

Conducting Feminist Gender Research in the Information Systems Field¹

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ABSTRACT

In this chapter, we explore the methodological and epistemological implications of conducting feminist, gender research in the information systems field. These implications revolve around four core themes: that feminist research is situated in the margins; that current gender and IS research is not adequately problematized; that feminist research questions the legitimacy and appropriateness of positivist research; and that reflection on the personal characteristics of the researcher such as race, gender, sexuality, and class can inform feminist research. We propose four criteria for conducting feminist IS research: (1) engaging in researcher reflexivity; (2) challenging the hegemonic dominance, legitimacy, and appropriateness of positivist epistemologies; (3) theorizing from the margins; and (4) problematizing gender.

KEYWORDS

Feminism, feminist methods, feminist research, gender, gender research, Individual Differences Theory of Gender and IT, information systems research, qualitative research methods

INTRODUCTION

The research area of gender and information technology (IT) is focused on uncovering, understanding, explaining and predicting the influence of gender and biological sex on one's engagement with IT. A number of disciplines conduct this research, including: Information Systems, Human Computer Interaction, Information Sciences, Telecommunications, Computer Supported Cooperative Work, and Science, Technology and Society. In this chapter, we focus on the discipline of Information Systems (IS). By IS research, we mean those studies that examine the arrangement of equipment, resources and procedures, often computerized, that are required to collect, process, and distribute data for use in (typically) managerial decision making in business organizations. We concentrate on IS because this field examines IT in business contexts in which managerial perspectives are privileged. Moreover, IT is often used to intensify and expand the exercise of managerial power. To the degree that women adopt managerial values and beliefs as their own, woman may achieve some measure of success (by the majority definition). We argue, however, that what is woefully underrepresented in gender and IS research is a critical, feminist perspective on gender.

IS researchers typically examine the ways in which sex-based differences in IT use shape and are shaped by numerous practices such as the conceptualization and use of IT (Gefen and Straub 1997; Star 1995), the design of IT artifacts (MacKenzie and Wajcman 1999; Woodfield 2002), and the persistence of students in science, math, engineering and technology related disciplines (Camp 1997; McGrath Cohoon 2001). Sex-based disparities also occur in the mundane and the overt ways in which power and performance are enacted in organizational settings (Adam et al. 1994; Eriksson, Kitchenham, and Tijdens 1991; Von Hellens, Nielsen, and Trauth 2001), in societal and cultural influences on IT careers choices (Nielsen et al. 1999; Trauth 2002) and in the continued under representation of women in the IT workforce (Freeman and Aspray 1999).

While this research provides many insights into the relationship between gender and IT, the resultant picture is highly fragmented, patchy in its coverage, and inconsistent in its depth of theorizing on gender in order to provide a basis for explanation and prediction. In our view, the topic of gender and IT is under

theorized in three ways. First, gender is seldom considered as an independent factor in socio-technical studies of IS in context (Wajcman 2001). Instead of viewing gender as a socially constructed category, researchers' seek to understand gender by fixating on differences between biological sexes. Second, much of the published research focuses on data analysis rather than theoretical implications that relate to the existing body of gender, and gender and IT literature (Adam, Howcroft, and Richardson 2001). Third, there exists an insufficient understanding of the underlying causes of sex-based under-representation in the IT profession that would inform educational policies and workplace human resource strategies to attract and retain more women (Tapia, Kvasny, and Trauth 2004).

Given this critique, the issue arises as to how to study the role of sex and gender in engagement with IT in ways that overcome these shortcomings. We believe the answer is to produce a stream of gender research in the information systems field that is also feminist research. Thus, essential to our discussion of feminist gender research in IS is the recognition of a fundamental difference between feminist gender research and nonfeminist gender research. Whereas the term gender research refers to any research project that is concerned with gender and IT use, the term feminist gender research refers to research projects that study gender and IT use from the vantage point of particular methodological and epistemological positions. In this chapter, we discuss these methodological and epistemological implications of conducting feminist gender research in the information systems field. We organize our discussion around four criteria for characterizing gender and IT research as feminist research. First, it is conducted from the standpoint of researcher reflexivity. Second, it challenges the hegemonic dominance, legitimacy, and appropriateness of positivist epistemologies as the sole approach to gender and IS research. Third, it adopts a position of theorizing from and understanding of the margins. Finally, it problematizes the concept of gender.

