

This is an accepted manuscript of an article published by Taylor & Francis in *Feminist Media Studies*, available online at <http://dx.doi.org/10.1080/14680777.2012.741872> It is reproduced here with the pagination used in the published version.

To cite this article: Rachel Crowe & Catherine Middleton (2012) Women, Smartphones and the Workplace, *Feminist Media Studies*, 12:4, 560-569, DOI: 10.1080/14680777.2012.741872  
Published online: 21 Nov 2012.

## WOMEN, SMARTPHONES AND THE WORKPLACE

*Pragmatic realities and performative identities*

Rachel Crowe and Catherine Middleton

This paper explores the ways that a sample of professional women use smartphones to manage their personal activities and work responsibilities. It reveals a number of specific, mindful practices used to convey and enable accessibility, professionalism and responsiveness to colleagues and clients, showing how smartphones are used to shape and maintain professional identities. At the same time, women also choose to set boundaries to ensure that the immediacy enabled by their smartphones does not encroach upon their personal relationships in undesirable or unpredictable ways, and to allow them to choose when to engage with work while outside the office. The paper reveals the nuances of smartphone use in this group of women, demonstrating various approaches to managing a potentially disruptive communications device to professional and personal advantage.

KEYWORDS communication; work; family; responsibility; control; identity; smartphone

### Introduction

Our experiences of accessibility and connection with others in our personal and professional lives have been undergoing dramatic evolution as smartphones become ubiquitous. Smartphones are celebrated for affording users flexibility to communicate and access information from multiple locations, offering particular benefits in enabling mobile work. But as feminist scholars begin to question the validity of these claims, arguing for instance that the flexibility made possible by mobile technology must be examined within a broader work/life context (Melissa Gregg 2008), it is suggested that women's use of smartphones in their personal and professional lives involves more than pragmatic management of work and personal responsibilities. In navigating the blurred boundaries of work and home and, for many women, the disproportionate levels of care giving responsibilities relative to their male counterparts, women can use their smartphones in ways that craft particular identities and also define their connections with others.

In this paper, we offer some insights into the ways that eleven women working in demanding jobs in a large Canadian city use their smartphones to engage with work while away from the office. The paper explores the mindful ways these devices are used to exercise control and agency, and investigates whether mobile technology might have an

impact in redefining the nature of what Leopoldina Fortunati (2009) calls the “double work” environment experienced by women managing jobs and families.

### **Research Context**

The smartphone of choice for women in this study was the BlackBerry. From its inception, the BlackBerry has offered highly reliable, portable, easy to use “push” email, making it an ideal device for monitoring communication without a computer and thereby facilitating work outside the office. Although many smartphones now offer better overall functionality than the BlackBerry, when data were collected in 2009 the BlackBerry was popular as a mobile email device/mobile phone and it was used by all the women in this study.

While smartphones are now ubiquitous in many organisations and businesses, to date policies for smartphone usage, when they exist at all, have tended to focus on basic security and cost concerns. Without guidelines or policies setting expectations for use, individuals are left to discover the organisational or professional culture surrounding smartphone use and to develop their own personal practices. Employees recognise that when their employers supply them with smartphones there is an expectation that they will be available outside the office (Ian Towers, Linda Duxbury, Christopher Higgins & John Thomas 2006), but research to date has offered a limited understanding of how women experience and manage this extended work environment. Our interest here is in exploring the ways in which women are developing smartphone use practices to fulfil their responsibilities while performing their specific identities at work and home.

Feminist scholars have long explored the relationships between gender and science and technology (Donna J. Haraway 1997; Sandra Harding 1991), but as technology and social realities change so do questions about their interconnection. Discussions about mobile technology, work, domestic labour and their relation to gender have begun to appear in feminist literature (Fortunati 2009; Gregg 2008), supplementing much earlier work on women’s use of mobile phones (e.g. Lana Rakow & Vija Navarro 1993). There is debate about whether the use of mobile phones and smartphones negatively impacts work and private life (Naomi S. Baron 2011; Noelle Chesley 2010; Towers et al. 2006); with feminist scholars investigating how gender factors into the nature of that impact. While previous research notes that men and women embrace the increased flexibility and mobile work options afforded by mobile technologies, it also draws attention to the tensions and paradox inherent in taking up devices that increase accessibility and create expectations of responsiveness (Karlene Cousins & Daniel Robey 2005; Linda Duxbury & Rob Smart 2011; Catherine Middleton & Wendy Cukier 2006).

