Individual Inequality: Women's Responses in the IT Profession

by

Eileen M. Trauth, Ph.D.
Professor and Director
etrauth@ist.psu.edu

Jeria L. Quesenberry
Ph.D. Candidate
jquesenberry@ist.psu.edu

Center for the Information Society
School of Information Sciences and Technology
The Pennsylvania State University,
The IST Building, University Park, PA 16802 USA
http://cis.ist.psu.edu

Abstract

Among the challenges of gender and IT research is the identification of appropriate theories as a basis for understanding the under representation of women in the IT profession. In response to this need, the Individual Differences Theory of Gender and IT has been proposed by Trauth to focus on women as individuals, having distinct personalities, experiencing a range of socio-cultural influences, and thus exhibiting a range of responses to the social construction of IT. The purpose of this paper is to describe a research project aimed at testing this theory by investigating the particular ways that American female IT professionals are influenced by and react to the social shaping of both gender identity and IT. We begin by providing a brief background of this research project and an overview of the Individual Differences Theory of Gender and IT. Next we describe the research design and the status of data collection and analysis efforts to date. Finally, we summarize the current results of the research project and illustrate the ways in which the Individual Differences Theory of Gender and IT is manifested in the core and emerging data themes. In this discussion we demonstrate how the Individual Differences Theory of Gender and IT can be applied to better understand the issue of female inequality in the IT profession.

Introduction

Despite the significant growth of the IT profession in recent years, there remains a gender imbalance. In some countries there has even been a decline in participation of women in the IT profession. The question on the mind of everyone who is considering this topic is: Why? Statistics tell one story, however it is important to uncover the story beneath the statistics. Consequently, there is an interest on the part of researchers, educators, managers, and policy makers in better understanding the reasons for the female under representation in the IT profession.

One of the research challenges in studying the under representation of women in the IT profession is the identification of an appropriate theory that serves as a basis for understanding and explaining this gender imbalance. There are two dominant theories in the gender literature that are used to explain the participation of women in the IT profession. The psychological explanation dichotomizes gender based upon the presumption of significant inherent differences between women and men. This explanation finds the causes of gender under representation in biology. The sociological explanation focuses on the social construction of IT as a male domain, which is interpreted as incompatible with the social construction of female identity. This explanation finds social structures to be the cause of gender under representation in the IT profession. Recently, a new theory has been proposed by Trauth (Trauth, 2002; Trauth et al., 2006; 2005; 2004) that focuses on individual differences among women as they relate to the needs and characteristics of IT work and the IT profession. The Individual Differences Theory of Gender and IT focuses on women as individuals, having distinct personalities, experiencing a range of socio-cultural influences, and thus exhibiting a range of responses to the social construction of IT. Hence, this theory elucidates the differences *within* rather than *between* the sexes and examines issues at an individual rather than a group level of analysis.

The purpose of this paper is to articulate a research project in the United States sponsored by the National Science Foundation (Grant Number EIA-0204246), which is

investigating the particular ways that American female IT professionals are influenced by and react to the social shaping of both gender identity and IT. At the crux of this research project is objective of empirically supporting the Individual Differences Theory of Gender and IT and its principle that the participation level of women in IT can be explained by the multitude of interactions among technological, individual and societal forces. In this paper, we begin with a brief background of this research project and the Individual Differences Theory of Gender and IT. Next we provide an overview of the research design and the status of data collection and analysis efforts to date. Finally, we summarize the current results of the research project and illustrate the ways in which the Individual Differences Theory of Gender and IT is manifested in the core and emerging data themes. In this discussion we demonstrate how the Individual Differences Theory of Gender and IT can be applied to better understand the issue of female inequality in the IT profession.

Background
The gender and IT research project in the United States is built upon Trauth's previous investigations in Ireland, Australia and New Zealand. The investigation of women working in IT in Ireland (Trauth, 1995), is part of a larger study of Ireland's information economy (Trauth, 2000). Several results were found in this study about the specific ways in which socio-cultural context influenced women's participation in the Irish IT sector. Specifically, positive and negative aspects of working in IT from the women's point of view were found. Furthermore, results were obtained regarding both subtle and overt ways in which women were held back and held themselves back from fuller participation in Ireland's information economy. The investigation of women working in IT in Australia and New Zealand was conducted in conjunction with the Women and IT (WinIT) project at Griffith University in Brisbane, Australia. This comprehensive research project was established in 1995 to study the reasons for female under representation in university-level IT education and women working in the IT profession. The objective is to develop strategies for increasing female participation in this area (Beekhuyzen et al., 2003; Nielson et al. 2003; Trauth, et al., 2003, 2000; von Hellens and Nielsen, 2001; von Hellens, et al., 2001).

