally speaking, a debate on the status of existing or non-existing norms could be enlightening. The establishment of a forum within organizations or the media for the discussion of norms and the consequences of new demands may lead to the development of better approaches for reducing the stress that results from insecurity and the lack of comparability in this area.

A further issue of importance concerns the amount of time spent working at home. None of the employees in the present studies worked at home full time. They
all had a place to work at the organization they were employed with as well and could alternate between working at home and at the traditional workplace. Most of them had only one day or two days in which they worked at home. Studies on home-based teleworkers who perform all of their work in their homes show that these workers tend to experience feelings of isolation and often have a desire to escape the confines of their homes (cf. Forester, 1989). In a critical report, Forester describes his own experience as a full-time home-based teleworker as follows: “the author went through a familiar cycle: an initial honeymoon period of two to three years, which was accompanied by feelings of elation and high productivity, was followed by a less satisfactory period which was accompanied by feelings of loneliness, isolation and a growing desire to escape the ‘same four walls’” (Forester, 1989:9).

Future research may profit from investigating the characteristics of the physical and mental dimensions of work activities, especially as they relate to the various demands within the work and non-work domains. In this, other relevant research, such as that relating to psychobiology and studies on the limits of concentration capacity, optimal arousal (Frankenhaeuser & Johansson, 1981), and cycles of stress and restoration, can be worth consulting. More needs to be known about what the conditions are that serve to enhance such work, and about the positive effects of physical activity in this matter. Work-life integration needs to be fostered so that more can experience “a satisfying, healthy, and productive life that includes work, play, and love” (Kofodimos, 1993:p.xiii)

In conclusion, the relationship between work and non-work primarily features a larger or smaller degree of integration rather than complete segmentation. Boundaries play a crucial role and their influence is felt on a number of different levels. People need boundaries and create boundaries, which may be the case more than ever today as we face challenges such as increased demands, more intense work and non-work situations, and job insecurity.
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