

## **HCI at the boundary of work and life**

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### **Published version**

GRÖNVALL, Erik, CIOLFI, Luigina, AVRAM, Gabriela, ROSSITTO, Chiara and BARKHUUS, Louise (2016). HCI at the boundary of work and life. *Personal and Ubiquitous Computing*, 20 (4), 481-485.

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# Editorial: HCI at the Boundary of Work and Life

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Keywords: Editorial, work, non-work, leisure, work-life balance, mobile devices, civic duties, boundaries, security implications

**Abstract.** *The idea behind this Special Issue originates in a workshop on HCI and CSCW research related to work and non-work life balance organised in conjunction with the ECSCW 2013 conference by the issue co-editors. Fifteen papers were originally submitted for possible inclusion in this Special Issue and four papers were finally accepted for publication after two rounds of rigorous peer-review. The four accepted papers explore, in different ways, HCI at the boundary of work and life. In this editorial, we offer a description of the overall theme and rationale for the Special Issue, including an introduction on the topic relevance and background, and a reflection on how the four accepted papers further current research and debate on the topic.*

## 1. Theme and Rationale for this Special Issue

Over the past 20 years, computing power has reached out of the traditional and rather location-bound PC, as digital technology has become embedded in a variety of artefacts and activities and has permeated nearly every aspect of everyday life. Computing power is today a paramount aspect in many non-workplace related situations, ranging from leisure to domestic activities and to private spheres of life, such as personal health management. This shift in technology use has also been a topic of HCI and CSCW research, and both fields have extended the range of domains they focus on, and the variety of applicable situations of use for interactive systems. Some examples of this research include studies focused on specific private life settings, such as family communication, and on the role of technology in the management of a person's end of life [1]. Other examples are research on how

work practices are blurring into private spaces, on work that is performed at non-permanent work locations (e.g. work on the move [2]), and on professional practices overlapping peoples' private spheres of action and interaction (e.g. home care [3]). Interestingly, CSCW has also extended its boundaries from its traditional focus on workplaces to study different leisure activities - from tourism, to music sharing, to game playing [4,5].

Thus, as digital technologies and the challenges of their adoption, usage and appropriation pervade our lives, they become a constant and fluid presence in people's everyday practices, rather than tools used merely in specific work vs. non-work situations [6]. This has been addressed by research looking at work/life balance and sustainable lifestyles [7] and by studies looking at the socio-material practices around the use of phones in work settings, at how they redefine the boundaries of the workday, and at the expectations concerned with co-workers' availability [8]. There is currently an interesting ongoing debate regarding how to look at this blurring of practices, spheres of life and expectations: is this a problematic issue that should be addressed, or a new way of working and living that people are increasingly embracing? These are open questions in need of further research. This debate echoes also ongoing work in the social sciences aimed at characterizing the increasingly fluid and shifting boundaries between work and non work, in terms of spaces, time management and boundary making [9,10].

Technological changes make it increasingly difficult to keep work and life separated, to the point that attempting to achieve work-life balance might be counter-productive or more demanding than managing the blurring between them and developing a personal strategy to do so. Studies on the use of mobile phones, instant messaging and social media have shown how the same communication channel is often used for work and private activities, and almost at the same time [11]. For example for certain typologies of work, such as that of freelancers, mobile technology is used to support both aspects of their life and it is difficult to see a neat separation [12].

Mobile technology and mobile interaction have often also been a frame for looking at these phenomena, linked to the idea of "mobilization" of practices as well as of infrastructure, and mobilities studies have been the frame for examples of existing research on shifting patterns of home life and work life physically, temporally and organisationally [13,2]. Overall, with regard to the blurring between work and private domains, there is research interest in how people manage to do their work "despite" interruptions. However, the blurring might not necessarily be disruptive and/or avoidable: it might be something that people are willing to put effort in, or something that is accepted as part of everyday life and dealt with through different strategies.

The field of Human Resources has naturally also looked at the notion of work-life balance, whereby work and life are seen as two things that should have some distinct separation and certain guidelines should help workers achieve it. This however can be considered an artificial distinction (e.g. is it always a positive thing when the two are separated, rather than when they are mixed?). Furthermore, a balance between activities might not be achieved by segregating the two, but by allowing for some flexibility, where the concepts of time and space at work are increasingly fluid [14]. Some HR studies have also found that work-life balance does not always improve organisational performance by reducing conflict, but that work-life balance policies can affect organisations in multi-faceted ways and not always for the better [15].