The current research project is directed at collecting similar data in selected regions of the United States. The goal is the same: to identify socio-cultural influences on American women who work in the IT profession and to examine the ways in which these influences are experienced by them. Three specific objectives are directed at the achievement of this overall goal. The first objective is to build and test the Individual Differences Theory of Gender and IT to better understand women's participation in the IT profession. The second objective is to gain a better understanding of which individual and environmental factors are influencing American women in their professional development and current working lives as IT professionals. The third objective is to develop recommendations for proactive responses by public policy makers, employers and, educators. Thus, the outcome of this research addresses both scientific and policy goals.

The research project results are directed at improving our understanding about the under representation of women in IT on two levels. First, it makes a scholarly contribution through the development of a theory that aids understanding about the

participation of women in the IT profession. The findings support further refinement of the Individual Differences Theory of Gender and IT, so that an alternative theoretical perspective is available to help explain and predict the participation of women in the IT profession. Second, the results from this field study of American women, who are successful participants in the IT profession, can be used to support and evaluate interventions by policy makers, educators and employers directed at addressing the under representation of women in IT.

Research Design
The research project of the Individual Differences Theory of Gender and IT is a multi-year (August 2002 to August 2006) qualitative multi-site field study of women working in the American IT profession. The goal of the research project is to investigate the female under representation in the IT profession through the lens of the Individual Differences Theory of Gender and IT. The remainder of this section details the theory, data collection and data analysis of the research project.

The Individual Differences Theory of Gender and IT
The Individual Differences Theory of Gender and IT as proposed by Trauth (Trauth, 2002; Trauth et al., 2006; 2005; 2004) represents the middle ground between the psychological and sociological explanations. In doing so, the Individual Differences Theory of Gender and IT focuses on an individual level of analysis while acknowledging societal influences. It also understands that the skills needed to enter or to be successful in the IT profession span the gender continuum. The theory investigates the individual variations across genders as a result of the combination of personal characteristics and environmental influences in order to understand the participation of women in the IT profession. Hence, the focus is on differences *within* rather than *between* genders. The theory also examines women as individuals who possess different technical talents and inclinations and respond to social shaping in unique and particular ways. Therefore, the Individual Differences Theory of Gender and IT takes into account the uniformity of social shaping and background and critical life events (Morgan et al., 2004; Quesenberry and Trauth, 2005; Quesenberry et al., forthcoming; 2004; Trauth, 2002; Trauth and Quesenberry, forthcoming; Trauth, 2002; Trauth et al., 2006; 2005; 2004).

The Individual Differences Theory of Gender and IT is comprised of three general constructs that influence gender and IT: personal data, shaping and influencing factors and environmental context (Trauth et al., 2004) (see Table 1). Personal data includes: demographic data (e.g. age, race and ethnicity), lifestyle data (e.g. socio-economic class and parenting status), and workplace data (e.g. job title and technical level). Shaping and influencing factors include personal characteristics (e.g. educational background, personality traits and abilities) and personal influences (e.g. mentors, role models, experiences with computing, and other significant life experiences). Environmental context include cultural attitudes and values (e.g. attitudes about IT and/or women), geographic data (about the location of work) and economic and policy data (about the region a woman works). Collectively these constructs contribute to the differences among women in the ways they experience and respond to characteristics of IT work, the IT workplace and societal messages about women and IT.

4

**Table 1: A Conceptual Framework of the Individual Differences
Theory of Gender and IT**
(From Trauth et al., 2004)

Personal Data	Demographic Data	Age Ethnicity Gender Nationality Race Religion Sexual Orientation
	Lifestyle Data	Children Family Background Family Work Background Spouse/Partner
	Workplace Data	Career Characteristics Industry Type Job Title Technical Level Type of IT Work
Shaping and Influencing Factors	Personal Characteristics	Education Interests and Abilities Personality Traits IT Identity Gender Identity
	Personal Influences	Exposure to Computing Educational Experiences Life Experiences Role Models and Mentors
Environmental Context	Cultural Attitudes and Values	Attitude Toward Women, Women Working, Women Working in IT Academic Attitudes toward Women (In General, in IT) Workplace Attitudes Toward Women (In General, in IT)
	Geographic Data	Location Population History
	Economic Data	Employment Overall Information economy employment
	Policy Data	Relevant Laws and Policies

