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Gender code: A narrative ethical glance at women developers in Finnish Information Technology

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Abstract: The Information Technology (IT) sector is the current Athens of all industry. It is no longer geeky, but chic, defining the modes and limits of modern civilization. IT in its numerous forms, provides the vehicle of expression and citizenship in contemporary times. While more women designers and software developers enter the field are they experiencing a stronger sense of equality? This paper reports a narrative inquiry that probed the experiences of women professionals in the IT field. Particular attention was placed on how females entered the field, the roles and tasks that they often found themselves undertaking, and social factors in organizational communication that were specific to being female in the field. The results indicate biased conditions. Historical discourse promoting men as creative and intellectual (i.e., technical) still thrives and women are seen as administrators (craftspeople). The paper ponders how these social dynamics affect the cognitive-affective processes of women developers.

Keywords: women; gender; ethics; design; profession; information technology

1. Introduction

Young, white, geeky (yet cool), and of course, male. These are supposedly the *men* (people) behind the global digital transformation. A digital transformation in which technology (tech) and technical skills become the artistic renaissance of the new design era (Arnšutu, 2011). Sound (look) familiar? While a million and one images of Silicon Valley and the Wild West of technology development come to mind, there are certain stereotypes that media, publics, and organizations live by (Cook, 2020; Hwang, 2005). Technology, its development, and its business hold strong positions in shaping the face of design today (Melbourne, 2015), and vice versa. Design has already been recognized as a strategic means to both market and manage the complexity of modern technology business (tech biz; Gharajedaghi, 2011). As



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such, the two play a predominant role in defining industry and society, and particularly the image of future professionals. For instance, according to the Hotmart (2023) blog for future digital professions, the top future professions are led by: 1) software developers; 2) specialists in user/customer experience; and 3) creators (e.g., digital influencers). There are both creative and engineering tendencies indicated within these titles that serve to appeal to various population segments (Capretz, 2015). All three areas require creativity and capacity for complex problem-solving, and all three influence the form and logic of digital products and services. Thus, the line between design, creativity, and software development is fine in today's professional landscape.

Coined by the *Harvard Business Review*, the term 'information technology' (IT) was first expressed to distinguish the difference between purpose-built machinery (i.e., a paper machine or tractor) from general-purpose machinery (i.e., digital computers used for other purposes – word processing, spread sheets, operations supporting business enhancement etc.) (Castagna & Bigelow, n.d.). Other terms used interchangeably with IT are information and communication technology (ICT), and computing. At the heart of IT and its associated industry is the development of computational and data-driven products. This includes all forms of computer programs (software), devices (hardware), and more recently artificial intelligence (AI), and related game-changing innovations by which our societies are becoming ever more dependent. Markets are becoming ever more concentrated towards tech biz and IT development, and more equality is seen in relation to *who applies and gains employment* within the field – male, female or other (Bolden-Barrett, 2019). Yet, simply because more women work in the sector, does not mean that equality applies to the roles and treatment of female or other professionals who do not meet the young (and in some cases, *very young*, see Stypińska, Rosales, & Svensson, 2023), white, male ideal promoted in Silicon Valley stereotypes (Burleigh, 2015; Hossfeld, 1990). Quite the contrary, as anecdotes and recollections of women's professional experiences emerge, it is also seen that the quality and types of experiences of these professionals diversify from male counterparts (Erath, 2023). Studies reveal inequalities in work-life balance between women and male IT professionals (Bharathi & Bhattacharya, 2015), and that women's pay levels are significantly lower (International Labour Report 2022-2023 cites 20% less pay on average). Women perform undesirable tasks furthest away from creative duties (Rosser, 2005). While these stories emerge, scholarly interest in aspects affecting women's professional experiences in the IT field seems to be lagging, as witnessed in the relatively small body of literature available.