THE STATE OF GENDER RESEARCH IN IS

As a prelude to our discussion of feminist gender research, we consider the current state of gender and IS research. Gender studies have traditionally existed at the periphery of IS research.² One measure of this is the extent to which gender is perceived to be a relevant component of IT personnel research. For example,

² This situation is being rectified through such publications as the *Encyclopedia of Gender and IT* (Trauth, 2006).

a review of the papers presented at the ACM SIGMIS Computer Personnel Research Conference – where the focus of research is IT personnel -- over the past 44 years that the conference has been held revealed that of the 862 conference papers presented only 29 were found to focus on gender and the IT workforce or gender and IT education (Trauth, Quesenberry and Huang, 2006). Further, 23 of these have been presented since 2000. Finally, 10 of these gender papers were presented in 2003 when the conference theme was diversity in IT workforce (Trauth, 2003).

Another measure is where gender studies are published. Hence, we conducted an analysis of IS journals. We began by searching the Proquest – ABI/INFORM Global database using the subject keywords “information systems and gender”. This search returned 8 scholarly journal articles. A search on “information technology and gender” returned 31 scholarly journal articles across a number of domains including women’s studies, American history, education, sociology, and IS. To gain closer insights into the publication of gender research conducted by IS scholars, we searched for gender-related articles in five premiere IS journals. The journal rankings were obtained by a published study that summarized the responses of approximately 1000 IS researchers around the world (Mylonopolous and Theoharakis 2001). We selected five of the top fifty IS journals from this ranked list. Next, using the subject keyword “gender” we searched the citations and abstracts of each publication. The start and end dates are the dates for which Proquest provides full text coverage. The results of our analysis are included in Table 1.

Table 1: Gender Research in Leading IS Journals

Journal	Rank	Dates	Number of citations
Management Information Systems Quarterly (MISQ)	1	1987-2005	7
Communications of the ACM (CACM)	2	1991-2005	14
Information Systems Research (ISR)	3	1999-2005	0
Journal of Management Information Systems (JMIS)	4	1992-2001	3
Management Science	5	1987-2005	2

Looking at the highest ranking journals in the field, we note that gender related studies are represented unevenly. In terms of methodology, nearly all of the papers published in Management Science, MISQ,

JMIS were positivist in its epistemological orientation and utilized quantitative methods to measure gender differences on factors such as computer usage in the workplace (Venkatesh and Morris 2000), perceptions about and usage of email (Gefen and Straub 1997), job performance and career advancements (Igbaria and Baroudi 1995), pay disparity (Truman and Baroudi 1994), and computer playfulness (Webster and Martocchio 1992). The theoretical perspective informing these studies is essentialism: that women and men are different, and these differences can be teased out by measuring a few key constructs. Positivist survey research and hypothesis testing is the dominant research approach. We expand upon the limitations of positivist methods for feminist research in the second section of this chapter.

A second observation is the range in the number of articles published. On the one hand, the CACM has published 14 articles while, on the other hand, ISR has not published any articles that focus explicitly on gender. Three of the CACM papers were published in a special issue in January 1995. The CACM has published relatively more papers that have taken an interpretivist epistemology and used qualitative methods.

A third observation is that the highest ranking journal (according to Mylonopolous and Theoharakis) has, to date, only published seven papers that take gender as a central construct. The studies typically use “gender as a variable” to distinguish male and female survey respondents. Feminist methods and theories are not present in this work. Given the historical under representation of women in the field, the relative paucity of feminist research and the dominance of positivist epistemologies in premier IS journals are not altogether surprising. Calvert and Ramsey (1996) contend that dominant group members such as American males of European descent along with diverse peoples with colonized minds often cannot see their own class privilege, power, and dominance. What is lost is inclusion of the critical, radical, and problem-posing nature of feminist theory and practice as an anti-paternalistic discourse. Gender as operationalized in “mainstream” IS escapes intensive probing and questioning; it is simply taken as a given dimension for determining differences between men and women. It remains a challenge to get those who conduct gender research to move from the center, the place of safety which excludes the lives,

identities and experience of the 'Other'. Consequently, the most privileged discourse community, the premiere academic journals, has not, to date, contended with feminist projects in IS.

Contemporary feminist theory provides guidance for reflecting on the "politics of location", and using marginalized spaces as sites for resistance and social change. Specifically, this means making problematic the politics of location situated in the power and privilege of male domination, and questioning of the ideological weight of essentialist understanding of gender. We believe that a radical form of border crossing is needed in order to reconstruct gender and technology as the rich socio-cultural and political constructs that they are. But border crossing requires a productive dialog in order to create a space where power relations, ideologies and unfair practices must be challenged and overcome. The margins become this place for transformation and critique.