Finally, another example to consider when discussing work and non-work situations and balance, are situations when one person's home is another person's workplace, as in the case - for example - of referred homecare. When the home becomes a shared space for different activities, including professional care, it may happen that one person's activities within the home invade other people's activities and routines within the same space [16]. Laws and regulations designed for workplace safety are also transferred to the private home environment and may change the private-workplace ratio of a referred care receiver's home. This is not only evident in, for instance, the professional activities performed in the private home, but also in the technologies introduced in order to support professional care activities [16]. Hospital-like beds that can be raised and lowered can for example be installed in the home, to support and ease the care-workers' activities. This means that people can no longer sleep in their own bed, maybe not even in their original bedroom. If they have a partner with whom they normally share a common bed, they may no longer be able to sleep next to each other in the new arrangement. The spatial layout and organisation of private activities in the household becomes affected by how the home becomes a site for professional care. However, technology can also provide different care stakeholders with new possibilities to collaborate across organisational, social and temporal boundaries [3]. Telecare and video-calls allow patients to connect with a healthcare professional from the home or workplace. These remote communication technologies may provide much freedom to patients as they do not have to undergo lengthy travels to a hospital and, from that perspective, the technology may have a positive impact on their perceived quality-of-life [17]. Remote care technologies may however create the need for negotiations in terms of placement of the technology within the home, but also for the planning of, and availability for online meetings and other professional activities that must be woven into other everyday life activities.

Another interesting example of the reconfiguration of boundaries between home and the workplace is represented by the emerging practices around the HOffice, a network of people opening up their homes to strangers for working-related activities.

These phenomena raise interesting issues on how homes are turned into (collaborative) workplaces, and on the cultural and social aspects inherent in the idea that someone's home can be several people's shared workplace.

For a long time, the rhetoric of work-life balance has seen the compartmentalization of work time and non-work time as a desirable outcome in any situation and for any person. While this might indeed work for some, it does not consider the fact that the differences between work and non-work moments are not clear-cut. For example, not all non-work can be defined as leisure (see Verne and Bratteteig, this Special Issue), while the separation of work and life and of the time assigned to each is not a desirable strategy for everyone. In the work of de Carvalho [18], it is shown how integrating work and non-work activities is seen by some as a coping strategy to be able to attend to both work and non-work demands and aspirations. Similarly, Cioffi, Gray and D'Andrea [2] show that knowledge workers configure their personal and professional places to support both a blending and a separation of work and life and of the social relationships that characterize each. The evidence presented in this body of work suggests that, as the permeation of work and life seems almost constant, particularly in knowledge-intensive professions, achieving a suitable pace of life may not be the result of separating work and non-work as an optimal strategy for everyone, but of being able to manage the desired degree of integration and/or separation according to one's needs and preferences. In this Special Issue, Susanne Bødker discusses the plasticity and the relational nature of space, time and activity boundaries.

The integration/separation of work and life is achieved not only by using a variety of technological tools for this purpose, but also by deliberately avoiding to use technology and/or connectivity (for example, when going offline or when working with analog tools such as pen and paper is the chosen solution for dedicating oneself to a specific activity for either work or personal reasons). In this respect, digital technology cannot be seen simply as an enabler for achieving a desired pace of life.

Similarly, the collaboration and social interactions that digital technologies mediate also span across work and life domains [2]; for example, the “infrastructuring bricolage” observed in the practices of highly mobile workers relates to their strategies for enabling both solo and collaborative work, and both professional and personal interactions [19].

Furthermore, studies of technology-supported distributed work practices in various settings (e.g. software development, finance, design) have shown that members of distributed teams who spend some of their work time socializing and getting to know each other perform better in crisis situations [20]. Therefore, sharing leisure time and getting to know each other leads to improved collaboration and learning processes [21]. Often, members of distributed teams invest their personal time in work projects, extending or shifting their work schedules to overlap with the working hours of colleagues in other time zones, checking the status of ongoing processes or work email from home in the evenings or during the week-ends, and even accepting urgent tasks during holidays abroad. Plans for taking time off work for activities such as doctor appointments, family events or weekends away, are usually communicated to the members of the distributed team for awareness and coordination purposes [20]. Working from home one or two days a week can reduce the time spent commuting and allow more time for family related chores. For instance, many of the informants in the Johri study [22] saw work distribution, a flexible work programme and the possibility of working from home ‘as an opportunity to rethink how they worked and changes they could make to make their lives better’, referring to a mix of personal and professional circumstances.