This paper presents a study that probed the longitudinal work experiences of middle-aged women (40 to 60 years old) professionals operating in IT. This focus was decided on the basis of the authors' experiences as women in IT. It was seen as imperative to begin with known territory, then branch out towards complexity by: a) isolating issues from a cross-section of themes that will be tested with a broader spectrum of gender identities; b) specifically utilizing this age group (as compared to a younger cohort) to identify whether changes have occurred over time; and c) examining factors that contribute to the under-representa-

tion of women in the IT field. The study is timely due to its emphasis on the intersection between the treatment of women professionals in IT and how they realize (actuate) their duties. Here, there is a keen focus on women in relation to creative duties. This is pertinent given the significant role that IT plays in shaping the rest of society's everyday lived experience. Thus, a question underlying the study relates to how digital products are affected or neglected through gender bias and exclusion in design-based IT professions. By design-based professions the authors refer to information intensive, decision-making and direction defining roles that influence the design outcome of IT development, including the work of software developers. This means that the larger objectives of the current study are two-fold: a) how more creative and inclusive products may be developed by mitigating the effects of bias on the cognitive-affective performance of female IT professionals; and b) how through dissecting the factors contributing to negative experiences of female professionals in IT we can build social solutions to foster more ethical and equal modes of practice in the field.

2. Gender, profession, and cognitive-affective designer thinking

Assumed roles based on gender are inherent to all cultures (Kimmel, 2000). Latent conceptions and new attributions of hunter-gatherers among male and female roles, persist in the 21st century (Hansen, Jensen & Skovsgaard, 2015). The concentration of women's professional roles is mostly represented in the health, care, and education sectors (Erath, 2023). This means that globally, 97.78% of nurses (and their assistants) are female. From an administrative perspective, 88.45% of all receptionists are female, as are 95.65% of legal secretaries. Over 90% of the world's primary school teachers are women (Statista, 2023). From a cultural perspective, 89.09% of dancers are female, and so too are 75% of all runway models (Zippia, 2023). It is internationally recognized that for national economies to fare well, women need to be active in the work force (UN Women, 2023). Yet, as we see in these figures, professional roles are distributed heavily according to lasting stereotypes. If women are not actively caring for, raising and educating others, they should exist for sexual and aesthetic pleasure. As Simon Davis (1990) states, men are "success objects" and women are "sex objects".

Sadly, despite great effort, still significant imbalance can be observed in the numbers of gender representation among IT professionals. In fact, only 28% of science, technical, engineering and mathematical (STEM) roles are held by women (White, 2023). Even worse, just 38% of all women who have graduated from university with a major in computer science actually work in the IT field (Zippia, 2022). These numbers are crucial when understanding the influence of the IT sector in forming society and its outlook. Not only does diversity in IT teams mean higher levels of employee engagement, better and more creative performance, as well as greater levels of employee retention (White, 2023), it also means fairer, ethical, and more carefully designed (thoughtful) systems (Greene, Hoffmann & Stark, 2019).

Not only do the effects of equality and inequality reflect in the systems we are surrounded by on a collective level, but the implications of constant marginalization, exclusion and in

some cases, gender-based harassment, carry with them psychological, cognitive, and performance-based ramifications (Hitlan, Clifton & DeSoto, 2006; Syrjämäki & Hietanen, 2019) as seen in Figure 1.