Gender continues to resist becoming an object of interrogation in IS research. However, as hooks comments, we need to interrogate systems of privilege that enable dominant groups to ignore the ways that their actions support and affirm the very structures of domination and oppression that they profess to wish to see dismantled (hooks 1989). Anger, as a form of disagreement, holds some potential as a feminist methodology (hooks 1984). Lorde (1984) defends the use of anger by focusing on it as a powerful source of energy serving progress and change. There is a positive potential for anger in shaping feminist research. We, researchers who embrace feminist methods, can use our anger constructively as a way of being heard, as a way to combat stereotypes.

CONDUCTING FEMINIST GENDER RESEARCH

One outlet for our anger is to channel it towards constructing alternative ways of theorizing and conceptualizing gender in IS research. We do so by offering guidance as to how to conduct feminist gender research. We organize our discussion around four key components of feminist research.

Reflexivity in Feminist Gender and IS Research

All research is guided by a set of beliefs and feelings about the world and how it should be understood. It represents a worldview that defines, for its holder, the nature of the world, the individual's place in it, and the range of possible relationships to that world

and its parts. These are basic beliefs in the sense that they must be taken on faith; there is no way to establish their ultimate truthfulness (Guba and Lincoln 1988).

As Guba and Lincoln point out, all research is informed, consciously or unconsciously, by the philosophical assumptions of the researcher. These assumptions concern the ways that the researcher understands the nature of reality, knowledge, human nature, and methodology, and consequently the interpretations of the research site. As feminist researchers, our philosophical lens is primarily informed by interpretive and critical epistemologies. We take an interpretive approach but are also critical in order to allow in-depth examination and subsequent presentation of how women engage with technology (Walsham 1995).

From an interpretive perspective, we assume “that people create and associate their own subjective and intersubjective meanings as they interact with the world around them” (Chua 1986). This is indicative of a subjectivity in which multiple truth and knowledge claims exist through interlocking contextual understandings, and where reality itself is also a subjective state. In this manner, feminist research for us is an exploration of how these multiple truths and knowledge claims can be found in the boundaries that are socially constructed. The social construction of these truths and knowledge claims inform the practices of both the subjects and the researchers.

From a critical perspective, we believe that our main task as researchers is one of social critique, whereby the restrictive and alienating conditions of the status quo are brought to light. Critical research seeks to be emancipatory in that it aims to help eliminate the causes of unwarranted alienation and domination and thereby enhance the opportunities for realizing human potential (Klein and Myers 1999). While people can consciously act to change their social and economic conditions, critical theorists recognize that human ability to improve their own conditions is constrained by various forms of social, cultural, and political domination as well as natural laws and resource limitations. Whereas traditional researchers see their task as the description and interpretation of a slice of ‘reality,’ critical researchers often regard their work as a first step toward forms of political action that can redress the injustices found in the field site or constructed in the very act of research itself (Kincheloe and McLaren 1998). Chua (1986) explains that

critical studies aim to critique the status quo through the exposure of what are believed to be deep-seated, structural contradictions within social systems, and thereby to transform these alienating and restrictive social conditions.

Thus, the first component of our depiction of feminist gender research is reflexivity. That is, the life experiences and the characteristics of the researcher such as (but not limited to) race, gender, sexuality, marital and parenthood status, and class are recognized as informing one's feminist research. Thus, we assume that the situated knowledge of feminist researchers is used to produce and implement feminist theory (Collins 1990).

We come from different social origins, live on different continents, occupy both junior and senior academic positions, and enjoy different lifestyles. We are spouses, mothers, mentors, teachers, and advisors. We conduct our fieldwork with a wide variety of women such as employees in the IT workforce, university students in computer-related disciplines, working class women who use IT indirectly in their work, and underemployed and unemployed women just learning about IT. Our feminist projects have included the intersectionality of race, gender and class in shaping women's standpoints on computers and the digital divide (Kvasny 2003a; 2003b; forthcoming), gender and telework, (Greenhill and Wilson, 2005; Wilson and Greenhill, 2004), socio-cultural factors that motivate and inhibit women's persistence in IT-related careers (Trauth, Nielsen, and von Hellens 2003; Trauth 1995; Von Hellens, Nielsen, and Trauth 2001), development of a theory of individual differences to explain women's participation in the IT field (Trauth 2002, 2006; Trauth, Quesenberry and Morgan, 2004; Trauth and Quesenberry, 2005, 2006); student's perceptions of IT careers (Nielsen, von Hellens, Pringle, and Greenhill. 1999), and coping mechanisms that women and minorities enact as they deal with IT in the home and workplace (Kvasny and Trauth 2002).

Nevertheless, we share a common commitment to feminist research. Our collective body of research focuses upon the situated and localized nature of knowledge that finds its basis in women's lived experiences. This work also demonstrates a variety of methodological practices which are significantly motivated by our desire to hear the voices of diverse women.

