Biographical Stories of European Women Working in ICT

Andrea Birbaumer
Vienna University of Technology, Austria

Marianne Tolar
Vienna University of Technology, Austria

Ina Wagner
Vienna University of Technology, Austria

INTRODUCTION

There is a deep gender imbalance in information and communication technology (ICT) professions which are only about 17% female (compare Valenduc et al., 2004, p. 19) and, simultaneously, an unsatisfied demand for ICT professionals at intermediate and high levels. Although varying in different sectors and countries, a gender imbalance and a skills shortage are common features of the ICT labour market in Europe. This is an obstacle to the development of the knowledge economy and the achievement of social cohesion.

The project WWW-ICT[1] implements an integrated approach to the various aspects and dimensions of gender gaps in ICT professions, covering explicative factors linked to education and training, working and employment conditions, professional and technical culture. Most existing studies have limitations and gaps. They are often limited to classical computer professions, while WWW-ICT intends to encompass new professions linked to new communication technology, also taking into account the vocational training system. Studies of the shortage of ICT professionals are mostly centred on the demand/supply relation, while we focus more on the role of professional models and professional trajectories as a factor of integration or exclusion.

In general terms, employment in the ICT sector has been growing very markedly across the EU in recent years. The sector is increasingly dominated by specialist firms, which have taken over the provision of computing services for client companies. Computer services in the EU are dominated by SMEs; the majority of computer services businesses are micro-businesses employing less than ten employees (Björnsson, 2001). Despite the predominance of micro-businesses, there is a huge concentration of employment in bigger companies. This is the context within which women are employed in ICT.

BACKGROUND

Under-representation of girls and women in computing is a reality and "the reasons why women are not attracted to engineering in great numbers are subtle and complex defying monocausal explanations and solutions" (Adam, 2001, p. 40).

Much of the current discourse around the gender gap in computing is grounded in the debate on women in science and technology that dates back to the early 1980s. This debate revolved around some of the fundamental theoretical difficulties of addressing gender issues. One of these difficulties is to do with a dualistic notion of the world. Criticism of a dualistic construct of gender led to an increasing interest in "difference" (rather than sameness) on the one hand.

On the other hand the first studies of practising women scientists suggested that women choose science for similar reasons as their male colleagues: for the adventure of abstract thought, for the intellectual pleasure that analysing a problem, looking for details, isolating and manipulating variables provide (e.g., Carter & Kirkup, 1990). It was argued that people with the bodies of women do not necessarily have the minds of women. Evelyn Fox Keller (1987) was among the first feminist scholars who used

gender not as an empirical category but as an analytical tool to elaborate and concretise the idea of difference and dissent within the sciences. Feminists introduced notions such as polyvalence, epistemological pluralism, and partial translations into the discourse on gender and technology (Wagner, 1994).

Much of this older debate has been absorbed by Judith Butler's notion of gender as "performed" (Butler 1993). It has been taken up by many feminist scholars and, interestingly, extended to technology. Jennifer Croissant argues: "We gender a technology by painting it blue and handing it to a boy. We gender the boy in this interaction, providing a frame of reference for appropriate technological and masculine identity associations and expectations. We of course provide a frame of reference for the girl to whom we do not hand it. We perform with technologies. The technology, with its scripts, schemes, and codes, also performs us in that we become subject to its affordances designed or there by happenstance when we start the performance" (Croissant, 1999, p. 278).

This argumentation leads to a second difficulty of theorising about technology and gender. Assumptions about the technologies that are examined in studies of gender differences are often quite general and superficial. In an early essay on women and technology Knapp (1989) argued that women's ways of doing and thinking are not independent of the object world. Her main criticism of studies of women's relations to the natural and technological world was that these almost exclusively look at the subject—women—disregarding the interactive nature of appropriating a technology. Not only are computers different from other technologies in ways that may affect the ways women and men interact with them. The range of computing applications dramatically expanded during the last decade and with it the range of computing professions. Looking at gender as performance and performed and at computers as highly specialised and varied technologies, has consequences for the method of 'measuring' gender differences. Kay (1992) has argued, "that to fully understand whether gender differences exist in human-computer interaction, a qualitative, contextual, developmental approach should be employed to examine specific tasks. He stresses that without this comprehensive understanding, researchers will continue to identify only pieces of a very complex puzzle" (quoted in Mitra et al., 2001, p. 228). A good example of such a contextual approach is Linda Stepulevage's (1999) reconstructing her own making into a technology expert using the method of autobiographical narrative. She emphasises the actual everyday practices that surround technologies—"people making and doing things." Understanding this "making and doing" is tied to particular locations and contexts (Stepulevage 1999).

It has been argued that in IT as a relatively young field women would not face the same barriers for working careers existing in other fields with a traditional male dominance. Ahuja (2002) argues that this viewpoint does not "adequately take into account the variety of structural and social factors that inescapably and inevitably shape women's careers in IT throughout industry and academia" (p. 22). Noticing a lack of academic studies on gender differences in IT careers she claims that it is important to understand the role of women in the field of IT and "how or if IT differs from other professional endeavours in offering opportunities to women" (p. 21). With that aim she proposes a conceptual framework that covers social factors as well as structural ones influencing women's professional careers in IT.

METHOD

Our qualitative research is based on biographical interviews. The analysis attempts at preserving the biographical aspect of informants' narratives while at the same time looking at more general patterns across individual biographies.

The aim of a biographical interview is to develop an understanding of a person's biography or trajectory—her development as based on opportunities, choices, and individual coping strategies. Crucial concepts are developmental tasks in particular phases of one's life, individual coping strategies in relation to given structures, detours and their implication for the person's biography, transitions (changes of field of work, occupation, life situation, etc.) and life themes (Thomae, 1996) (i.e., topics that emerge in the women's own accounts as crucial for understanding their choices).

The focus of our interviews was on the women's work biographies, with an understanding that these