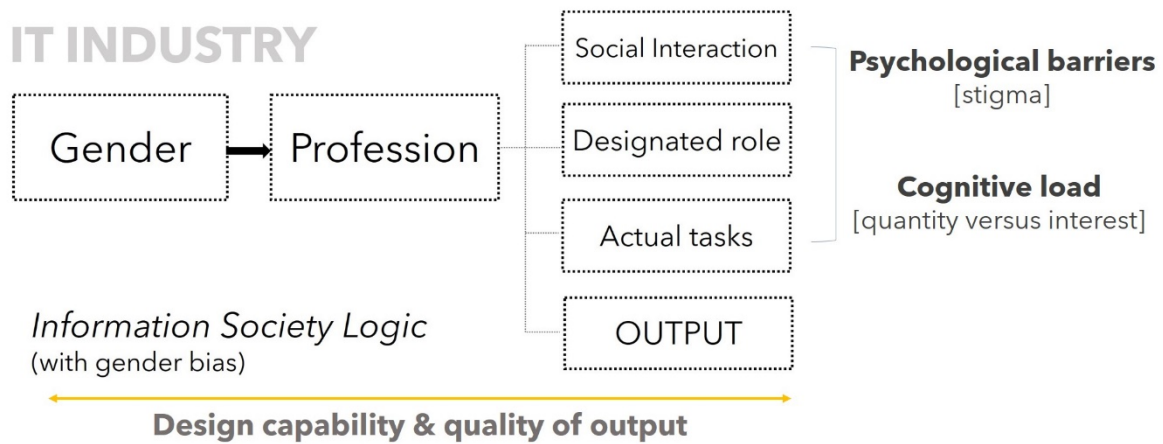


Figure 1 Professional gender assumptions and impact on design

Figure 1 shows the role of gender in selecting or being selected for a profession. It indicates the factors of social interaction (across genders and cultures), the roles designated to professionals (formal and informal), the actual tasks that the professional engages with, and the subsequent output. It observes psychological barriers and stigma attached to the gendered workforce experience and cognitive load. The psychological barriers include the impact of negative interpersonal interaction on 'self-talk' - the way in which we inform ourselves how we are and how we exist in the world (Lefebvre et al., 2022). Research focusing on the impact of self-talk on performance has been particularly concentrated to the field of sports, observing factors such as anxiety and stress generated by negative self-talk (see VanRaalte, Vincent & Brewer, 2016).

Another factor to consider as an outcome of the interplay between social interaction and role delegation is cognitive load. In other words, as seen in current international statistics (UN Women, 2023; Urwin, 2023; White, 2023; Zippia, 2022) women are all too often not only being excluded from technical and creative roles in IT - i.e., the interesting task areas – but, they are being burdened with excessive amounts of administrative work. There is an interaction between less interesting or stimulating work that is confounded by an abundance of (boring, repetitive) tasks (Vanneste et al., 2021). Moreover, studies have shown limitations in the capacity for women to control their own resources, goals, and outcomes (Acker, 2006). This, combined with the aforementioned factors, results in decreased wellbeing among women professionals (Alfrey & Twine, 2017).

Creativity and the ability to exercise it in the workplace contribute to more than just wellbeing. Creativity and the ability to think and work like a designer engenders a form of agency and ownership within the professional and their team that carries into product (Umukoro & Egwakhe, 2021). Identity is a key component of how people experience agency, belonging,

and contribution, particularly within knowledge intensive work (Alfrey & Twine, 2017). Traditionally this too has been negated from the perspective of women. Looking back down the lines of design history we see earlier versions of the same phenomena we are currently experiencing in the IT industry. In Finland, while industry started to flourish during the late 1800s and early 1900s, women applying to schools of art and design were directed towards the textiles and handicrafts departments (Svinhufvud, 1998). This was because they were not considered intellectually capable of undertaking creative, decision-making tasks that would result in forging the direction of everyday living, its products, and society (Kronqvist & Rousi, 2023; Riska, 2008; Utriainen et al., 2014). IT design and development require multi-professional teams – all team members being contributors to the design and direction of the products and services. The neglect to integrate the creative contribution of women weakens the quality and performance of designs in addition to their attributes of inclusivity, fairness, and sustainability.

3. Method

Narrative inquiry (Clandinin & Caine, 2013) was employed to investigate the experiences and constructions of professional identity and approach of women working in the IT field. The aim was to examine *designer thinking* (cognition and affect when engaging in design and software development¹ work) and how it was affected by *being female* in the sector. Participants were asked to write a free-form story about their own professional journey, beginning from when they decided to study IT, up to the present day. A set of questions were provided to the participants to support their writing. The questions were designed to guide the writing process and support what the participants were trying to explain. The data was collected from December 2022 to January 2023.

3.1 Participants

When selecting participants, concentration was placed on women professionals who had been working in the field for over 10 years. Ideally, the participants would have gained substantial experience from several roles during their careers. This meant that the participants were over 40 years of age. The minimum participant age was 32 years old, and the oldest 68 years of age. The average age was 49.7 years while the mean stood at 48.1. Moreover, one criterium of selection was that participants were born female, meaning that they have not experienced life or career as a man or non-binary, as this would affect the results via both external (social) and internal (social psychological) factors. Focus was placed on women in more design-focused roles, including information architects and designers. Convenience and snowball sampling (Emerson, 2015; Parker, Scott & Geddes, 2019) was employed, and par-

¹ These days various design thinking methods that encourage gaining deeper understand of users and problem spaces are also utilized by software developers (see e.g., Gama et al., 2023).

Participants were recruited either directly via Author 1's own network, the employer's discussion channels (i.e., Slack and Teams), or via a call for participants posted on LinkedIn. Twenty-two women responded to the inquiry, while 17 ended up participating in the study.