Through reflexive analysis, we hope to participate in and contribute to the broader discourse about feminist method. Using Bourdieu's (1992) notion of reflexivity, we examine three ways in which reflexivity factors that influence the practice of research. The first and perhaps the most obvious factor is the individual researcher's social origins and coordinates (i.e. class, gender, sexuality, marital status, ethnicity, nationality). These characteristics influence the choice of research topic and our ability to conduct feminist research (Collins 1998). They also influence the questions that we ask as well as the questions that we fail to ask (Allen 1996; Nkomo 1992). The second factor is the position that the researcher occupies within her academic field. Bourdieu notes that the points of view adopted by researchers always owe something to their situation in a field where all define themselves in part in relational terms (Bourdieu and Waquant 1992). The third factor is the researcher's intellectual relationship with the subjects of their research. Bourdieu speaks of an intellectualist bias which may entice us to see gender as spectacle to be interpreted rather than as a concrete reality to be understood. The implication of the intellectualist bias is that researchers should not impose their theoretical logic onto the practical logic of the women in the field. In what follows, we reflect upon the ways in which our individual identities, positions within our academic fields, and our relationships to the women who allow us into their lives in support of our research.

Social Identity and Coordinates

How does who we are influence what we do as researchers? The first author, a white American female, has used her social coordinates to inform her theory development regarding gender and IT. She grew up as one of seven sisters with no brothers, and lives as an adult in a same sex household. Because of these experiences she has learned to reject gender categorization; instead, she has learned to look to variation across individuals within sex-based groups. She has incorporated into her theory development her own experience of receiving guidance from role models and mentors (from her older sisters), and her experience of influencing other women (her younger sisters). Growing up in a middle class family where expectations were high – that each daughter would exceed the educational level and employment horizons of their parents and be able to take care of herself – what was 'normal' for her was to pursue advanced

education. Consequently, a fundamental aspect of her theoretical work regarding women and IT has become the notion that certain career and educational options need to be considered ‘normal’ for women in order to address the gender gap in the IT profession (Trauth 2002).

Another fundamental component of her theoretical work – that what is considered ‘normal’ for males versus females needs to be deconstructed – comes from living in same sex households. It has taught her that much of what is considered ‘male’ or ‘female’ behavior is merely a social construction. What she brings into her research is the experiential knowledge that interests and abilities, with respect to IT or any other profession, are influenced by individual differences; they are not fixed by biology.

The second author, an African American female, spent most of her youth in the areas of metro New York City and Jersey City, the “inner cities” as middle class people like to say. She could meet the demands of higher education and corporate America only by suppressing many of her primary experiences and cultural acquisitions such as black vernacular speech, afro centric clothing and hairstyles. Research on African American women and technology has allowed her to reconcile herself with her primary experiences, to assume them without losing anything she subsequently acquired.

Reading black feminist writers such as Audre Lorde, bell hooks and Patricia Hill Collins, she found that this feeling of being the “Sister Outsider” is common among black women in the academy who are rooted in working-class communities. She feels that she never quite fits in at the university, she has no tenured black women in her field to call on for guidance, and yet she can’t easily return to her place of origin because she no longer fits in there either. The research with working-class African American women is culturally nourishing but tastes bitter sweet. On the one hand, it helps her to stay grounded and to discover more about her history and her culture. On the other hand, it is a painful reminder of how far she has moved away from her roots and of how IT is further marginalizing her people. She often thinks about her social trajectory and the ways that it has caused her to cross through varied social milieus.

Border crossing gives you a sort of objective and subjective externality, an otherness. You experience the subtle and not so subtle forms of gender, class and racial inequality that can’t but make you perceptive. You see and feel things that others can’t recognize. Yet you are constantly reminded of your otherness.

But this nurtures a vigilance that you are going to research your people's issues, and you are going to be successful in this endeavor. While traveling across these social milieus, she has taken a whole series of photographs that exist in her mind. She processes these mental images as she tries to explicate the experiences of black women appropriating technology. The research questions and theories that inform her research agenda originate from these snapshots. It is research that attempts to get at the social suffering that lies underneath and behind the debates on the "digital divide". It is research that attempts to convey how black women see IT as a vehicle that will help move them to a promised land. It is research that demonstrates how people in a position to deliver on these hopes and aspirations often refuse to hear these yearnings, and continue to impose IT in ways that foster digital inequalities. Feminist scholars argue that those who have experienced marginalization themselves are particularly suited to conduct interpretive and critical feminist IT research (Harding 1997; Hartsock 1997; hooks 2000).

