

BIAS IN THE LABEL “WOMEN IN TECH” & EFFECT ON THE RSE COMMUNITY

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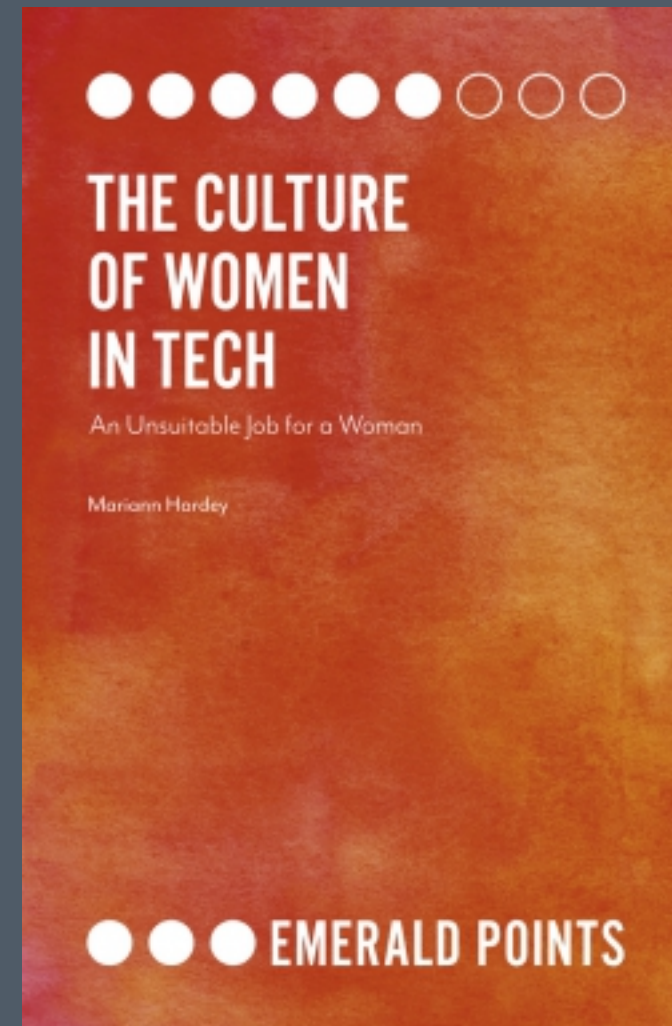
WHAT IS IT LIKE WORKING IN TECH?

Longitudinal study (2010-2019) examining how global tech professionals work in tech organisations and form part of tech communities.

With 563 tech professionals located in the UK, the USA, China and Taiwan.

Participants were recruited directly through the organisations and/or tech networks they were active members within (convenient and snowball sampling).

Growing concern to investigate how tech communities articulated and experienced diversity.



AIMS OF THIS TALK

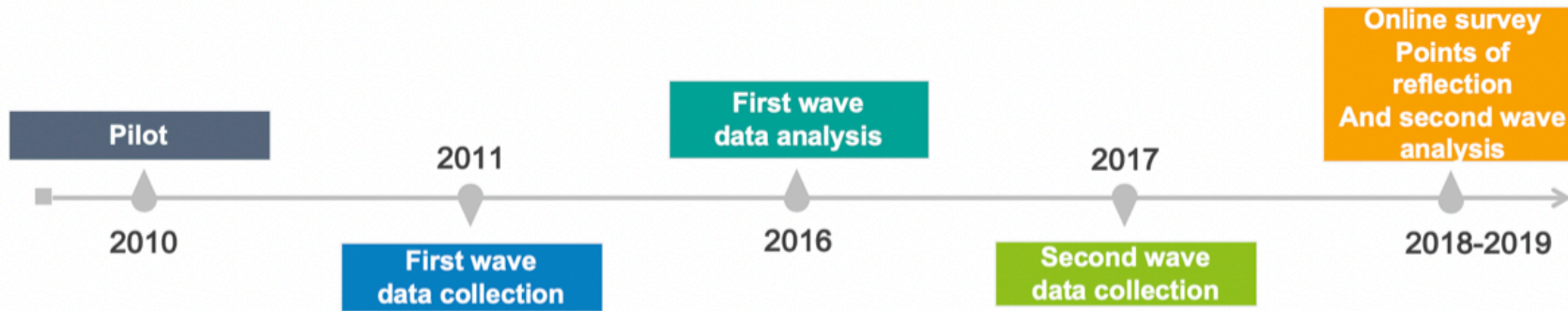
To ask important questions about how related tech communities such as RSE can promote diversity and inclusivity;

To caution against over-labelling or privileging categories in place of enabling policy and cultural change within organisations. To ask whether the same is happening with RSE?;

To speculate if we can align diversity agendas between established communities such as HPC with emerging communities working in RSE e.g. the newly established Society of RSE (SocRSE);

To enable us to discuss the impact of labels aligned to the promotion of diversity and inclusivity within and around RSE.