3.2 Procedure and ethical research

Upon responding to the call for participants, volunteers were sent an email with a Microsoft Word template featuring the support questions. As the aim was to capture free-form responses, participants did not need to follow this structure. In addition to the study template, in compliance with the General Data Protection Regulation (GDPR) and ethical research practice, participants were supplied with a research notice (information of the study), privacy notice (information on the data to be collected, processing, storage and publishing practices), and an informed consent form. Participants were asked to sign the informed consent before proceeding with writing their responses. They were then given two weeks to write their narratives, then send them to Author 1. Responses were on average 3.3 A4 pages long (with a mean of 3.1 pages – average word count 1028).

3.3 Analysis

Once the narratives were received, Author 1 analyzed the texts with the aid of Atlas.ti software. In the software, data was coded and categorized according to the support questions and themes. The codes were further developed via interesting observations – aspects raised by the participants that the research had not previously accounted for. Specific attention was placed on matters that indicated a direct correlation between the participants' experiences and their female identity. Analysis took place, step-by-step. The first step was to attain and aggregate the background information provided by participants. The second step entailed devising the codes in Atlas.ti, then engaging in a more detailed thematic narrative analysis (Bengtsson & Andersen, 2020; Ronkainen, Watkins & Ryba, 2016). The codes and themes were then reviewed by Author 2, and via discussion consensus was made on relevant themes emerging in the results that are thus, reported in this paper.

4. Results

Fourteen participants held a higher education degree (Bachelors or Masters). Three reported that they had graduated from high school. Given the ages of the participants, from the time they had participated in school to the present, changes have occurred in the school system. Thus, most of the participants have completed high school and achieved the requirements of tertiary education entry (see Finnish National Agency for Education, 2023). Eight participants had more than one qualification such as vocational college in addition to their bachelor's or master's degree or more than one bachelor's or master's degree. Some of the participants reported high school diplomas they possessed.

Three participants did not have an IT qualification or had not completed their education in the field (two participants). Two participants dropped out of IT education – one due to poor

career opportunities at the time (P3), and the other due to employment already during studies (P17). Owing to job demands, P17 never attempted to finalize studies. Three participants obtained their education in another field outside IT. For example, P10 graduated with a master's degree in psychology, others graduated from Governmental Studies (P7, P12). These participants ended up in an IT profession without formal education in the field, by participating in IT-related tasks.

Many transitioned to IT by chance. For this reason, they did not have any original career plans for this, and in particular, plans were not realized from this perspective. Many arrived in the IT field through work and later became interested in education in this area. Eight participants reported that chance was one of the reasons for entering IT.

"I accidentally ended up in the IT field." (P15)

"I landed in the field coincidentally. After high school I didn't know which direction to take, and I noticed from the Christian College newsletter a course for IT in the coming year... I continued along the IT line at Commercial School. I undertook a summer job in the IT department of Company A Ltd and through this got to know the work of the field. After graduating from commercial school, I applied for work at Company B, and I'm still here. I liked programming, flow charts, and still 'love' process diagrams." (P1)

"Before coming across to the IT field, it was clear to me that I wanted to study languages and work as an interpreter. When a general application round came up during my final year of high school, I couldn't find an educational institution featuring my desired studies in my hometown. I did not even think of changing locations. Some of my acquaintances worked in the IT field and I decided to apply for education in this field." (P5)

Nine participants had reported that it was interest that led them to the field. Six possessed skills that were relevant to the field, and four of them were persuaded by job opportunities. One of the participants mentioned that they chose IT because of its status in society.

During their professions, the participants worked in different sized companies. One of the participants was an entrepreneur. Overall, 23 work experiences were reported by participants about work in large companies (i.e., over 250 employees, see OECD, 2023). Thirteen mentions were of having worked for a public organization, 16 experiences were reported about working for mid-sized businesses (50-249 employees), and four participants for a small business (less than 10 employees). Ten mentions were made about working in other fields besides IT during their professional life. Participants had worked in various positions during their careers. Most of the participants had been in either project management or system development. Some of them had experience in leadership positions (team leaders or similar), sales, customer service or other organizational roles (i.e., research assistant).

Table 1 Professions.

Area	Count
Q3:1 Customer service	2

Q3:1 Management	5
Q3: 1 Other	7
Q3:1 Project management	17
Q3:1 Sales	1
Q3: 1 Solution design and im- plementation	10

One participant had acted in many different roles during her career. The participants reported the effects of gender differences by telling the stories of their work lives.