The third author began her academic studies after many years in low paid, low status employment. She had a turbulent upbringing that resulted in living on and with many people that mainstream Australians would consider marginal if not altogether undesirable. These experiences have inspired strong political opinions regarding equality and social inclusion. She actively engages in research that critically challenges dominant and exploitative practices in management and information systems development. These concerns about equity set her apart from her colleagues. During a gender and IT research project, for instance, fellow researchers did not share the emancipatory ideals and motivations that typify critical researchers. This resulted in an editorial censorship of her concerns regarding computers and society and the significance of this topic to the field of information systems.

In addition to these strong political beliefs, these experiences have helped her to be proud of her sexuality. However, there is a price to be paid for this identification. The stigma associated with expressing sexuality is the stereotypical consequence and automatic prejudgment of being considered the dumb blonde. She is regularly perceived of as the "professor's secretary" or the "mature-age student" and rarely as a legitimate and knowledgeable academic. Regardless of these stereotypes, she feels that the libratory lifestyle that academia provides, combined with her broader life experiences, enable opportunities to

challenge the stereotypes and superficial association of physical attributes with intelligence. This is an opportunity to rearticulate, explore, and contribute to the empowerment of women and our demands for equal consideration and equality.

Researchers' Positions

One of the passions that led these authors' to study gender is the ethical belief that we cannot let institutions such as the educational system and business organizations continue to systematically exclude girls and women from IT careers. We could not let people in positions of power continue to act in ways that reproduce their privilege, and unwittingly perpetuate systemic inequality for women and other marginalized groups. It is also not fair to continually call upon marginalized peoples to enlighten those in positions of power.

While fully acknowledging our limitations as researchers whose power is primarily derived from our ability to express critical thoughts and insights, we feel that it would be unethical for us as female researchers not to intervene. It is our hope that our research can fulfill both scientific and political functions. We trust that it will remind readers of the injustice that occurs when women are being systematically turned away from our profession and not given an opportunity to utilize IT as a mechanism for improving their life chances. It is their personal stories of perseverance, of conformity and of self-exclusion that we wish to tell because this is what routine surveys that conceptualize gender as a dichotomous variable block from our view. Unfortunately, gender is often treated in this way in our field. The first author brings to her feminist IT research a considerable body of work related to socio-cultural influences on the development of an IT labor force. This work has informed her theory development about gender and IT. Her work in different cultures has taught her that what is considered acceptable 'women's work' in one culture might be restricted to 'men's work' in another. She is, therefore, able to connect her feminist gender research to broader issues of cultural diversity and IT (Trauth, Huang, Morgan, Quesenberry and Yeo, 2006; Trauth, Huang, Quesenberry and Morgan, forthcoming), cross-cultural effects of IT and economic development motivations for the creation of an information economy. Both her publication record and her funding record give her feminist research 'legitimacy' in the wider IS

community. In this regard, she considers herself to be in a privileged position. She has encountered a number of women academics who have encouraged her feminist research because they did not feel that as untenured women they could do that research. As a tenured, full professor this author occupies a space that enables her to pursue such research. She can work to extend the boundaries of what is considered to be mainstream IS research. Thus, she has come to view her feminist research as something she does, not only because she wants to, but because she can.

The second author is an untenured assistant professor studying the relationships among race, gender, class and IT. On the one hand, this research is risky in the sense that most IS colleagues would not see this as mainstream research. On the other hand, this research is a safe haven in the sense that it affords an intellectual space that enables her to cope with the stresses that come with being an African American female working towards tenure at a majority, research-oriented, American university. This intellectual space is created by reading broadly outside of information systems and incorporating theoretical insights from diverse fields such as philosophy, urban studies, women's studies, sociology and African-American studies. It also comes from cultural practices such as listening to hip-hop, rhythm and blues, and jazz music, and reading the fiction of Toni Morrison, Maya Angelou, Alice Walker and Terri MacMillan. This intellectual space provides a position from which to critique the status quo and to envision liberating alternatives for harnessing IT to empower women.

The third author, as with many female academics, maintains two distinct and sometimes intersecting research areas. The first concerns the development of information systems, an area that is centrally situated within the IS field. The second concerns women's experiences with IT, an area that is on the margins of the field. Although she describes her main research as information systems development, she acknowledges that the research carried out in relation to gender and IT has provided more financial benefits, greater emotional support, as well as additional personal satisfaction and disappointments. She has been, and continues to be, described by her colleagues as being a woman with opinions. Women with opinions are judged in universities as women who have not yet learned their place or as trouble makers. The political and professional consequence of holding and expressing opinions accelerated her resignation

from one academic post as she witnessed women who similarly had opinions being openly bullied and discriminated against.