PRIMARY DATA



Year	Data capture	Region
2010	Pilot – interviews and small survey	UK
2011-2016	First wave data collection – interviews and focus-groups – mixed face-to-face and digital	UK, US, East Asia
2016	First wave research analysis, digital interviews and focus-groups	UK, US, East Asia
2017-2019	Second wave data collection - interviews and focus-groups – mixed face-to-face and digital	UK, US, East Asia
2018-2019	Online survey and longer points of reflection as digital narratives Second wave of analysis	UK, US, East Asia

Women (72%) and men (28%) tech workers drawn from across all three global regions.

Ethnic backgrounds, self-described as white by 40%, black by 26%, mixed ethnicity by 21%, and Asian by 13%;

Aged between 22 and 73 years of age;

Who identified as LGBTQIA+ by 31%;

With a disability 48%;

Annual salaries of participants from \$32,000 and in excess of \$760,000.

The majority (85%) were educated to college or graduate degree level.

Seventeen participants had majored in non-computing or non-technical fields.

THE LABEL WITH THE PROBLEM: 'WOMEN IN TECH'

Inspired by the work of Betty Friedan,
The Problem That Has No Name.
Title: *The Feminine Mystique*.
Publication Date: 1963. City of
Publication: New York, NY. Publisher:
W. W. Norton. Pages: 15-32.

The iterative
use of the
WiT label
has become
mainstream
from three
main sources

1. **Women tech groups**, to advocate for and advance the status of women in the industry.

These groups became more visible around the mid-2000s.

2. **Media and press**, using WiT in news articles to describe the state of the tech industry and critique the lack of diversity.

Popular press articles using the label 'women in tech' were common from late 2000s (e.g. Forbes, The New York Times).

3. **Government and industry reports** pointing out the problem.

UK's 'The Equality Strategy - Building a Fairer Britain' report detailed the gender pay gap between 'women and men in science, engineering and technology' from 2010 ([Revenue & Customs, 2010](#));

UN's Gender, Science and Technology report ([United Nations, 2010](#)) launched in September 2010, setting out the role of the (then new) Commission on the Status of Women (CSW) for 2010-2014.

You're viewed as a 'woman in tech'[...] you constantly have a target on your back and have to prove you are more than the label.

f, software engineer for 15 years, UK

The straitjacket of the WiT label as a status characteristic

In a study in the United States about women's disadvantage in the workplace, Ridgeway and Correll analyse *motherhood* as a 'status characteristic' to underscore the perceived conflicts between the cultural definitions of the good mother and the 'ideal worker'.

The effect is to '*make motherhood seem more directly relevant to workplace performance [...] form[ing] an element in the cultural stereotypes of the people delineated by the social distinction (e.g., whites, nonwhites; men, women; mothers, non-mothers)*'

(Ridgeway & Correll, 2004, p. 683-84).

The WiT label is an equivalent status characteristic - a widely-shared (global) **cultural marker** that ascribes a different status and set of competencies that is entirely based on gender - **a straitjacket:**

- Attitudes and behaviours formed around the WiT label
- Creating the perception of 'in' and 'out' groups.

Profiling the WiT label

Source: interview data

in high status roles

in low status roles



definite characteristic

maybe a characteristic

lowest characteristic

behavioral or gendered

Profiling the MiT label

Source: interview data

in high status roles

in low status roles

specialist enterprise design
corporate strategy operations



definite characteristic

maybe a characteristic

lowest characteristic

behavioral or gendered

THREE IMPORTANT INSIGHTS ABOUT WIT LABEL BIAS

Universal recognition of the **status characteristic** in the use of the WiT label, which formed different expectations about women's and men's professional situation.

Specifically, the WiT label is likely to create universal disadvantages for women compared with men. There is good evidence to support this proposition in regard to the priming of gender stereotypes in ICT and STEM at a global level.

Status biases defined how the WiT label will shape expectations of other workers even if it is not relevant to the professional role or responsibilities at hand.

For instance, bias in the relational worth attached to the perceived 'commitment' of men in STEM careers compared to women in the same role.

The **weighting of professional competencies** were indicative of performance expectations in response to the WiT label.

Illustrative of how performance expectations for a woman at the upper levels of an organisation will be affected by gender bias – the ways in which evaluations discriminate against her in relation to both her low status as a woman and her perceived competence compared with that of men.

‘Dys- appearance’

To describe the tendency of gender to remain a constant tension/discord/(often) issue in the ‘background’ of tech work and organisations, where specific professional experiences cause it to emerge problematically into the direct consciousness of women and men IT professionals.