The primary aim of this research project is to articulate and test the Individual Differences Theory of Gender and IT via a theory building process in which sub-category themes emerge from the data and directly inform further theory refinement. Daft (1985) argues that theories should explain why and give data meaning by interpreting and

providing insight into real behavior. In this sense, the Individual Differences Theory of Gender and IT is used to explain and give meaning to the interpretation of our data. In addition, Weick (1995) argues that research should begin with a vision of a theory and then overtime build the theory "from entwined ideas at the edge of words to a linear order in which the ideas are unraveled and set forth" (TenHouten and Kaplan, 1973: 147). Thus, the process of theorizing consists of research activities (such as abstracting, relating, selecting, explaining, synthesizing and idealizing), which result in research products (such as reference lists, data, diagrams and frameworks). These emergent products are beneficial because they summarize research progress, and give direction to future theory work.

Data Collection

Data collection methods employed in this research project include: in-depth face-to-face interviews with female practitioners and academics, structured behavioral observations and document analysis. The in-depth face-to-face interviews last between 60 and 120 minutes, although the majority of interviews are approximately 90 minutes in length. Interviews are held in private meeting spaces with the interviewer and the interviewee. The interviewees are assigned pseudonyms to guarantee conditionality. The interviews are generally held in the interviewee's place of employment, but upon request, the interviews have occasionally been held in alternative locations such as interviewee's home or off-site meeting facilities. The principal investigator of the grant (and first author of this paper) conducts all interviews. Two research assistants (including the second author of this paper) occasionally accompany the principal investigator on data collection efforts. In addition to the interviews, structured observations and document analysis techniques are conducted to gather data on participants and the environmental context in which they live and work. These additional forms of data collection methods allow the researchers to partly socialize themselves into the research population and witness social interaction firsthand (Creswell, 2003; Mintzberg, 1973).

In order to discover the nuances and complexities of the under representation of women in the IT profession, organic-strategic sampling practice is employed as an act of focusing through sampling. Organic sampling is used to grow and develop throughout the research process in a way that is crucially related to the emerging shape of the research project (Mason, 2002). Hence, participant demographics and characteristics are continuously evaluated to unsure a diverse and relevant range of participants are being captured in the project. Strategic sampling is used to produce a relevant range of contexts or phenomena, in order to encapsulate a relevant range in relation to the context (experiences, characteristics, influences). Doing so, demonstrates the relationship between the sample and the wider context is not ad hoc, accidental, or purely opportunistic (Mason, 2002).

In this sense, our sample has been designed to capture participants from diverse background. Interviews from a minimum of 90 female IT practitioners have been evenly divided across three different geographical regions of the United States: Northeast (Boston/Route 28, Massachusetts), Southeast (Research Triangle/Charlotte, North Carolina) and Mid Atlantic (Central Pennsylvania). These three locations were chosen in order to increase the variation in socio-cultural and economic characteristics of study participants as well as the variation in participants' work and living environments. The

kinds of societal variation that are sought include: racial, ethnic and lifestyle variation; the cost of living; attitudes toward women, women working and women working in IT, and the role of the IT sector in the local economy. Furthermore, approximately 30 female IT academics are also participating in this study. These women are drawn from academic institutions throughout the United States. Academic participants also represent a range of ages, levels in the academic hierarchy, and IT disciplines (e.g. engineering, computer science, MIS, and information science/systems). Status of data collection efforts can be found in Table 2.

Table 2: Status of Data Collection Efforts

Field Site Location	# Interviews Planned	# Interviews Conducted
Massachusetts	30	32
North Carolina	30	24
Central Pennsylvania	30	28
Academics	30	28
TOTAL	**120**	**112**

Data Analysis
The data analysis is conducted using theoretical/selective coding and open coding techniques. Theoretical/selective coding is the process of delimiting the theory to a few core variables which act as a guide for data collection and analysis (Fernandez, 2004; Glaser, 1978: 6-72). In this research, the theoretical/selective coding process focuses on the main constructs of the Individual Differences Theory of Gender and IT (personal data, shaping and influencing factors and environmental context). As a result of selective coding, the research focuses on the basic social processes and personal conditions that are present in the data. This delimitation of the analysis demonstrates the relationship between the constructs and the phenomena at hand (Glaser and Strauss, 1967; Strauss, 1987). Open coding is a part of the grounded theory approach to qualitative analysis developed by Glaser and Strauss, but is employed in this research as a means of theory building. The essential features of open coding include: 1) an inductive development of provisional categories; 2) the ongoing testing of categories through conceptual analysis and comparison of categories with data that is already coded; and 3) altering the existing categories as other emerge or are eliminated (Strauss, 1987: 11-13; Trauth, 2000).