Since women are still more likely than men to take on primary care-giving roles within their personal lives (Linda Duxbury & Chris Higgins 2009), and because working women frequently spend more time than their partners managing the domestic aspects of their lives (what Arlie Hochschild & Anne Machung 1989 described as the “second shift”), the implications of mobile work and increased out of office accessibility for women can be quite different than for men. However, to date there has been little attention paid to women’s specific experiences in managing personal and professional responsibilities in the context of mobile technology use. This paper addresses this gap, responding to Fortunati’s (2009) call for research on the “experiences and agencies” afforded to women through use of mobile phones.

We draw on Judith Butler's idea of gender as an identity that is culturally constructed, a narrative that is performed and regulated through the pressures to adhere to accepted social norms (Butler 1990). It follows, then, that as technology and society change over time, the ways in which technology is developed and used will be connected to the ways in which people perform gender; tied into this is the potential for gender definitions to simply be reinforced through these practices or for use practices to contribute to the altering of gender definitions over time. Although complicated by factors such as age, socio-economic status, race, sexual orientation and so forth, we can begin to understand the implications of the usage of mobile technology in relation to gender by taking a closer look at the pragmatic and symbolic use of such technology.

Of relevance here is a blending of scholarship from both feminist and science and technology studies fields. Both areas share a history of "identify[ing] the ways in which socio-technical relations are manifest not only in physical objects and institutions but also in symbols, language and identities" (Judy Wajcman 2010, p. 144). This approach to studying our evolving relationships with technology allows us to more closely examine how roles and identities are connected to technology use. In conceptualising of technology as deriving meaning from social context and, drawing from Butler, gender as performance, Wajcman sees both technology and gender as "products of a moving relational process, emerging from collective and individual acts of interpretation" (2010, p. 150). She acknowledges the potential for women to generate new, beneficial readings of technological devices, and thus of gender, to varying degrees depending on socioeconomic circumstances. It is women's readings of their mobile devices that we explore here, in the context of their daily use of smartphones as personal and professional communication tools.

### **Research Method and Respondent Demographics**

This paper reports on the experiences of eleven female BlackBerry users, interviewed in 2009 as part of a study on the uses of "always-on" technologies within a work context. Respondents worked in various fields, including law, telecommunications, advertising, real estate and event planning. Several worked in the public sector, as bureaucrats or political staffers. These women are members of the middle or upper middle classes, with demanding full-time jobs and family responsibilities. Two were in the twenty-five to thirty-four age range, six were between thirty-five and forty-four, and three were between forty-five and sixty-four. Four of the women in the thirty-five to forty-four group and one in the forty-five to sixty-four group spoke about their children in the interviews, and eight mentioned their partners. The interviews, typically thirty minutes to an hour in length, were conducted one-on-one with the exception of two women from the same organisation and in similar positions who were interviewed together. Interviews were audio-recorded and professionally transcribed. Data presented here focus on understanding the ways interviewees used their mobile devices to manage their work commitments and personal responsibilities. The experiences of this small group provide some insights into specific actions taken by women to use their smartphones in ways that enable them to purposefully manage their communication activities and to maintain, shape and advance their professional identities.

All but one of the women interviewed used a BlackBerry for work purposes. The woman who did not have a "business" smartphone had a personal BlackBerry. The majority worked with businesses or organisations that did not have policies regarding smartphone

use. For the few that did, these policies focused on security and cost; consequently, use practices were shaped by implicit and explicit expectations of their superiors, colleagues and clients, and by professional culture and personal preferences. While one of the younger women had had a BlackBerry for less than a year, the majority had used BlackBerries for four or more years. All had developed definite patterns of BlackBerry use with regards to controlling their responsiveness and accessibility, and signalling their organisational commitment and professionalism.

### **Findings**

Respondents acknowledged that a work-issued BlackBerry came with an implicit expectation of after hours accessibility and responsiveness. Several noted an explicit expectation that they would be available all day, every day. Indeed, the vast majority of interviewees were in positions that would have required after hours work regardless of whether or not they carried a BlackBerry; without a smartphone, they would have simply stayed at the office or worked from a computer at home. Because long hours of work and after hours accessibility were established norms within the majority of their occupations, interviewees did not question the need for them to be available outside of the office. What is interesting is the various ways they used their devices to allow them to define and shape the terms of their accessibility, allowing themselves to fulfil work and personal responsibilities and to convey professionalism.

