Gendered Meanings of Commitment from High Technology Engineering Managers in the United Kingdom and Sweden

Val Singh and Susan Vinnicombe*

This article considers why women managers are often perceived to be ‘less committed’ at work than men, through an exploration of male and female managers’ meanings of ‘commitment’, to see whether their meanings are shared. Despite a large body of literature on the concept of commitment, managers’ own meanings of commitment have not been reported. In general, engineers reported that they used the term ‘committed’ without defining what it meant. Their meanings were a broad composite of organizational and career commitment, focused on very strong affective commitment with almost no emphasis on continuance commitment, in contrast to the traditional (1979) definitions of commitment (Mowday et al. 1979). Results from this interview study of engineering managers and senior technologists (20 males, 17 females, 17 British, and 20 Swedish graduate engineers, from vice-president to senior technologist) show that there are differences in male and female engineers’ unprompted meanings of commitment at work, as well as differences in meaning between the three levels of management sampled. Females responded more often with less visible ‘commitment’ meanings such as involvement, being people-concerned, and availability. More males (and top managers) used the term commitment to mean task delivery, being proactive, being innovative, adding value, and being ready for challenge. The gender differences identified in reported meanings could impact on the assessment of women’s commitment, when evaluated for promotion, career development and professional chartered status by the mostly male engineering managers.

Introduction

British women in engineering management say that they are as committed as their male peers (Devine 1992; Evetts 1993, 1994), while senior male managers are reported as saying that women managers are not committed enough for promotion (Tomlinson et al. 1997; Wajcman 1996). Similar comments are frequently reported in the national press. Although management researchers traditionally conceptualize ‘commitment’ as continuance commitment (desire to remain in an organization) and affective commitment (loyalty to and identification with an organization, and putting effort in on its behalf) (Mowday et al. 1979), managers tend to refer to commitment in a more general way, within a work context. It could be that ‘females’ lack of commitment’ is being used by males as a rhetoric, through which, according to Parkin (1975), ‘people have license to explain and evaluate the causes and consequences of social relations’, hence, the lack of women’s advancement to top management, especially in engineering. Rhetoric allows a justification to be made for power and exchange relationships, hiding possible discrimination underneath (Gowler and Legge 1981).

The purpose of this article is to consider whether female and male engineering managers in a male-dominated industry have a shared understanding of the meaning of commitment at work, and to what extent managerial level and organizational culture influence the meaning. Meaning refers to ‘the cognitive schema that map our experience of the world, identify its constituents and relevances, and how we are to know and understand them’ (Ranson et al. 1980, p. 5). They say that schemas tend to be taken for granted within organizational routines, becoming part of the underlying structure. As commitment is assessed and rewarded by managers (and in engineering, most managers are male), it is important that any gender difference in meanings of commitment are clarified, to avoid structural bias. Figure 1 maps out the commitment assessment process.
Perceptions of commitment may be connected to issues around women’s roles and conflict between work and family commitments. For example, Rubin (1997) found that assessment of commitment in selection interviews was gendered, with female characteristics being seen as a problem by recruiters. Tomlinson et al. (1997) reported that women managers’ promotion opportunities in the UK retail trade were being limited by perceptions of their lack of commitment and ambition. In Sweden, a recent research report from a Ministry of Health and Social Affairs committee (Wahl 1995) identified male managers’ perceptions of women as managers, based on ideas of women rather than on real experience of female managers, as the key barrier for aspiring and competent women. According to Wahl (ibid., p. 100), ‘The male top executives refer to children and the family as a problem of decisive importance — for women.’ As Sweden provides a contrast to the United Kingdom in terms of certain important work conditions affecting women, such as the male–female pay gap, organizational flexibility, publicly funded childcare, and parental benefits (European Commission 1997), it was decided to select half the matched male/female pairs of engineers from major Swedish and UK companies. The aerospace industry was chosen for its leading position at the forefront of technology, with regular graduate intakes.

Semi-structured interviews were held with 37 engineering managers and senior technologists. They were asked in the first section, without prompting or prior discussion, to describe what commitment meant to them in a work context. It was important to capture their initial meanings, by asking them to give their own definitions and to describe a senior person whom they perceived to be highly committed, i.e. a role model of commitment, explaining how they recognized the evidence of commitment. In a later stage of the project, the same interviewees (who were now sensitized to the subject) were asked to rate the importance of all the meanings elicited from the first part of the interviews to themselves, as well as to rate the importance of these meanings to their organization, so that the perceived shared meanings could be identified. These could then be compared with top managers’ ratings for a view of the kind of commitment desired by senior management, to see to what extent it was shared by males and females. Reports from the second part of the interview add depth to these unprompted responses, providing more considered views about the meaning of commitment. It is hoped that the results of this study will lead to a better understanding of why women’s commitment continues to be challenged, while men’s commitment is still taken for granted. This article reports the unprompted meanings elicited in the first part of the interview.

**The traditional conceptualization of commitment**

To set the meaning of ‘commitment’ to men and women managers in its theoretical
context, this article now considers how commitment has been defined in the past, frequently by management researchers, seldom by employees. The literature on perceptions of commitment is considered, as this study is particularly concerned with the perceived commitment of women. We also review how commitment has been measured, and examine the literature for any reported gender differences.