A significant amount of the effort in this research project has been devoted to the development of a highly detailed coding scheme for analyzing the data in support of theory development and refinement. This coding scheme was developed collaboratively by the Principal Investigator and two research assistants based upon transcripts of the initial round of interviews and the results of prior research. Inter-coding reliability was also achieved to guarantee consistency of coding style across different cases (Leedy and Ormrod, 2005). The constructs that emerged from this coding process fall into three categories: 1) objective data; 2) shaping and influencing factors; and 3) emergent theory. Objective data includes: participant demographic information (such as gender, age, race,

sexual orientation, and geography); and participant work characteristics (such as job title, type of IT work). Shaping and influencing factors include: personal characteristics (such as education, and personality); personal influences (such as exposure to computing, and educational experiences); and environmental influences (such as experiences of regional cultural attitudes toward women, experiences of employing organization's attitudes toward women, and experiences of academic institutions' attitudes toward women). Emergent theory includes: gender experiences (such as the role of gender in one's career); Individual Differences Theory of Gender and IT (such as individual variation in societal messages, reaction to messages, technical capabilities, and 'male' and 'female' behaviors); perception of IT profession (such as male and female stereotypes, IT work stereotypes, and balancing family and work).

Findings to Date
To date, the Individual Differences Theory of Gender and IT has been applied to the influence of environmental context in the under representation of women in the IT workforce (Trauth et al., 2005), the role of parenthood (Quesenberry et al., forthcoming; 2004) and ubiquitous computing in work-life balance (Quesenberry and Trauth, 2005), and the role of social networking in the IT profession (Morgan et al., 2004). The remainder of this section will provide a brief overview of each research theme, and illustrate the ways in which the Individual Differences Theory of Gender and IT is manifested and can be applied to the issue of female inequality in the IT profession.

Environmental Context
The Individual Differences Theory of Gender and IT has been used to analyze the role of environmental context in the under representation of women in the IT profession. This analysis explored two questions: 1) does environmental context exert an influence on the experiences of women in the IT profession; and 2) how are these factors manifested. The analysis took a deeper examination by investigating the interaction between two constructs - gender and geographical location - in order to strengthen the environmental construct of the Individual Differences Theory of Gender and IT. The results suggested that economic factors such as size of the information economy, household income and cost of living, and cultural factors such as attitudes and values regarding women, women working and women working in IT do exert an influence on the experience of women in the IT profession. These findings bolster an argument in favor of looking beyond the data at hand, to the women *in context* (Trauth et al., 2005).

Parenthood and Work-Family Balance
The Individual Differences Theory of Gender and IT has been used to investigate the role of balancing work-family issues in the IT profession and the connection between these issues and the under representation of women in technical careers. This research presented a framework for analyzing work-family balance to show the range of ways in which work-family considerations influence women's IT career decisions. The framework supported the theoretical argument of the Individual Differences Theory of Gender and IT that women exhibit a range of decisions regarding career and parenthood: the non-parent, the working parent, the "back-on-track" parent and the "off-the-track" parent. The findings illustrated an identifiable theme that crosses geographical regions

8

and timeframes: societal messages are complex and difficult to digest, and are processed in different ways by different women. Yet, these messages contribute to the decisions women make about their professional and personal lives (Quesenberry et al., forthcoming; 2004).

Ubiquitous Computing and Work-Life Balance
The Individual Differences Theory of Gender and IT has been used to explore a particular instance of how ubiquitous computing is utilized to maintain work-life balance from the perspectives of women the IT profession. The findings demonstrated that ubiquitous computing has a role in work-life balance with regard to asynchronous communication, office relationships, work productivity and personal life benefits. Yet, a detailed explanation of these themes required a nuanced understanding of the range of work-life balance issues and their influence on ubiquitous computing. With regard to asynchronous communication women in urban areas were more likely to use and value telecommuting. Women who expressed stress from a 24/7 work style typically had children. With regard to office relationships and work productivity, women who were younger in age were more likely to use ubiquitous computing as social networking tools. Women who were less experienced with technology found the fast-paced change of ubiquitous computing stressful. These findings demonstrated that a crucial step in the process of developing work-life balance programs is to think expansively about changing particular work practices and/or the use of ubiquitous computing (Quesenberry and Trauth, 2005).