Intellectual Relationships with Women in the Field

For us, the women with whom we engage with in the field are more than individuals to be studied. They are mothers, sisters, spouses, partners and daughters. They are human beings to be understood. Because of this view, we can't get on with the work of understanding if we remain distant, 'objective' and 'impartial' observers. There is an enormous difference between measuring gender differences and trying to understand gender relations with IT as a strategy so as to improve your own chances of success in the field. We are invested in the same interests and struggles as the women we interview and we try to understand these relations so as to theorize about them. As female researchers who study IT, we have also lived the subject we are studying. Therefore, we have a practical stake in our research. Because of this, we are in a poised to go beyond the positivist paradigm. Our lived experiences give us the tools to engage in interpretive and critical research. Our awareness comes from both reflecting upon our own research practices and from the observed limitations of extant literature that fails to adequately theorize gender. The first author has conducted in-depth interviews with women IT professionals in several countries. In these interviews, she asks women to relate their educational and employment histories, to speak about influential people and events, to reflect upon the course of their lives. She is asking women to go deep inside themselves, to call up often long suppressed memories and feelings. She believes this cannot be a unidirectional event. Consequently, she has shared similar aspects of her own career and life story. She draws upon her own experience of personal marginalization, a gendered workplace and challenges to her research in order to connect to her research participants. She also encounters the ethical responsibility of responding to the effects of inviting her participants to open the doors of their memories. In one field study she and her graduate assistant encountered a woman whose life reflection brought back unpleasant memories and tears that flowed an hour beyond the 90 minute interview slot. Such is the responsibility of those engaged in feminist gender research in IS.

To challenge the unspoken but harshly felt notion of who counts as a subject worthy of research, the second author chooses to work with working-class African American women in urban milieus in the US in order to bring to light their representation of IT and how they might appropriate IT as part of a strategy for improving their collective life chances. Because she is concerned about the distortions and censorship that emerge from the social asymmetry that exists in relationships between researcher and informant, she establishes a rapport over time before engaging in an informal interview process. She also engages in active listening which entails opening oneself up to questioning and, at some level, adopting the interviewee's language, views, and feelings. During analysis, she tries to read in their words the structure of historically constituted power relations in order to uncover the complexity of their knowledge and practices. This same disposition governs the translation of the analysis into academic writing.

The third author feels that there is a direct connection between the understanding of information systems in organizations and the impact that this has upon workers - and in particular women workers. She feels that, in acknowledging her life experiences and through observing technological practices with techniques learned in the fields of anthropology and sociology, she can contribute to the ongoing body of knowledge relating to the changing contexts of gender and IT. For her, utilizing quantitative techniques tends to result in a less satisfactory research outcome that provides fewer opportunities to convey ideas and opinions about gender and IT studies. Therefore, she prefers to use qualitative techniques alone or a combination with quantitative techniques to gather data. Accessing women's narratives enables a richer platform from which a story can then be told. In this way, the most successful research outcomes are those that are interesting and express opinions. It is necessary to engage the reader and writer in a joint experience relating to the topic being explored. For the third author, gender and IT is a topic of passion and emotion where opinion is closely entangled with the desire to conduct research. Her work on gender and equity in this way develops, utilizes, and extends the theoretical applications of post-modern feminist thought as an analytical approach to study gender within IS research.

Challenging the Hegemony of Positivism in Gender and IS Research

The second component of our characterization of feminist gender research in IS is that the epistemology

challenges positivist hegemony. This derives from our contention that the what of the theory drives the how of the methodological approach in feminist research. In her discussion of the choice of qualitative methods for IS research, Trauth (2001) considers five influencing factors: 1) the research problem, 2) the epistemological lens, 3) the degree of uncertainty surrounding the phenomenon, 4) the researcher's skills in the use of a particular method and 5) academic politics. We believe that factors 1 and 2 are particularly salient in the case of feminist gender and IS research. The first factor relates to the distinction between feminist gender and IS research, and non-feminist gender and IS research. We believe that what is to be studied in feminist research is not so much that women are observed to behave differently than men around a particular technology in a particular setting, but rather that the complex factors within and around a woman influence her relationship to technology and technical work. Thus, the research problem and the associated epistemology underlying the research problem are different.

