

# **‘What’s the Problem? Gendered and Gendering Cultures in Science, Engineering & Technology (SET)’**

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## Introduction

- 20 years - numerous UK initiatives to redress under-representation of women in SET
- Impact limited
- Modest increases - women studying SET – no equivalent increase in SET professionals
- Recent research moved away from concentrating on increasing the supply of women to impact of gendered institutional structures, systems and cultures

### Aims & objectives

- Report commissioned by UKRC to:
  - Analyse existing evidence on SET cultures and their impact on the exclusion & under-achievement of women
- Objectives – to review:
  - Cultural indicators – styles, norms, values
  - Elements unique to individual SET occupations
  - Elements similar across SET sectors
  - Barriers to access, acceptance & progress of women
  - Effects of favouring masculine values & attitudes
  - Gender stereotypes

### Single Gendered Cultures

➤ Cultural norms can make it difficult for women, and men, to take up formal opportunities such as flexible working

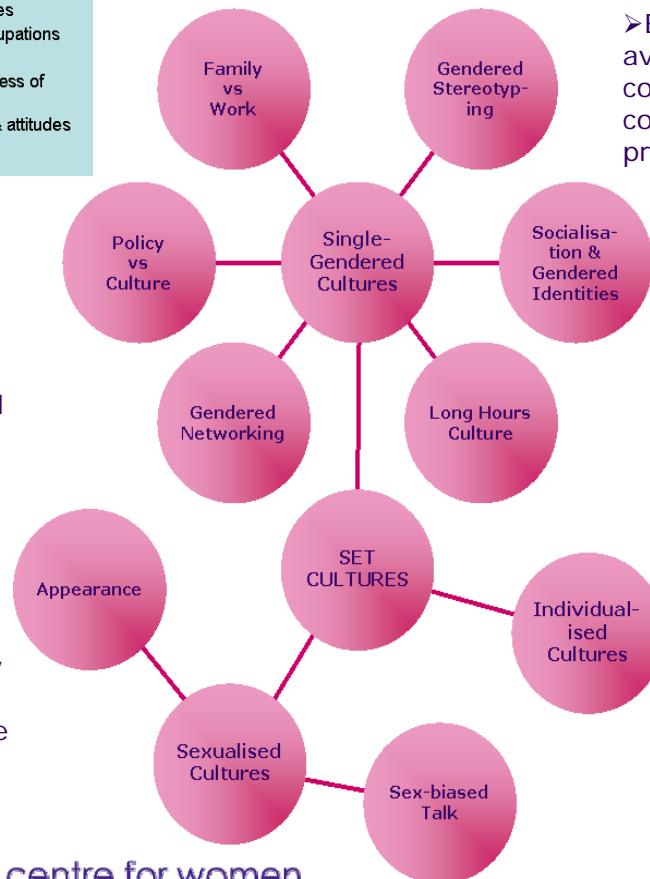
➤ Expectation of total availability, anything less considered lack of commitment to career, profession & organisation

### Recommendations

- For cultural change:
  - Challenge perceived duality
  - Embed work-life balance
  - Economic benefits of employee well-being
- For future research:
  - Women & diversity
  - Women & networking
  - SET professions, disciplines & sectors
  - Men and masculinities
  - Develop a more sophisticated understanding of gender

### Sexualised Cultures

- Women perceived as women first, SET professionals second
- Sexualisation displayed through language & humour
- Undermines women's professional status
- Women manage their appearance
- Women simultaneously invisible (as successful professionals) and visible (in minority)



➤ Flexible working opportunities described as lacking, low status & have negative career consequences

➤ Assumed association between masculinity & technology means women can be sidelined to 'softer' fields

➤ Assimilation into occupational cultures can lead women to deny importance of gender and reinforce existing hegemonic masculine norms

➤ Networking identified as important for success, but women often excluded

### Individualised Cultures

➤ SET organisations – increasingly competitive & individualised

➤ Arguments for increasing women often based solely on business needs with less recognition of need for inclusive cultures 'Women are perhaps the last resort'

➤ Live to work norms – 'only the fittest survive'

- Paper investigates subjective symbolic association between masculinities and femininities and cultural norms prevalent in SET organisations:
  - inconsistent relationship between policy and culture
  - long-hours culture
  - conflict between family and work
  - gender stereotyping
  - socialisation and identity
  - networking and the career ladder

## UK Women and SET

- 33% of SET students women (average all subjects 57%)
- Only 14% of all women students in HE studying SET (37% of men students)
- Vary widely by discipline:
  - women 71% medical technology students - only 9% mechanical engineering
- Women only 13% of SET professionals (49% all occupations)