Social Networks
The Individual Differences Theory of Gender and IT was used to investigate how women in the IT profession are affected by and relate to predominately male informal social networks. These networks are important for information sharing in a less formal setting, and to establish and build trust in personal relationships. This research presented a conceptual framework to explain the reactions and strategies with respect to the network that women employ for continued participation in the IT profession. The framework illustrated the experiences of proactive and reactive "insiders" and "outsiders" to the network. The analysis demonstrated that women respond to exclusion from the network in a variety of ways through a mechanism of their environment, personality, and responsibilities. In addition, the diversity of the responses to the network demonstrated problematic nature of gender generalizations.

Individual Inequality
The theme of individual inequality is evident in each of the various research streams of this research project and supports the conclusion that *not all women experience inequality in the same way.* With regard to the environmental context theme, we found evidence that both the geographical location and the IT economy shape inequality messages that women receive in their personal and professional lives. In addition, the parenthood and work-life balance theme suggested that the women in our study express their freedom to make decisions about having children. Yet, their decisions shape the inequality messages they receive and react to when dealing with issues of family and career. Finally, several

women spoke of instances of inequality in terms of joining social networks, which was dependent on factors such as personality type and success strategies.

Future Research

In the fourth and final year of the research project, the focus will be on the following activities: the completion of the remaining ten interviews (minimum), the completion of the coding process, and the continued systematic analysis of data and writing of publications. More long term, there are plans to develop an American national survey that is based on the Individual Differences Theory of Gender and IT. Furthermore, findings from this research are being used to develop and undergraduate course on diversity in the IT workforce, which will be taught in the fall of 2005 in the School of Information Sciences and Technology at the Pennsylvania State University.

Currently, three doctoral candidates are applying the Individual Differences Theory of Gender and IT to a range of diversity and IT research dissertations. One doctoral candidate (and second author of this paper) is employing the Individual Differences Theory of Gender and IT in an extension study of the under representation of women in the IT profession. The objective of this study is twofold. First, to more deeply investigate the role of the organizational factors in the under representation of women in the IT profession in order account for these constructs in the Individual Difference Theory of Gender and IT. Second, this research will test the theory by developing a quantitative survey tool that accounts for individual, organizational and societal factors. A second doctoral candidate is employing the Individual Differences Theory of Gender and IT in a study of indigenous New Zealand Maori and IT. A third doctoral candidate is employing the Individual Differences Theory of Gender and IT in a study of web search capabilities of diverse individuals. The objective of this study is to better understand how the diversity of individuals can influence system design in order to overcome social exclusion.

References

Beekhuyzen, J., Nielsen, S., von Hellens, L. (2003). "Challenging Dualisms in Female Perceptions of IT Work." *Australian Journal of Information Systems*, 10(2): 105-114.

Creswell, J.W. (2003). *Research Design: Qualitative, Quantitative, and Mixed Method Approaches* (Second Edition). Sage Publications: Thousand Oaks, California.

Daft, R.L. (1985). "Why I Recommend that Your Manuscript be Rejected and What You Can Do about It." In Commings, L.L. and Frost, P.J. (Eds.), *Publishing in the Organizational Science*. Irwin: 193-209.

Fernandez, W.D. (2004). "Using the Glaserian Approach in Grounded Studies of Emerging Business Practices." *Electronic Journal of Business Research Methods,* 2(2): 83-94.

Glaser, B.G. (1978). *Theoretical Sensitivity: Advances in the Methodology of Grounded Theory.* Sociology Press: Mill Valley, California.

Glaser, B.G. and Strauss, A.L. (1967). *The Discovery of Grounded Theory: Strategies for Qualitative Research.* Aldine Publishing Company: New York.

Leedy, P.D. and Ormrod, J.E. (2005). *Practical Research: Planning and Design* (Eighth Edition). Pearson Prentice Hall: Upper Saddle River, New Jersey.

Mason, J. (2002). *Qualitative Researching* (Second Edition). Sage Publications: Thousand Oaks, California.

Mintzberg, H. (1973). *The Nature of Managerial Work*. Harper and Row: New York.