#### *Responsibility and Professionalism*

One woman summed up a common sentiment about the anytime, anyplace functionality afforded by smartphones, observing “Everything is ‘I’m reachable on BlackBerry.’” But interviewees were not just passively waiting to be reached when needed, many were also using their smartphones to actively engage with work while carrying out domestic duties. They were instrumentally harnessing mobile technologies to allow themselves to maintain a high level of professionalism, responsibility and commitment to their jobs while also fulfilling their family responsibilities.

These women used their BlackBerries to monitor their work environment from outside the office. Some cultures had clear expectations of responsiveness (“If you receive a message at 10:30 at night, it’s expected you’ll respond pretty quickly. It really is.”) But with or without these expectations, respondents chose to make themselves available to colleagues and clients, on their own terms. If a woman could help out with something after hours, if she could provide support or assistance to her colleagues, she would do so. As one explained:

I look in the early evening; an hour or so after I’ve gotten home because some people do stay late so if there’s anybody that needs me for anything... you make a judgement call whether they need you right then and there. And I always look before I go to bed at night. So the SVP I work under, he might need something sometime and if it’s something I can answer for him—he works extremely long hours—if I’ve got the BlackBerry and I can answer I will.

Others reinforced this point, noting that after hours they “look for the urgent things and deal with those things,” responding before bed to the messages they could address, even

when answers were not needed until the next morning. By using their BlackBerries to “handle business efficiently and react quickly,” demonstrating immediacy and responsiveness, women asserted their competence. Not only did they deal with the “super essential” issues, they often acknowledged communication from colleagues and clients immediately, even if action was not urgent.

What one woman described as the “habit of responsibility” is likely what drove several respondents to continue this pattern of responsiveness and availability even while on vacation. One woman noted she would not want to make colleagues wait for a response when they could move on with her input, saying that if it was productive for her to respond while on vacation so she would do so.

### *Control*

Some respondents appeared to take the extension of work into their non-work activities in stride, noting that they could (and did) respond while cooking dinner or socialising with friends. They felt that their friends and family understood their need to be responsive, even if they found it disruptive. A woman running her own business however commented that, “I find it difficult to turn it [the BlackBerry] off. I find it very difficult and I’ve been obsessive about it. It’s because... I don’t work with a partner so it’s me... I have to be on call all the time and that is hard.” Not only does she feel it is critical that she be available and responsive in order to finish her work, she is very aware that her degree of accessibility and responsiveness sends a message to her clients about her commitment to their interests. This comment reinforces the idea of professionalism, but also reveals a sense of lack of control over time and accessibility, made worse by the always-on functionality of a mobile device. Another woman concurred on the issue of controlling accessibility, describing her BlackBerry as “joined to me on my hip. I take it out with me on the weekend when it’s not work time thinking that it’s going to be work related, which usually it will be, but it possesses your life and overtakes everything.”

Despite not feeling in control of their accessibility the youngest women interviewed (who are in the early stages of their careers) were both enthusiastic in conveying the extremes to which they went to make themselves accessible and responsive for work. “Last week we were all sick and we were all in bed on our BlackBerries, communicating with the office... My body was aching to the point where it hurts.” They acknowledged that their supervisor appreciated but did not expect the degree to which they made themselves accessible and available after hours. However, what was evident from the ways they spoke about their experiences and the extremes to which they made themselves available was a drive to become established and relevant within their chosen professional fields and to be seen as such by their supervisor, colleagues, friends and family. By prioritising work communication through their smartphones in all scenarios, this always-on always-accessible technology provided them with a way of signalling the professional identities they were trying to create. Thus, their behaviour and their way of describing their BlackBerry use practices had both pragmatic and semiotic value in furthering their goals to become established professionals and be accepted as such.

Others acknowledged that they could take action to control their accessibility. For instance, one woman remarked “It’s on all the time. I know there are some people here that kind of have set their personal rules where I don’t... I haven’t learned to do that yet.” A respondent with a young child regarded her after hours use practices as something that

needed altering and she was making efforts to change. The challenge of taking on parental responsibilities meant that she was trying to manage work and life priorities, including using her BlackBerry to determine boundaries both in a performative way and a practical way. "I felt at a certain point in my life it did help me to manage a very difficult job and not be in the office... But what I resented it for a little bit is (that) I fell into those bad habits. I would answer an email at dinner... so I had to kind of relearn some good behaviour." The notion of (re)learning good behaviour suggests that women have some agency in controlling their accessibility.