Experiences of gender influence were classified in the analysis as positive, neutral, and negative. The classifications are shown in Figure 2. Moreover, these experiences connect with social and work traits that were endowed upon the women due to their gender.

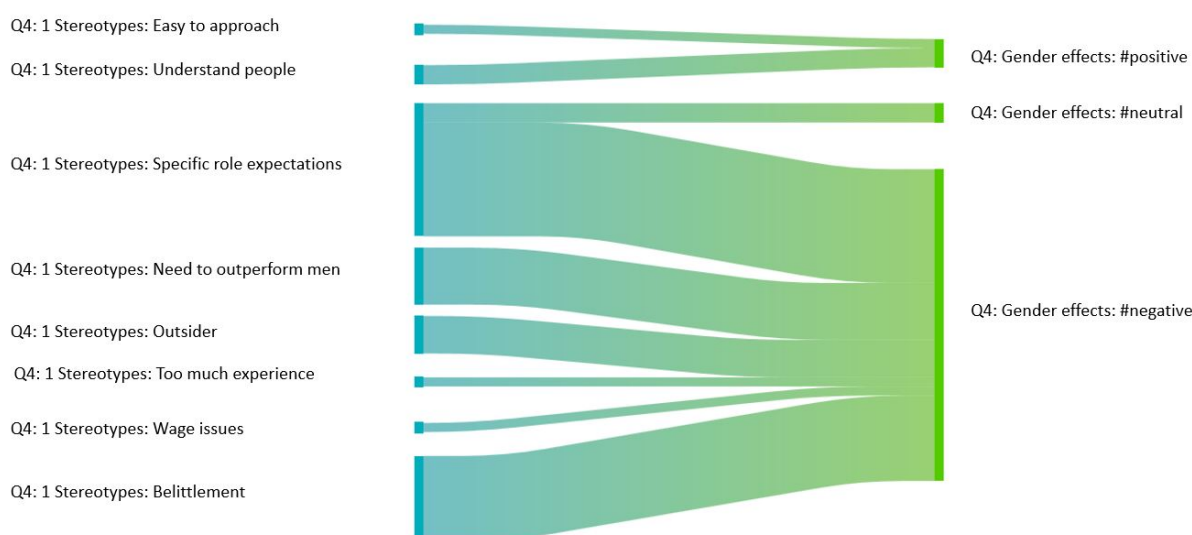


Figure 2 Gender related experiences and endowed traits.

Participants wrote about the experiences in which they noticed gender influencing success, emotional experience, role, and performance in their work. The participants had written positive, neutral, and negative experiences. The negative experiences amounted to 30 accounts. Two experiences were positive, and two neutral.

Participants noted two distinct factors in which being female influenced in a positive way: 1) approachability – participants found that being female meant that others perceived them as easier to approach; and 2) the ability to understand people – research has found that both psycho-physiologically (i.e., see neurological research on empathy in females, e.g., Christov-Moore et al., 2014) and environmentally (conditioned roles as carers, see e.g., Fogli & Veldkamp, 2011; Coleman & Hong, 2008), women are often more sensitive to understanding

others and their needs. Based on gender, particular attributions of roles and tasks are raised in 13 comments. Eleven of these comments are negative while two are neutral.

Specific role expectations are placed on women, and the participants mentioned that women were not seen as being 'technical'. They were expected to be secretaries and project managers.

"[...] I have needed to and still need to prove my competence in many circumstances because I am a woman. I am easily bypassed in relation to technical questions and both men and women are guilty of this. For example, if I'm in a situation where in addition to me, there is a man with a non-technical background, people still often direct their questions to the man. Sometimes I have taken advantage of this situation, whereby I have wanted the message to really reach the listeners, particularly if the listener group is male dominated. In these instances, I ask my male colleague to explain the issue. My presentation skills have always been complimented as being excellent. Because of this I don't believe that my technical credibility suffers due to an inability to present them." (P5)

This also occurred in instances where the tasks did not even fit the individual's job description in the project and/or project task. Numerous negative effects of being patronized or negated were reported (eight comments). In these comments, it became apparent that there were various forms of doubt and trust issues regarding women's abilities to manage their work. This was true particularly if the participant's roles entailed technical tasks such as architecture or software development.