Morgan, A. J., Quesenberry, J. L., and Trauth, E. M. (2004). "Exploring the Importance of Social Networks in the IT Workforce: Experiences with the 'Boy's Club.'" In Stohr, E. and Bullen, C. (Eds.), *Proceedings of the 10th Americas Conference on Information Systems*, New York: 1313-1320.

Nielsen, S., von Hellens, L., Beekhuyzen, J. and Trauth, E. (2003). "Women Talking About IT Work: Duality or Dualism?" In Trauth, E.M. (Ed.), *Proceedings of the 2003 ACM SIGMIS Conference on Computer Personal Research,* Philadelphia, PA, USA, ACM Press: New York: 68-74.

Quesenberry, J.L., Morgan, A.J. and Trauth, E.M. (2004). "Understanding the 'Mommy Tracks': A Framework for Analyzing Work-Family Issues in the IT Workforce." In Khosrow-Pour, M. (Ed.), *Proceedings of the Information Resources Management Association Conference,* New Orleans, Louisiana, USA, Idea Group Publishing: Hershey, Pennsylvania: 135-138.

Quesenberry, J.L., and Trauth, E.M. (2005). "The Role of Ubiquitous Computing in Maintaining Work-Life Balance: Perspectives from Women in the IT Workforce." *Designing Ubiquitous Information Environments: Socio-Technical Issues and Challenges. Proceedings of the International Federation for Information Processing (IFIP), Working Group 8.2 Information Systems and Organizations.*

Quesenberry, J.L., Trauth, E.M., and Morgan, A.J. (forthcoming). "Understanding the 'Mommy Tracks': A Framework for Analyzing Work-Family Balance in the IT Workforce." *Information Resource Management Journal.*

Strauss, A.L. (1987). *Qualitative Analysis for Social Scientists.* Cambridge University Press: Cambridge.

TenHouten, W.D. and Kaplan, C.D. (1973). *Science and Its Mirror Image.* Harper and Row: New York.

Trauth, E.M. (2002). "Odd Girl Out: An Individual Differences Perspective on Women in the IT Profession." *Information Technology and People,* 15(2): 98-118.

Trauth, E.M. (2000). *The Culture of an Information Economy: Influences and Impacts in the Republic of Ireland.* Kluwer Academic Publishers: Dordrecht.

Trauth, E.M. (1995). "Women in Ireland's Information Industry: Voices from Inside." *Eire-Ireland,* 30(3): 133-150.

Trauth, E.M., Huang, H., Morgan, A.J., Quesenberry, J.L., and Yeo, B. (2006). "Investigating the Existence and Value of Diversity in the Global IT Workforce: An Analytical Framework." In Niederman, F. and Ferratt, T. (Eds.) *Managing Information Technology Human Resources.*

Trauth, E.M., Nielsen, S.H., and von Hellens, L.A. (2003). "Explaining the IT Gender Gap: Australian Stories for the New Millennium." *Journal of Research and Practice in IT*, 35(1): 7-20.

Trauth, E.M., Nielsen, S. and von Hellens, S. (2000). "Explaining the IT Gender Gap: Australian Stories." *Proceedings of the 10th Australasian Conference on Information Systems.*

Trauth, E.M., Quesenberry, J.L., and Morgan, A.J. (2004). "Understanding the Under Representation of Women in IT: Toward a Theory of Individual Differences." In Tanniru, M. and Weisband, S. (Eds.), *Proceedings of the 2004 ACM SIGMIS Conference on Computer Personal Research,* Tucson, Arizona, USA, ACM Press: New York: 114-119.

Trauth, E.M., Quesenberry, J.L., and Yeo, B. (2005). "The Influence of Enviornmental Context on Women in the IT Workforce." In Gallivan, M., Moore, J.E., and Yager, S. (Eds.), *Proceedings of the 2005 ACM SIGMIS CPR Conference on Computer Personnel Research,* Atlanta, Georgia, USA, ACM Press: New York: 24-31.

von Hellens, L. and Nielsen, S. (2001). "Australian Women in IT." C*ommunications of the ACM*, 44(7): 46-52.

von Hellens, L., Nielsen, S. and Trauth, E.M. (2001). "Breaking and Entering the Male Domain: Women in the IT Industry," *Proceedings of the 2001 ACM SIGMIS Conference on Computer Personal Research.*

Weick, K.E. (1995). "What Theory is Not, Theorizing Is." *Administrative Science Quarterly,* 40(3): 385-390.