#### *Managing Accessibility*

The women who were older and more established in their careers had different concerns than those just establishing their careers and, as such, had developed different use practices and management strategies, as well as different ways of performing identity. Regarding responsiveness after hours, some of the women explained that they would only check their devices at specific times during the evening. One woman mentioned that she had advised her superior of this practice so that he would know she would be available to help him if needed (reinforcing her professionalism), but not at every moment in the evening. "I put it away in the evening when I get home to my daughter and I try not to look at it until she goes to bed so that I'm not constantly... I think you have to find that balance." A number of respondents also made the choice to turn off their BlackBerries or to set them in a drawer before going to bed.

These practices allowed women to prioritise personal responsibilities and downtime after leaving the office while maintaining a connection to work in both pragmatic and symbolic senses. Work associates, superiors and clients would still largely see them as accessible while those in their personal lives would perceive that the private realm was their priority. It is not clear whether these strategies were fully effective; however, the intention behind the actions and their performance indicated an effort to manage boundaries and set priorities, both for their careers and for their private lives. The women who had young children were the most vigilant about carefully controlling their accessibility and responsiveness after hours.

Respondents also reported selectively managing their mobile communication channels. In only giving an email address (but not a mobile phone number) to clients and colleagues, the women could check the status of their work-related communication after hours without engaging with others unless there was a need for an immediate response. This approach maintained accessibility for clients, colleagues and superiors, reassuring them of presence and willingness to participate in work activities, while also managing the boundary between professional and personal responsibilities. This somewhat arms-length, technologically mediated approach to work allowed the women to simultaneously carry out their varying private and career roles in ways that they felt to be most appropriate for each context.

#### **Discussion**

This paper offers some insights into how women use a specific smartphone, the BlackBerry, to support their work practices. While based on a small sample of affluent, professional women, their experiences illustrate some ways that women instrumentally harness mobile technologies to allow them to actively manage a connection to work while

away from the office. We now explore the findings in the context of existing literature on mobile devices and gender. Mobile devices like BlackBerries have been described as “work extending technologies,” technologies that “facilitat[e] the expansion of the organization’s borders” (Towers et al. 2006, p. 594).

While the usage patterns described here do illustrate that mobile devices allow work to take place in extended locations at extended times, it is not so clear that these devices are understood to be expanding the organisation’s borders. What the data illustrate instead are conscious behaviours on the part of these women to use their devices to enter the work environment, virtually, at times and for purposes that suit them. Many of our respondents are “watching work,” (a behaviour reported by Melissa Mazmanian, Joanne Yates & Wanda Orlikowski 2006) rather than allowing work to be imposed upon them. Most described choosing when, or whether, to engage in work, with some of those who felt less control acknowledging the possibility that they too could set the parameters for their mobile engagement with work. As such, our findings respond to Wajcman, Bittman and Brown’s (2009) call for research exploring the ways individuals control the flow of work and non-work activities within a work/family interface, rather than focusing on more general questions of whether mobile devices reconfigure boundaries between work and non-work activities.

This study provides some insights on why women choose to use their mobile devices to work when away from the office. Duxbury and Smart (2011) note that mobile technologies can be used for impression management, enabling individuals to portray dedication to their jobs by making themselves available to clients and colleagues. This behaviour was particularly obvious among the women in the study who were trying to establish themselves in their careers, but there was a strong sense that all respondents were using their devices to help them “perform professionalism” (Gregg 2011). The women generally indicated that much of their out of office monitoring of work was not essential to their jobs. In choosing to make themselves available they could convey their competence, commitment and willingness to help out as needed, demonstrating they were good and responsible employees. It is likely that this sort of behaviour goes beyond performing basic impression management, reflecting instead a deeper commitment to professionalism, and a desire to do the right thing for colleagues and clients. This behaviour may be a modern, professional version of the relationship maintenance activities observed among women in earlier studies of telephone use (e.g. Ann Moyal 1992).

This study illustrates the ways in which a group of professional women use mobile technology to enable, signal and reinforce work commitment, professionalism and responsibility while away from the office. Unlike Hochschild and Machung’s (1989) notion of a second shift, in which domestic work is conducted separately from paid work, we observed the use of mobile devices to allow women to carry out domestic responsibilities while also managing their employment commitments. Work is conducted outside the office as part of what Rakow and Navarro (1993) called the “parallel shift.”