Over time, I’ve come to think of such attention to gender in tech with the Greek prefix ‘dys’ (as in dysfunctional). To suggest that when gender ‘dys-appears’, we heighten this emphasis and establish new boundaries e.g. ‘women’.

Women and men participants consistently expressed concern about the contradictory approaches to professional-identity that were not reconcilable in either professional or social settings.

And the moves to equality and efforts around diversity (mostly through HR), and the complexity and heritage of the WiT label does **not** allow either women or men to alleviate the tension around gender.

We should emphasise the change in the culture, environment and language of 'work' and 'being at work'.

- Shared open work-spaces have ambiguous implications for **worker identity and expression**;
- **Technology** has a role to play – in the ways professionals share work tasks remotely and allow the workplace to extend beyond a physical location;
- Fixing individuals into **categories** of types of worker e.g. 'coder', 'programmer', 'engineer'... through processes of interaction, communication circulation and, often, play create heightened tensions and accentuate gendered differentiation.

The style of tech work challenges fixed spaces and times of work with utopian and dystopian engagement possibilities especially where it is easy to create 'in' and 'out' groups.

Taking up space as a “WiT”

In our office, there’s a “WOMEN’S restroom” sign on a cord that you flip to go over the Men’s when you need to go to the bathroom. I applaud how far we’ve come that we get access to our own potty, but there’s still a long way to go if we can’t sh*t without flipping a sign on the door.

f, software engineer and games designer, US.

Observation of spatial exclusion

- First, how organisations created physical spaces for co-working or ‘areas of innovation’. These increased the sense of ‘dys-appearing’ gender, where they produced a (mostly) unwanted consciousness of dominant masculine culture and a desire to withdraw from these highly visible workspaces [a much higher proportion of women were remote working].

I avoid the co-working spaces; I don't get the humour and I want to keep a professional image [at work].

f, working in CIS, UK.

Observation of spatial exclusion cont.

- The physical space of the office and time are cemented within 'gender narratives' e.g. role / career separation and different treatment of women and men professionals in the same organisation. For example, while over 90% of the participants made use of flexible working a strong sense of presence is required by the industry for women and men.

I'd like to do more remote working than I currently do, but I find that you're treated differently if you work from home too much.

m, software manager, US

Finding work in tech – professional boundaries

- Tech doesn't just have glass ceilings; there's glass doors, walls and floors [...] and then tripwire, lots of tripwires.

f, software developer, US.

- it's very common to be invited for 'interview' but it's cocktails and dinner. I had to learn that one the hard way a couple times. Maybe it's just a tech-culture thing.

f, software manager and consultant, UK.

After over a decade of talking about labels and context, I have come to recognise the behaviour of women shaping and negotiating their professional identity, and the many complexities behind it, as a form of ‘**identity work**’.

Identity work is not unique to the tech sector – though it is distinct for other reasons concerning divisions between types of work, roles and responsibilities, valued and devalued work, and gender-segregated employment patterns.

- Robin Leidner’s study of the **service industry** (serving hamburgers) and insurance selling reinforces the cultural valuation of the different identity work ‘considered appropriate to each gender’ in each setting.
- Janine Swail and Susan Marlow’s work reveals tensions with the feminine identities of ‘wife’ and ‘mother’ that prompt women ‘to undertake specific forms of identity work to bridge the gap between femininity, legitimacy and **entrepreneurship**.’
- Rydzik and Ellis-Vowles, writing about the **brewing industry**, note how women align themselves with the masculine brewster identity – flexing biceps and satirising strength – to enable a shared sense of belonging and recognition for overall competency in the job.

Identity work

From this research, there are two equivalent forms of identity work:

- **First, work to emphasise more typically masculine qualities in order to avoid conflict or differential treatment.**

‘so you are one of the bros’

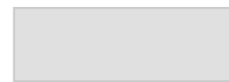
- **Second, work to highlight and align with the characteristics associated with the WiT label in order to – as one participant from Beijing noted – ‘feel positive with your “sisters”’.**

Ideal successful candidate type

Successful candidate. Job advertisements. UK. US. East Asia.

Source: focus groups (n=76)

HIGHLY MOTIVATED, A LEADER WHO CAN DELIVER RESULTS, A PASSION FOR WRITING CODE AND LEARNING, *STRONG ACUMEN AND INTEGRITY*, *STRONG COMMITMENT TO WORK ETHIC*, EXPERT LEVEL IT SKILLS, *EMBRACES CHANGE*, COMPUTING AND BUSINESS, *DISCRETION*, IMPECCABLE ATTENTION TO DETAIL, ABILITY TO TRAVEL, *PRIORITISE CAREER GROWTH*, *CAREER DRIVEN*, PROVEN RESULTS, *DEDICATED APPROACH*, LEADERSHIP, *CREATIVE*, FAST-PACED, FLEXIBILITY AND INITIATIVE ARE AN ABSOLUTE MUST, *TAKES CHALLENGES AND RISKS*, ENTREPRENEUR, AGILE LEARNING, *GREAT WORKING STYLE*, SOLVE BOTTLENECKS, *STRONG SENSE OF ACCOUNTABILITY*, PRODUCTIVE CITIZEN, *ADAPTABLE*.