"[...] there has ... been a pattern regarding gender roles: men are viewed as the technical experts, while women are administrators. This has ... manifested via men occupying the majority of the technical roles. Unfortunately, I have encountered attitudes that suggest women are incapable of technical tasks or cannot profess in them. Gender biases have been the most frustrating in circumstances where different secretarial tasks meaning documentation and organizational matters are allocated automatically to female participants." (P13)

Several mentions were made (six) of situations in which women felt that it was necessary to out-perform their male colleagues to achieve sufficient credibility and respect.

"As a young woman (approximately under 30 years of age), I experienced a form of 'girlifying' and negating of my competence, usually at the hands of a man (not of course all). I felt that I should prove my competence and that it should be understood 'all'" (P18)

There were three mentions in which participants expressed that they had been excluded from male-dominated teams and project groups. Additional mentions were made regarding salary inequality. The experience of being deprived of opportunities to demonstrate and showcase one's skills was also mentioned. This was interpreted by the participants as a display of the feeling of threat from male colleagues.

"The significance of networks is pronounced when attaining positions. Especially leading positions, they are still mostly dominated by men who have their own clique and even if there are women in it, often there is also the core group where they talk about motorcycles and men's stuff and there are no women there." (P12)

“Gender, and especially three parental leaves, meant that I was left in a low salary hole. Every time I was leaving or coming back from parental leave, I was out of promotion rounds. After my third child, I was lucky enough to have a supervisor who tried to fix the situation in whatever way he could. But, there were already too many years and salary cycles behind him. In a leadership role, I was the only woman in several management groups. I felt that I was an equal. But, when we had informal gatherings, I often also felt like an outsider.” (P14)

From the texts, there were 11 cases in which participants had experienced sexual disturbance. One woman was physically touched, and others had been subjected to verbal comments referring to gender.

“A few times during the 1990s (in my twenties) during party situations, I experienced something what would now be considered as sexual harassment, whereby people who were intoxicated touched me in inappropriate places. Those days, this kind of behavior was simply regarded as foolish (and I left the situation) [...] I did not pursue it further. I do not know whether even supervisors at that time would have known what to do regarding the issue.” (P1)

“Something like #MeToo might have happened, but any kinds of reactions were clearly dismissed with comments or a slap on the cheek, that the issue would be dropped as soon as it was raised. I have also thought that if something more awkward would have happened it could have been raised, and it would have been addressed with 100% certainty.” (P9)

“And those times when something was said - well, you are at least nice to look at (the reason for being present). [...] You don't say that to men, even if you could. I don't feel that I have explicitly experienced sexual harassment in work life despite a few inappropriate comments, which have led to me avoiding all situations in which people drink alcohol. People have even spread lies about me in those situations, and somehow it's always the woman's fault, especially according to other women. Thus, it's better not to go. If I go, I don't drink more than two drinks or I make sure I'm the driver. Sometimes I have to go for the sake of the team, and so I don't seem so strange. Trying to explain the reason for not going isn't effective because nobody wants to understand it properly. A woman's reputation goes downhill faster than a man's.” (P11)

While the study attempted to probe the influence of gender, and especially being female in IT, regarding design work, it inadvertently led to insight demonstrating a lack of trust and consideration for women's capability in technical (creative intellectual) roles and more sophisticated problem-solving skills (i.e., those involved in information system design and development). Thus, the earlier part of the results section concentrated on the utilitarian experiences of women professionals in the IT sector. Yet, from a hedonic perspective, we can see that women were also seen as sex objects, there for the pleasure (visual or physical) of men colleagues. This predominantly occurred when the women were younger (under the age of 30). As emphasized in the last statement, when incidents occurred, it was more likely that the women would either: a) be blamed for lying; or b) be the cause of the disturbance.

5. Discussion: The effects of the influence of gender

In the study, there were several cases in which women working in technical roles were either encouraged to take on administrative and people-oriented roles, or outright belittled. These situations induced negative experiences and sentiments and affected the women in terms of hindering their careers. While Finland is known for its equality and is recognized on the European (EU) level as occupying fourth place on the gender equality scale (society and work), this study demonstrates that there is still room for improvement. This particularly holds for the people-to-people interactions and systemic effects on job roles, tasks and interpersonal communication. There are biases towards women working in male dominated sectors, and even more pertinent, are the sectors that are categorized as male-specific, or assuming a male norm (Wahl, 2014). Sectors such as IT, and especially IT, shape our societies, world views and sense of self.