When conducting feminist research, interpretive and critical orientations may be more appropriate than positivist approaches. We believe that methods deriving from interpretive and critical epistemologies are often better suited to feminist projects because they provide insights that differ from those gleaned from positivist research. This argument is based upon our contention that the entire subject of investigation – both the conceptualization of 'the problem' and the results that are analyzed – shifts when the epistemological lens is changed. This was born out in Trauth and Jessup's (2000) investigation of the use of a particular IT (group decision support systems) to discuss a high threat topic. The positivist analysis of the sessions concluded that effective group behavior directed toward consensus around alternative solution scenarios had occurred. In sharp contrast, the interpretive analysis uncovered the absence of shared consciousness about the issue and imbalanced participation in the discussion sessions. In addition, the interpretive analysis showed evidence of multiple, rich types of information being shared (cognitive, affective and behavioral). When comparing the results of both epistemologies it becomes clear that the interpretive analysis provided a different understanding of the same evidence and new information not found in the positivist analysis. Such research not only demonstrates the epistemological implications of

the choice of a research method, it also calls into question the legitimacy of dominant approaches such as positivism for certain research projects.

This same theme is taken up by Howcroft and Trauth (2004) and Trauth and Howcroft (forthcoming) in their argument for greater use of critical methods in IS research. They show how the project changes when the lens shifts from positivist to interpretive to critical. They point out that with respect to research about gender and IT, positivist research is directed simply at discovering whether and where there are gender differences in technology acceptance or participation in the IT professions. Theorizing about these observations is unproblematically left in the lap of essentialism, if it is considered at all. In contrast, interpretive research seeks to understand how gender differences among IT users have come about using established theories such as social construction and emergent theories such as individual differences. The objective is not to revert to biological differences to explain discrimination; this research seeks to better understand underlying social influences. Finally, critical research advocates a position as to why gender inequality exists. Drawing from critical social theory, postmodernism, feminist theory and Marxism, for example, the goal of this research is to challenge power relations that reproduce inequality.

We recognize that the dichotomy between positivism and feminism tends to be overdrawn. However, we do find limitations of positivism at three interrelated levels: philosophical, moral, and practical (Gorelick 1991). At a philosophical level, we argue against the pretense of value-free science and the presumption of objectivity conceived of as a set of research procedures and statistical methods. On a moral level, we oppose the extreme forms of positivism that objectify human beings as social facts to be studied. On a practical level, we contest the way in which the hierarchical relationship between the researcher and the researched is unexplored, and the impact of this power differential on the truthfulness of the data provided by respondents.

Theorizing at the Margins

Our third component of feminist gender research in IS is theorizing gender from the margins. By employing researcher reflexivity and recognizing the central place of critical and interpretive epistemologies, feminist gender researchers are encouraged to stand at the periphery and critique the

dominant discourses that essentialize womanhood and leave power hierarchies unchallenged. hooks (1989) offers a radical black feminist standpoint for using the margins as a site for resistance and social change. This oppositional worldview exists not only in opposition to dominant discourses about gender and IT, but also as a movement that enables self-actualization. For hooks, it is not enough to oppose and react to patriarchal values and concerns. We must also create counter-hegemonic theories that valorize the knowledge and experiences of women, and suggest oppositional directions and possibilities. While there have been several pleas for more research on feminist inspired IS research (Adam et al., 1994; Adam 2000; Adam and Richardson, 2001; Bratteteig and Verne, 1997; Kvasny, forthcoming), feminist research in IS, nevertheless, remains at the periphery.

The periphery, however, may in fact provide an appropriate location for re-envisioning gender and IT. The most visionary feminist research emerges from people who are familiar with both the margins and the center (hooks 1984). As female researchers studying women's appropriation of IT, we can use our unique position of living both in the center and in the margins to create spaces where women and men can dialog about feminist projects without violating or silencing one another's work. This dialog can only occur by de-centering the dominating male standpoint and moving towards a discourse that valorizes women's lived experiences and situated knowledge, and moves the field from gender to feminist studies of IT. Feminist research methods offer a mechanism for breaking through these master narratives about gender and IT. It is not simply a matter of getting women into IT positions, because organizations tend to socialize the diversity out of out-group members (hooks 1994). We need to redefine the conceptualization of gender and IT in ways that reclaim the subjectivity and legitimacy of women. We further believe that a monolithic understanding of womanhood emerges when the existing social constructions of gender ignore or deny the daily lived experiences of women. Such understandings are problematic because they can give rise to alienating and restrictive conditions for the women as users of IT and as IT workers.

For instance, Kvasny has used feminist standpoint theory to examine how and why the situated knowledge and lived experiences of working-class African American women shape their perceptions about IT. Using the biblical metaphor of the exodus and narratives of ascent, these women viewed IT

access and training as part of a strategy for escaping poverty and despair. Whereas most of the extant gender and IS research provides rich insights into the marginalization of women, the women in this study felt empowered by IT. This contradictory outcome is used to make a case for why IS researchers must consider the multiple identities such as gender, race, ethnicity, socio-economic status, and sexuality that shape and are shaped by women's engagement with IT.