Almost twenty years after Rakow and Navarro’s study the parallel shift has taken on different characteristics. When Rakow and Navarro investigated the use of cell phones by nineteen American women, their phones were car phones. These phones did not bring work into the home, but did allow women whose work involved car travel to bridge their work and home environments by telephone. Remote mothering could be done from the car, with mothers able to call and be called by their children. At the time, for women, cell phones were observed to be “bring[ing] their private world of domestic responsibilities into their public world of work” (Rakow & Navarro 1993, p. 155).

As mobile phones have evolved into devices carried by people wherever they go, not fixed devices made mobile only by virtue of being placed in vehicles, their ability to support additional types of family interaction has increased. The mothers in our study did use their mobile phones for remote mothering—contacting children, partners or caregivers while away from their children—but they also used their mobile devices to enable work while mothering “in person.” What Rakow and Navarro described in 1993 as a male use of the mobile phone is the norm for women in our study, using the phone “to bring the public world into their personal lives” (1993, p. 155).

However, as has been described, this intermingling of public and personal is done in a controlled fashion, with most of the women in this study able to exert agency over when and for what reasons they choose to allow work into their personal lives. Nevertheless, this change in the use of mobile phones, making it simple to engage with work from outside the office, reinforces or even exacerbates the parallel shift by increasing expectations that women will manage their work commitments while fulfilling their domestic responsibilities.

With respect to Wajcman’s (2010) observations about shaping of technology and gender, in this case mobile phones have come to be used in ways that reinforce existing gender roles. Butler (1990) asserted that gender was something constructed through doing, as an identity that is created through performance. Wajcman (2010) linked the idea of gender performativity to the ways in which we relate to technology, viewing each as “products of a moving relational process, emerging from collective and individual acts of interpretation” (2010, p. 150). Despite recent changes in family and gender roles, women still tend to be the primary caregivers; given that employers generally reward those who put in the longest hours and make themselves most available, this can create challenges for those managing family and a career. In the cases of the women interviewed for this study, we can see trends that suggest that BlackBerry use and practices are intended to establish or reinforce an identity as a professional within a particular field. This is done within the confines of the established structure of the work world, which still privileges a traditional family structure and gender roles.

Smartphones do allow women greater flexibility to manage the multiple demands of family and work, but also facilitate increased engagement with work when away from the office. Although the women in this study established pragmatic mechanisms to control the ways that work intrudes into their non-work environments, many of them also actively used their smartphones to maintain a presence with their colleagues and clients, performing actions to reinforce their identities as competent, committed, responsible professionals. Even if work was brought into the non-work environment deliberately, it appears that the presence of smartphones increases the demands of the parallel shift by making it easier for women to work without offering any reduction in non-work expectations. Nevertheless, there was a sense that smartphones brought an element of control to the environment, in that their users did believe they could use their phones to their advantage by choosing when or how to engage with work while away from the office.

### **Future Directions**

This study draws on the insights of just a few professional women, and raises a number of questions that could be explored in future research. We observed that impression management and availability was particularly important to those in the early stages of their career, a finding that could be investigated further to address Fortunati’s



(2009) call for examination of different generations of mobile phone users. We did not report here on the ways that women used their smartphones to manage their family responsibilities while in the office, but note the importance of understanding management of the work/family dynamic from this perspective.

Respondents made the case that they were generally able to use their smartphones to manage their engagement with work, appearing to have good control over when and how they allowed work into their non-work environment, and using their smartphones effectively to provide support to, and communicate with clients and colleagues. Future work could investigate the perspectives of family members and friends with respect to the extent to which they perceive that women are actually managing their work/family interface with the degree of control they claim they are able to achieve. The perception of the smartphone user may not be congruent with others with respect to the ability to tightly control work's intrusion into non-work times and spaces. How do the ways that women choose to communicate, and the degree to which they make themselves accessible, affect the degree and nature of intimacy women have with others, their roles within their families and in their jobs, and the types of relationships they develop both personally and professionally?

It would also be interesting to explore the effectiveness of women's efforts to convey their professionalism through their smartphone-enabled interactions with colleagues and clients when away from the office. To what extent do professional status, technical skill, age, socio-economic status, personal confidence, supportive family members, an enabling work environment or other variables have an impact on the extent to which women can actually benefit from using mobile technology to manage the work/home interface?

Finally, in keeping with the work of Fortunati (2009), Wajcman (2010) and Gregg (2011), it is also pertinent to ask questions about the broader institutional structures that shape women's use of mobile technologies. Can mobile technologies be used in ways that go beyond making it easier to cope with existing gender roles or conforming with existing assumptions about the ways that women manage personal and professional responsibilities? The evidence to date suggests that mobile technologies provide support for more intensive work patterns, facilitating communication while outside the office to enable the parallel shift and reinforcing existing practices.

