



Introduction: Gender, Space and Technology

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This thematic section of *ACME* is intended to showcase recent scholarship in geography on the relations between gender, space and technology, featuring the work of Reena Patel, Anne Bonds, Valorie Crooks, Maria E. Fannon and Jennifer Fluri. One of the places where disciplinary interest in this set of themes first came to light was in a double-session at the 2004 Annual Meeting of the Association of American Geographers organized by Mei-Po Kwan and Pamela Moss. The following papers are based on a set of sessions presented at the 2005 Meeting, organized by Kim England and myself, which grew out of the enthusiasm generated the previous year. By drawing this scholarship together in one place, we seek both to showcase what has become a vibrant new strand of research in social and feminist geography, as well as strengthen geography's linkages with Science and Technology Studies (STS).

A growing body of scholarship within and beyond geography has begun the examination of the spatial dimensions of socio-technical systems (Graham and Marvin, 2001; Kwan, 2002b; Wheeler et al., 2000; Urry, 2004). Indeed, the

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discipline's enthusiasm for this topic can be seen with the publication of *Geography and Technology*, a twenty-five essay compendium published by the Association of American Geographers in honor of the organization's centennial celebration in 2004 (Brunn et al., 2004). Though a full review of geography's engagement with issues relating to information technology (IT) is not the purpose of this Introduction, some of the main themes to have emerged in this literature are the ways in which the information economy has changed urban space and social opportunity (Graham and Marvin, 2001; Wheeler, Aoyama and Warf, 2000); how new information technologies have re-shaped our daily routes through space and time (Adams, 1999; Kwan, 2002b); the social politics of geographic information systems (Curry, 1998; Schuurman, 2002; Kwan, 2002a; Kwan, 2002c); and the way in which information technology and the information economy shape and are shaped by social relations of gender, race and class (Boyer, 2004; Downey, 2002; Miewald, 2001; Moss and Kwan, 2004; Smith, 2003). While this last vein represents an especially vibrant and rapidly expanding field of scholarship – addressing questions of gender and mobility in socio-technical systems (Boyer, 2004; Downey, 2002); technology and the body (Moss and Kwan, 2004); and instances of women in marginalized communities using IT as a tool for advocacy and cultural preservation (Miewald, 2001; Smith, 2003) – we feel that as a whole this research has been under-emphasized in the discipline. It is the intention of this section to begin to correct this.

Engagement between Geography and STS has emerged as a lively field of scholarship in recent years (Barnes, 2001; Braun & Castree, 2001; Demeritt, 2001; Law & Mol, 2001 & 2005; Schuurman, 2002; Whatmore, 2002). Scholarship in this vein has begun to explore the range of ways the two disciplines might inform one another; and has generated, among other things, a much more theoretically vigorous understanding of the "more than human world", destabilizing dichotomized understandings of nature and culture as separate analytical categories, and arguing for an understanding of bodies, machines and knowledges as precarious, relational achievements. Building on these insights, we seek to broaden the conversation to examine relations between technology, place, and gender. The papers in this section build on the shared interest in STS and in feminist geography with the ways in which technology plays into the co-construction of meanings about gender and about place (Bondi and Davidson, 2004; Nightingale, 2006). In recent years, feminist geographers have become increasingly interested in both how gender relations are produced in the workplace (Brown, 2004; McDowell, 1997), as well as the processes by which women move into and out of different sectors of the labor market (England, 1997; Kobayashi, 1994; Pratt, 2004). In a related vein, feminist STS scholars have called our attention to the ways in which technology shapes and is shaped by gender relations and gendered divisions of labor (Bray, 1997; Cockburn and Ormrod, 1993; Grint and Gill, 1995; Gorenstein, 2000, Mackenzie and Wajcman, 1985; Wajcman, 1991; 2004; Webster, 1996). This scholarship has illuminated the ways

in which ideas about gender difference can be “built-in” to technology at the design phase (Cockburn and Ormrod, 1993), as well as how work technology constitutes gender relations in and beyond the workplace (Bray, 1997; Gorenstein, 2000; Webster, 1996).

If we are to believe popular culture, the so-called “IT Revolution” has been pitched as a source of increased freedom, with seemingly unlimited potential for connectivity and community building. To be sure, new information technologies such as the cell phone, personal computers, e-mail and the internet are opening up new ways of being (Urry, 2004; Wajcman, 2004). Often, these innovations can lead to increased mobility and the expansion of certain kinds of freedoms for their users. Yet, concerns have been voiced in different quarters of both geography and STS over the extent to which the promises of the information age are being met (Cockburn, 2004; Cowan, 1983; Winner, 1986). Can technology on its own change gender-based relations of power and inequality? Are the goods of new technology being distributed equitably? And, are the new ways of being, which information and communications technologies afford, as good as they first appear?

The articles represented here weigh in on these issues, focusing especially on the IT workplace, and how technology is re-shaping the work of coalition building among groups of women experiencing varying degrees of social marginalization. Reena Patel and Anne Bonds draw attention to the way patriarchal relations of power reproduce in the information-age workplace and provide new spaces and opportunities for challenging those relations. Maria Fannon, Valorie Crooks and Jennifer Fluri address some of the ways in which various kinds of women’s organizations and support groups are using IT to build solidarity and group identity, adding to the fledgling literature on cyberactivism (Meikle, 2002; McCaughey, Martha and Michael Ayers, 2003) the import role the web can play for feminist organizations.