Theorizing Gender

This leads to our final component of feminist gender research: problematizing gender. Feminist perspectives are not just for research; they are a *modus operandi* for life. Therefore, both male and female feminist scholars must not only critique but also offer novel theories for understanding and predicting women's relationships with IT. A central debate in the fields of women's, feminist, gender, and queer studies has centered on the categorization of people based upon the "sameness" of women by virtue of sexual characteristics. The foundation of this sameness perspective within feminist writings stems from the position that the biologically-based category of woman is treated as an all-inclusive category.

According to the essentialist theory, the physical differences between males and females account for the participation levels of women in IT, implying that women are somehow physically or mentally unsuited for an IT profession that is socially constructed as masculine (Wajcman 1991). In this form of knowing, woman, as the essential problem, is perpetuated by the ascription of observable social practices to either the men or women. (Grosz 1995; Stasz Stoll 1978). For instance, the most quoted emblem for this theoretical domain is found in women's capacity to bear children. Sameness feminist positions stress that women have a collection of essential and shared qualities that bind them together. The notion of difference is not considered. Everyone is expected to conform to some norm which typically privileges those in positions of power, and this unwittingly reinforces power relations (Calvert and Ramsey 1996). For instance, the universal "woman" establishes a role of assumed inferiority with respect to men. It also ignores the diversity that exists within the massive category of woman. Emphasizing an imagined unity can hide from analysis the power relations that exist between men and women, and within the category of women.

In contrast to sameness feminism, “difference” feminism offers an alternative way of theorizing that overcomes the essentialist arguments. Difference feminism acknowledges an individual’s position and the qualities that have traditionally been allocated to men and women. To possess female biology is not, in and of itself, sufficient to automatically secure acceptance into the conventional understandings of woman-ness. Difference feminism considers gendered roles as social constructions, and emphasizes the variety of ways in which women can be constituted as ‘Other’. Being ‘Other’ is not solely about possessing woman-ness, although this is clearly one of its parameters. Individually woman can be multiple and simultaneous ‘Others’. ‘Other’ exists in difference to being mainstream and, hence, dominant.

For example, the dominant position or stereotypical representation of technology is associated with masculinity. The social construction of women as technophobes disinterested in computers reinforces the stereotypical image of women being guided by the skills of a male techno-wizard (Greenhill 1998). Even though women are just as capable as men are, it is the complexity of each individual’s life situation and the consequences of continued social reinforcements that enable inequality to continue. Critical reflection is necessary for looking beyond existing inequality and stereotype notions of what it means to engage with a computer, and for giving voice within the computing culture to radical resistance. This voice of resistance may emerge through the influence of a growing voice of feminist writers who are questioning the traditional positions of sameness (see hooks 1981; Collins 1998; Kvasny forthcoming), and those who are critiquing the relation between women and technology (see Adam, Howcroft, and Richardson 2001; Wilson 2002; Trauth 2002; Wilson and Greenhill, 2004).

For instance, Trauth has proposed the Individual Differences Theory of Gender and IT to explain the participation rate of women in IT based on a range of gender studies in several countries (Kwan, Trauth, and Driehaus 1985; Mitroff, Jacob, and Trauth Moore 1977; Morgan, Quesenberry and Trauth, 2004; Quesenberry, Morgan and Trauth, 2004; Quesenberry and Trauth, 2005; Quesenberry, Trauth and Morgan, 2006; Trauth 1995, 2002, 2006; Trauth, Nielsen, and von Hellens 2003; Trauth and Quesenberry 2005; Trauth, Quesenberry and Morgan, 2004; Trauth, Quesenberry and Huang, 2006;

Trauth, Quesenberry and Yeo 2005; von Hellens, Nielsen, and Trauth 2001). According to this theoretical perspective, the participation of women in IT can best be explained by examining the particular identity characteristics of a woman, the varied influences each woman experiences, and the individual ways in which each woman responds to common socio-cultural messages. Wider applications of this theory to race as well as gender have recently been undertaken (Kvasny and Trauth 2002).

CONCLUSION

In this chapter, we explain our conception of feminist gender research in IS. Underlying this conception is a fundamental distinction that we make between gender in IS research and feminist gender research in IS. We describe four components of feminist gender research: (1) researcher reflexivity; (2) challenging the hegemonic dominance, legitimacy, and appropriateness of positivist epistemologies; (3) theorizing from the margins; and (4) problematizing gender. We have developed these components from our collective reflection upon our own praxis as female researchers examining issues of gender, equity and IT. We consider this chapter to be part of a growing body of work on feminist research, in general (Järviluoma, Moisala and Vilkkö, 2003; Ramazanoğlu and Holland, 2003; Warren and Hackney, 2000), and feminist gender research in IS, in particular.

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