## ACKNOWLEDGEMENTS

This research was funded by the Social Sciences and Humanities Research Council of Canada. The authors thank Rhonda McEwen for conducting the interviews that informed this paper.

## REFERENCES

- BARON, NAOMI S. (2011) 'Concerns about mobile phones: a cross-national study', *First Monday*, vol. 16, no. 8.
- BUTLER, JUDITH (1990) *Gender Trouble: Feminism and the Subversion of Identity*, Routledge, New York.
- CHESLEY, NOELLE (2010) 'Technology use and employee assessments of work effectiveness, workload, and pace of life', *Information, Communication & Society*, vol. 13, no. 4, pp. 485–514.

- COUSINS, KARLENE C. & ROBEY, DANIEL (2005) 'Human agency in a wireless world: patterns of technology use in nomadic computing environments', *Information and Organization*, vol. 15, no. 2, pp. 151–180.
- DUXBURY, LINDA & HIGGINS, CHRIS (2009) *Work-life Conflict in Canada in the New Millennium: Key Findings and Recommendations from the 2001 National Work-life Conflict Study*, Health Canada.
- DUXBURY, LINDA & SMART, ROB (2011) 'The "myth of separate worlds": an exploration of how mobile technology has redefined work-life balance', in *Creating Balance?*, eds Stephan Kaiser, Max Josef Ringlstetter, Doris Ruth Eikhof & Miguel Pina e Cunha, Springer-Verlag, Heidelberg, pp. 269–284.
- FORTUNATI, LEOPOLDINA (2009) 'Gender and the mobile phone', in *Mobile Technologies: From Telecommunications to Media*, eds Gerard Goggin & Larissa Hjorth, Routledge, New York, pp. 23–34.
- GREGG, MELISSA (2008) 'The normalisation of flexible female labour in the information economy', *Feminist Media Studies*, vol. 8, no. 3, pp. 285–299.
- GREGG, MELISSA (2011) *Work's intimacy*, Polity Press, Cambridge.
- HARAWAY, DONNA J. (1997) *Modest\_witness@ second\_ millennium. FemaleMan\_Meets\_Onco-Mouse: Feminism and technoscience*, Routledge, New York.
- HOCHSCHILD, ARLIE RUSSELL & MACHUNG, ANNE (1989) *The Second Shift: Working Parents and the Revolution at Home*, Viking, New York.
- HARDING, SANDRA (1991) *Whose Science? Whose Knowledge?: Thinking from Women's Lives*, Cornell University Press, Ithaca, NY.
- MIDDLETON, CATHERINE A. & CUKIER, WENDY (2006) 'Is mobile email functional or dysfunctional? Two perspectives on mobile email usage', *European Journal of Information Systems*, vol. 15, no. 3, pp. 252–260.
- RAKOW, LANA & NAVARRO, VIJA (1993) 'Remote mothering and the parallel shift: women meet the cellular telephone', *Critical Studies in Mass Communication*, vol. 10, no. 2, pp. 144–157.
- TOWERS, IAN, DUXBURY, LINDA, HIGGINS, CHRISTOPHER & THOMAS, JOHN (2006) 'Time thieves and space invaders: technology, work and the organization', *Journal of Organizational Change Management*, vol. 19, no. 5, pp. 593–618.
- WAJCMAN, JUDY (2010) 'Feminist theories of technology', *Cambridge Journal of Economics*, vol. 34, no. 1, pp. 143–152.
- WAJCMAN, JUDY, BITTMAN, MICHAEL & BROWN, JUDE (2009) 'Intimate connections: the impact of the mobile phone on work/life boundaries', in *Mobile Technologies: From Telecommunications to Media*, eds Gerard Goggin & Larissa Hjorth, Routledge, New York, pp. 9–22.

**Rachel Crowe** holds a Masters degree from the Joint Program in Communication and Culture at Ryerson and York Universities, Toronto, Canada. Her research interests include internet technology, online media and intercultural communication. E-mail: rmcrowe@gmail.com

**Catherine Middleton** is a Professor and Canada Research Chair in the Ted Rogers School of Management at Ryerson University, Toronto, Canada. Her research focuses on the development and use of mobile and fixed broadband infrastructures. Links to current research projects can be found at [www.broadbandresearch.ca](http://www.broadbandresearch.ca). E-mail: catherine.middleton@ryerson.ca