What is more, is the lack of trust in psychological safety (Edmondson & Lei, 2014) - the safety one feels when they have the support of their team and superiors – that females feel they will experience in the IT sector, may be a lingering deterrence for women to enter the field. For while national and international efforts attempt to engage females in studying and working in IT, the actual social feedback and experiences women have received do not promote fertile cognitive-affective grounds for technical roles or decision-making positions.

We see in this study and historically through design and technology discourse that it is males who are the creators – the intellectuals, technical people, inventors and designers (Svinhufvud, 1998). The problem here is that not only women and their experiences are excluded from design and development processes – as engineer, architect or designer – but the combined impact of neglect (of women's voices) and beratement (abuse) on their ability to perform. This results in a warped direction of IT development and societal transformation through hegemonic masculinity (Connell & Messerschmidt, 2005), in which women experience cognitive-affective difficulties impinging creative freedom, due to the influence of social discriminating factors (Kaiser & Miller, 2004). In other words, sexism impinges self-esteem and self-efficacy – the sense of competence (Swim et al., 2001).

To add to the dilemma of a biased and impaired landscape of design and development in IT are the effects of negative interaction on design creativity. Studies have shown that negative social interactions trigger negative creativity (Clark & James, 1999). Negative creativity is problematic as it is characterized by the will to impose harm or inconvenience on others. At its very best, negative creativity manifested in design and IT development can be a void of empathy, or antipathy – the development of systems that demonstrate that their creators simply do not care. Sound familiar?

6. Conclusion

The current study employed narrative inquiry (Clandinin & Caine, 2013) to investigate the experiences of women professionals in the Finnish IT field. Attention was placed on how females with substantial work experience (in years) had entered the field, what roles and tasks

they were predominantly attributed to, and how the matter of being female effected social interactions. In particular, the study strived to attain an understanding of the positioning of female professionals in relation to design and development. The authors aimed to understand the relationship between women and creative roles (i.e., technical realization) in the IT sector. The results show an active role of assumptions and delegation that contribute to peripherizing women to non-creative, administrative and support roles. There is a lack of trust in the ability of women to perform intellectual and technical tasks. Open sexually-loaded comments about appearance and sexualized behavior occurs both in work situations and team-building events. Women are left without credibility for their accounts of occurrences. Moreover, exclusion and poorer conditions are also prominent.

This study presents some limitations. Firstly, the sample size is relatively small. It comprised input from female participants across organizations in Finland. Diversity in culture and age would be beneficial to explore in terms of gaining more comprehensive and generalizable results. These results could be further tested for reliability and validity via a quantitative questionnaire. Attention should be placed on gender and its complexity. We chose females (those who were born as, and identify as) due to their under-representation in the IT industry. As the field of gender is complex, we felt it beneficial to start by scoping towards our own experiential terrain as middle-aged women, who have experienced changes in the work culture of the IT field (i.e., nature of work, organizations, economy, technology and culture). Additionally, the qualitative dimension would have benefited from in-depth interviews as several interesting aspects arose, such as narrative resonance with #metoo that would warrant deeper understanding. Future research steps will expand this study to encompass quantitative inquiry that collects the experiences of all genders across generations.

Furthermore, the study revealed several negative experiences from participants, which may skew the generalizability and representation of women in the IT overall. Thus, with such a small and culturally specific sample, the results should be handled with care. Overall, before assuming that equality is increased in regard to the industry and its output, scholars need to take an active glance at the conditions to which females are exposed. If aspiring for ethical, fair and unbiased products and systems (e.g., artificial intelligence) in IT, major steps need to be taken towards changing the attitudes and approaches towards women in and from the field. “We are not getting hired, and we are not getting promoted, and we are being systematically driven out of the industry” states corporate founder Shanley Kane in response to the ‘brogramming’ culture so commonly experienced (cited in Burleigh, 2015). Even given Kane’s success, her words of advice to girls are not motivating, as she argues that, “[t]here’s not a whole lot you can do to keep your career from being crushed by misogyny.” Against these words and a myriad of discussions surrounding ethical design, we recommend greater attention towards dissecting and subverting the bias generated through hegemonic masculinity. If IT design is not fair and ethical from its core, there is no chance for it to be so when meeting the end users. This paper represents an early portion of a larger study that aims to actively address symptoms (behavior) and causes (biases) in the IT industry and IT development. After future steps we will present a model that fosters and promotes equality in IT.

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