Another significant aspect is that of free labour, which is usually not perceived as work, but rather as leisure. As pointed out in [23], it is difficult to distinguish between work and leisure when the same tools and devices are used for both. At the same time, volunteering for specific tasks can dissimulate work one enjoys under the name of “fun”. Contributing to Wikipedia, posting reviews on sites like Trip Advisor and Amazon or maintaining a Facebook community page are seldom regarded as work. Indeed, recent studies of volunteering [24,25] have found that the extensive availability of mobile devices, social networking services and other types of ICTs are affording more flexible and spontaneous opportunities for volunteering. Giving help voluntarily is an activity that happens both in the work and in the private life spheres, and although it is widely recognized as work, volunteering has gone beyond the traditional organisationally-affiliated settings (such as community organisations, charities, etc.). Technologies that primarily support either work or social structures are chosen and assembled ad-hoc in a diverse range of volunteering settings (from academic and clerical help to household, well-being and financial help).

Considering all the aspects we have outlined and their implications, the blurring of work and non-work activities is clearly a complex issue for contemporary HCI research. We believe that there is room to bring the study of these complex practices further into the field - as more work is needed on how people coordinate and interact when work, personal and leisure tasks are intertwined with each other, and how to address this complexity through design.

## 2. Summary of Papers

Four papers were selected for inclusion in this Special Issue on “HCI at the Boundary of Work and Life”.

Thomas Ludwig, Julian Dax, Volkmar Pipek and Dave Randall have authored the paper entitled “Work or Leisure? Designing a User-Centered Approach for Researching Activity ‘in the Wild’”. Here, the authors argue that the use of mobile devices across private and work contexts calls for new approaches enabling us to capture the ubiquity of such use. The authors explore the combination of different approaches to data gathering and analysis enabling both participants and researchers to collaboratively engage with the research project. In this regard, they introduce a research framework called ‘PartS’. The framework enables the collection of in situ information about individuals and their context (i.e. work/personal), and offers the opportunity of collaborative discussions about the information collected.

In “Do It Yourself Services and Work-like Chores. On Civic Duties and Digital Public Services”, Guri Verne and Tone Bratteteig deal with something that for most people is neither paid work nor leisure, namely paying and managing taxes. The paper examines an online self-service tool for the civic duty of doing tax returns, and the effects of tasks automation and service co-production. The introduction of a digital service for Norwegian taxpayers automates some tasks, but also introduces novel tasks for the citizens. The authors have co-listened to calls made by citizens to the tax authority’s call centre as they requested assistance in performing tax-related chores. The authors describe how a designer of digital services for co-production must carefully consider what tasks to automate, and what tasks to delegate to the service customer/user. To automate as much as possible in a digital service may not always be the most effective strategy - as they authors exemplify in their paper. While automation may simplify routine tasks, it may also limit citizens’ overall understanding of a public service, and, as a possible consequence, hinder citizens’ active and informed participation in democratic processes. Verne and Bratteteig contribute with their paper to the field of Service Design and with important aspects to consider when designing for service co-production, automation, and civic engagement in activities being part of unpaid work chores.

Susanne Bødker contributes to this Special Issue by reflecting on a series of case studies that she and collaborators have conducted over a number of years (“Rethinking Technology on the Boundaries of Life and Work”). Bødker tackles the concept of “boundary” when talking about work and non-work spheres of life. On the one hand she critiques some of the views that see certain types of boundaries (e.g. work and life boundaries) as being idealised, and on the other hand she also critiques the proposition that a complete blurring of boundaries may be a desirable outcome of Ubicomp innovation and “always on” culture. Using examples from these case studies, she characterises boundaries as part of human practices, and as rich and dynamic in terms of time, space and activities.

The fourth paper was authored by Debora Jeske, Pam Briggs and Lynne Coventry and is titled “Exploring the Relationship Between Impulsivity and Decision-Making on Mobile Devices”. Jeske, Briggs and Coventry focus on mobile technologies use as part of both work and non-work, and discuss the security implications of mobile technologies use in the context of blurring boundaries between work and life. They present evidence from a study on impulsivity and decision making while using mobile devices that shows how security risks may be incurred. The study draws a number of

considerations on how better design can make such risks visible and can support enhanced deliberation to contrast impulsivity.

The editors of this Special issue hope that their editorial and selected papers will contribute to a reflection and critical discussion about the ongoing discourse on HCI at the boundary of work and life.

## Acknowledgements

We would like to thank all the reviewers who have assisted with their insightful readings and comments on the submitted papers. We would also like to thank Springer, the Personal and Ubiquitous Computing Journal and the editors for hosting our Special Issue.

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