## Images of SET

- Historically – engineering = tough, heavy, dirty, associated with machinery, extremely tough masculinity'
- Perception engineering careers unsuitable for women - cyclical process, reinforcing masculinity
- Technical ability deeply entrenched in traditional masculine identity, in strict opposition to traditional femininity
- Dogma of 'masculine' science - stresses rationality, objectivity & neutrality, '*hard, intellect-based, complex, concerned with things rather than people*'
- '*Science is power so science is defined as masculine*'

## Exceptions?

- Feminised subsections
  - e.g. biology or pharmacy
  
- Women's 'resegregation'
  - Confined to 'female ghettos'
  - Lower status & visibility positions, fewer opportunities for promotion, lower pay

## Defining Culture

- *'The pattern of beliefs, values and learned ways of coping with experience that have developed [and continue to develop] during the course of an organisation's history, and which tend to be manifested in its material arrangements and in the behaviour of its members' (Brown, 1995).*

## Single Gendered Occupational Cultures

- Useful concept
- *‘Women are not considered suitable for jobs traditionally filled by men, not because they are technically unable to perform these jobs, but because women do not carry the symbols, do not correspond to the hero images, do not participate in the rituals or foster the values dominant in the men’s culture’ (Hofstede, 2003: 16).*

## Organisational Policies v Organisational Cultures

- Formal, strongly stated commitment v discrimination manifested informally
- Public relations exercise? Liberal approach?
- Work-life balance policies v workplace cultures
  - Career progression affected
  - Options not always appropriate
- Pervasive invisible hegemonic culture dominates and weakens organisational initiatives to address women's unequal footing.

## Long Hours Culture

- Presenteeism/long hours positively interpreted (weekends & evenings)
- Project-based working, Task-oriented - time-crucial
- ‘Normal’ hours: *‘sense that you are not pulling your weight, that others are suffering for you, and that you are missing out on perhaps the most exciting and visible parts’*
- Women (family involvements) systematically disadvantaged

## Family Versus Work

- **Maternity leave/return to work particularly problematic in SET**
- **Rapid change – short career breaks risky?**
- **Part-time contracts = demotion of position?**
  
- **Childcare responsibilities undermine career commitment?**
  - **non-mothers = ‘risk’ - mothers = ‘problem’**
  
- **Family = ‘distraction’?**
- **Work-life balance/flexible working policies = recruitment tool, forgotten in times of recession**
  
- **Needs to be addressed at a *cultural* level within SET**

## Gender Stereotyping

- **Women = unsuitable for real, purely technical careers**
- **Better communicators → ‘soft’ side of SET professions (sales, personnel, desk-based work)**
- **SET Women reluctant to openly question stereotypes?**
  
- **Positive note:**
  - **Successful SET women - great sense of pride & status making it in a ‘man’s world’ - pleasurable & empowering experience**
  - ***Caveat: context - relative status & value attached to ‘men’s work’ v ‘women’s work!’***

## Occupational Socialisation and Gender Identity

- 'Becoming & belonging' as engineer
- Assimilation survival strategies = adapting to dominant masculine cultures
- Problems individualised & attributed to personal failings
  
- 'Professionalisation' - internalising values, norms & symbols
- Women can learn masculine rules & behaviours
- Hope for long-term change?
  
- Women = 'honorary men' or 'flawed women'

- **Cultural adaptation includes:**
  - accepting sexist behaviour
  - working hard to show solidarity with men
  - accepting masculine cultures uncritically
  - holding traditionally stereotypical views of women
  - adopting an 'anti-woman' approach?
  
- **'Critical mass' ?**
- When women achieve positions of formal power, have become '*enculturated*'.

## Gendered Networking & Career Ladder

- **Informal networks - masculine activities (sport, drinking)**
- **'Old boys networks' - self-promotion, 'game-playing', unwritten rules**
- **Women excluded, time factor, unattractive, uncomfortable - competitive, aggressive, less than honest, discouraging, discriminatory - 'schmoozing' & 'posturing'.**
  
- **Social connections crucial role in development of 'insider status' for 'legitimation' in SET community**
- **Networking = securing jobs, especially managerial level**

## Conclusion and perspectives

- Some positive changes in some SET workplace cultures
  - Encouraging gender inclusive dynamics
  - Mixed-sex socialising
  - Avoidance or challenging offensive jokes & language

## Overriding Conclusion

Career paths for SET women continue to be problematic

- Established relationship SET & traditional notions of masculinity highlights deep contradictions for SET women
- Coping mechanisms tend to be individualistic strategies
- Management of gender seen to lie in women's own hands
- Extent to which cultures can be consciously manipulated is contested ground, but without fundamental change SET professions seem certain to remain problematic arenas for women