SKILLS
& KNOWLEDGE



RESPONSIBILITIES



JOB ROLE



BEHAVIORAL

extracts from data

'graduate well educated male'; 'he has no family or dependents'; 'he will be highly networked'; 'he has experienced life a bit'; 'he will be mid-30s'; 'when I am recruiting it is from the Ivy-League, and Oxbridge'; 'the best candidates come from the universities of Tsinghua and Peking'.

[note, disability absent]

Focus-groups recruitment advertisement exercise - revealed the structural inequality inherent in formalising job roles based on an ideal worker type:

- **Occupational segregation** was both explicit (e.g. 'flexible working' was stated to be more suited to 'women's skills') and implicit (images portraying men in 'action' roles, compared with women who were 'passive' or 'being instructed').
- Women typically aligned her ideal job alongside other relational roles – formed narratives around her 'emotional labour'.
- Assumed practices of exclusion challenge the ideals of equal opportunities available to all tech workers;
- Different areas of expertise makes it more 'difficult' for women to match their skills to new opportunities;
- Reward systems favour individuals who can juggle multiple roles and routinely connect across work and social activities.

HR RECRUITMENT FOCUSES TOO MUCH ON 'GENDER GOAL SETTING'

Enabling inclusivity through recruitment faces three crucial issues:

the **design** of the recruitment arrangements;

the distribution of the **competences** and responsibilities across multiple actors;

And the capacity of each organisation to **adopt** appropriate change management strategies to combine emergent tech resources into capabilities.

Ultimately the interrelationships between each of the above hinges around **trustworthiness**, which is currently *not* given adequate attention at policy or organisation levels.

IDENTIFYING “PROBLEMS” OUT OF WIT RESEARCH

Women-quotas have proven useful, but risk negative reaction amongst other workers, potentially undermine the reputation of the organisation and do little to encourage inclusivity.

Physical **office structures** disrupt staff interactions and impede inclusivity. Risk of being ‘outliers’ e.g. staff viewed as part of CIS operations when their role is very different.

Short-term contracts and precarious labour threaten **staff retention and cause conflict** (especially in large organisations such as HE).

Overall lack of trust by tech workers in organisations to be treated equally. Organisations are struggling with their relationship with their workforce.

Advertising as ‘women in tech’ events/communities and expecting women *and* men to participate:

“Until I met you, I didn’t think this kind of event was for me” (m. software engineer, Cabinet Office, UK).

Modifying web-presence with women/“ethnic” images.

Stating on job adverts as an ‘equal opportunities employer’, when **reputation** gives a counter message.

Having a ‘gender policy’, but failing to recognise ‘inclusivity’ as part of a diversity agenda. This perpetuates **the myth of the gendered workforce**.

FINDING SOLUTIONS - ENABLING INCLUSIVITY

Make visible the clear career pathway and progression framework open to all and takes into account multi-level skills and potential for training.

Move away from solely gendered interventions and enable inclusivity through all hierarchies e.g. management, types of investment/funding to sustain specialist groups.

Find out about the different types of RSE workplace environments and cultures. This requires a dynamic approach to understand professional identities and interventions.

Increase the range of RSE working opportunities and retain individuals who want to work remotely.

Acknowledge specialist groups and emerging communities.

Provide training on unconscious bias at all levels of seniority.

Include minority groups at all levels of policy change and recruitment

Invest in clear step-change conditions e.g. reverse mentoring, hiring with second proposed position (to be filled by a candidate from an under-represented group with related expertise).

FUTURE DIRECTIONS...

To allow the voices of the women and men tech professionals to resist/embrace/speak about the bias/prejudice/message of 'empowerment' of the 'Women in Tech' doctrine. This includes their experiences of formal policy requirements that mandate '**appropriate support for women**' working in the tech industry.

To question the nature and purpose of gender policy in this area, and the likely effect on other specialist tech communities who face similar challenges - RSE and HPC.

To move away from the lack of understanding about "the problem" and to find alternatives for promoting inclusivity within specialist tech communities that would feed into the broader tech industry.

To consider whether the implementation of any inclusivity proposal represents 'good policy' and how this is determined by leadership and organisation functions.

For example, the impact of where specialist tech workers 'sit' within an organisation. Universities house RSE's both in and outside CIS, faculty departments and amongst other professional support staff.

Not to lose sight of the core problems of the WiT label - danger of aligning with narratives about sexism and misogyny e.g. #MeToo and #EverydaySexism.

end.