Building on Linda McDowell’s (1997) work on how gender and sexual relations are produced in the workplace and through the experience of labor, Reena Patel’s article examines the physical, temporal, social and economic mobility of women working in transnational call-centers in Mumbai, India. After outlining the geo-political economy of call-centre work, Patel argues that this work has created new geographies of opportunity – and constraint – for women thus employed. In response to the temporal demands of trans-continental commerce, call-centers have stretched the workday, “turning night into day” for large numbers of Indian tech-sector employees, rendering the worksite a key social space and even a marriage market for women employees who must sleep during the daytime. Patel examines how traditional Indian gender relations have been instantiated within Twenty-First Century post- industrial workplaces. Through interviews with call-center employees, Patel notes how these new work environments are marked by surveillance, corporate paternalism and an impulse to constrain women employees

under the auspices of protecting their virtue in a way that harkens back to anxiety about women in public that are a century old and older (Cope, 1996).

Anne Bonds' article retains the focus on call-center work developed in Patel's piece, but re-locates it to rural American worksites. As Bonds argues, these worksites constitute an important (and understudied) site in the new information economy. Bonds examines the performative elements of call-center work, arguing that these sites are about carrying out feminized, emotional labor. Harking back to the female switchboard operators in the early days of the telephone (colloquially referred to as "hello girls"), women constitute the majority of workers toiling in call-centers globally. As Bonds notes, call-center work itself is highly feminised in that it involves relational work of dealing with sometimes angry or frustrated customers. While this work can be emotionally draining, like so many other forms of feminised wage labor it is also poorly paid. At the same time, Bonds argues, the largely female workforce in this sector is carefully trained so as to obscure regional accents, thus offering callers a voice that is marked as female but otherwise socially and geographically unlocatable.

The article by Valorie Crooks examines internet use among Canadian women living with fibromyalgia syndrome. This syndrome is a "troubling diagnosis" for several reasons: there is no cure; it carries with it a wide range of seemingly unconnected symptoms; it is poorly understood; and it affects mostly women. As Crooks argues, the internet provides both an important source of information as well as a means of building support networks over a sometimes large territory for women thus affected. As interviews with patients reveal, the internet can provide an important reprieve from corporeal space when the body becomes a locus of pain and contentious diagnosis. Building on the rise of patient advocacy groups emerging from the women's health movement, Crooks examines the internet and e-mail as important means of building communication and support networks among patients suffering from a disease that is poorly understood. Digging deeper, however, Crooks also notes how the relative ease of access to information on the internet has enabled a shift in the work of informing patients about their conditions from health care professionals to the patients themselves. The expectation that patients participate in their own diagnosis and treatment echoes a more general shift under neoliberal social policy calling for more "active" forms of citizenship, described by Nicholas Rose (1999) and others.

Maria E. Fannon's article considers the role of the internet in the emergence of midwifery as a global movement. As Fannon argues, new information technologies have enabled a variety of changes for a movement based on an activity that is not generally considered "global" in scale (giving birth). Technologically-enabled, trans-local alliances have both expanded midwifery's reach as well as highlighted tensions between different groups with different outlooks within this movement – such as between the older International

Confederation of Midwives, which is based on institutional structures and nation-states, and the newer International *Alliance* of Midwives, which is not. In addition to opening up different possible meanings for what global midwifery might mean, the rise of midwifery at the global scale has had the dual effects of advancing a notion of birth as a universally similar experience, while, at the same time, reproducing geo-political hierarchies in which the “traditional knowledge” of midwives from the global south are differentiated from the modern/scientific methods of midwives from industrialized countries.

Finally, Jennifer Fluri examines the transformative role the internet and e-mail have played in building organizational strength and trans-national support for the Revolutionary Association of the Women of Afghanistan (RAWA). In addition to showing the significance of new information technologies toward building solidarity and communication networks across national boundaries, this study also highlights the need for groups operating in politically volatile environments to be *strategic* about information. In RAWA’s case this has meant maintaining a delicate balance between creating an internationally known web presence while preserving the anonymity of individual members from a government which might wish them harm. Fluri further outlines how members maintain a distinction from individual and group identity, and the utility of RAWA as a means of complexifying partisan and/or over-simplified versions of events offered by the mainstream US media. Against the backdrop of mainstream American media’s awesome power, the voices of indigenous groups being affected by American policy first-hand with interpretations in their own words become an increasingly valuable resource in today’s strife-ridden geopolitical climate.

Collectively, these essays advance the aims of critical geography by showing how different kinds of socio-technical systems are marked by power and – sometimes – oppression, and by showing how that oppression is being challenged in explicit and implicit ways. As these diverse papers illustrate, much work remains to be done in terms of understanding both of these aspects of technological change. Taken together, we hope that these works will enrich both critical geography as well as science and technology studies; building important new linkages between them and opening the door for further work on this set of issues.

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