The literature breaks commitment into organizational, career, profession and work commitments, among others, with a great deal of overlap (Morrow 1983, 1993), whereas managers in this study tended to use the word in a holistic sense. Traditionally, commitment is seen by organizations as a desirable feature. Studies suggest that ‘committed workers contribute to the organization in more positive ways than less committed workers’ (Aven et al. 1993, p. 63). Commitment is most commonly measured using a self-report instrument, the Organizational Commitment Questionnaire (OCQ), based on the conceptualization of commitment by Mowday et al. (1979). They identified three sub-concepts, forming two components of commitment:

1. The employee’s desire to remain in an organization (‘continuance commitment’);
2. The willingness to exert effort on its behalf (‘affective’ or ‘attitudinal’ commitment);
3. Belief in, and acceptance of the values and goals of the organization (also ‘affective/attitudinal’ commitment).

Meyer et al. (1993) added a third component of commitment, obligation or ‘normative commitment’.

Cook and Wall (1980) adapted the OCQ for UK use, resulting in the British Organisational Commitment Scale (BOCS), with three items each for the sub-components of commitment: involvement, identification and loyalty. This article will show that interviews with both men and women engineering managers revealed understandings of the term ‘commitment’, which would not be satisfactorily addressed by the questions asked in the OCQ and BOCS. Peccei and Guest (1993) comment on the emphasis in the OCQ and BOCS given to ‘desire to stay’ and ‘pride’ in the organization. The questions are broad and arguably intended for general use rather than for high-level employees. These instruments may be measuring only particular facets of commitment, which are then aggregated. It is important for managers appraising commitment to understand exactly what kind of commitment is being addressed by the measures, which were designed when there were stronger concerns about turnover and loyalty.

Popular definitions of commitment, especially those of Mowday et al. (1979), followed by Meyer et al. (1993), seem to have been taken for granted by researchers for many years. Reichers (1985) commented that the employee’s own experience of ‘being committed’ had been neglected. Randall et al. (1990) sought to explore in interviews with 16 randomly selected manufacturing employees how they expressed commitment themselves, in their behaviours and actions. From a range of 23 behaviours given, a list of 15 frequently cited and relatively independent items was drawn up, and included in a survey across the company. The survey respondents (81% male, with 4% top and 8% middle managers) emphasized their concern for quality, the willingness to sacrifice personal concerns for the organization, willingness to share information, and presence in the workplace. These important features would be lost when commitment is measured using the OCQ, demonstrating that additional approaches to investigating commitment are needed. Randall et al. (1990) recommended more qualitative research in the area of conceptualization of organizational commitment, particularly as the ‘presence in the workplace’ variables (concerning tardiness and absenteeism), such an integral part of the OCQ and the organizational commitment literature, were not significantly correlated with OCQ-measured commitment of the employees in Randall’s study. This study seeks to provide evidence for further theoretical development by examining what commitment means to matched male and female managers in leading UK and Swedish engineering companies. It examines the relationships of gender and managerial level to the process of commitment appraisal where perceptions of commitment are the evidence for managers.

People who are perceived to be more affectively committed (willing to work hard, and to internalize the organizational goals) are more likely to be seen to have high potential, according to research by Shore et al. (1995). They are more likely to be given career development rewards (Allen et al. 1994) than those with perceived high continuance commitment. The latter are seen to want to stay in the organization because of their own investment in ‘side-bets’ such as pension, accrued holidays and status, and they also may have no other options of employment. The type of commitment (continuance, affective or normative) is significant when talking of
commitment as an organizationally desirable attribute in managers.

Commitment and gender differences

Previous research reports almost no difference in male and female managers’ levels of commitment. Mathieu and Zajac (1990) undertook a meta-analysis of earlier organizational commitment research, including antecedents and correlates of commitment. They recommended further research into moderators such as age, job satisfaction, role states, leader behaviours and organizational characteristics.

A later meta-analysis by Aven et al. (1993) focused just on gender and attitudinal commitment, ignoring continuance commitment, and using data from 27 samples with over 14,000 subjects. They evaluated two explanatory models. One was a gender model of commitment, where men and women were seen to have different commitments based on their social roles, women deriving their identity more from their family than their work role. The other was a job model, which held that men and women have similar commitment, but that the job role experience might be different for men and women. Results showed no significant evidence for either model. Attitudinal (affective) commitment was not related to gender, and job type did not moderate the relationship. The key finding was that gender had virtually no impact on an individual’s belief in the organizational goals, nor on the willingness to exert considerable effort on behalf of the organization.

Professional commitment in UK and Swedish engineering

Engineering is a professional occupation regulated by national professional institutions, but unlike accounting or law firms, where professional employees have an opportunity for partnership and independence, engineers in high technology engineering are usually employed and remain employees, with commitment to their profession as well as to their employer. Kerr et al. (1977) gave the following dimensions of professional commitment: ‘identification with the profession and fellow professionals, ethics, collegial maintenance of standards, commitment to work and the profession, autonomy and expertise’. Commitment to the profession has been identified as having local and cosmopolitan elements. Locally, in addition to loyalty to the employer, it encompasses commitment to gaining and maintaining highly specialized skills, while the cosmopolitan element indicates an external referent group (Morrow 1993). Morrow describes professionalism as ‘the extent to which an individual subscribes to ideal tenets of a profession’ (p. 37), but does not see this as necessarily conflicting with organizational commitment.

Graduate engineers in the aerospace industry represent the best of the technical talent available, and they further their careers with on-the-job development, learning by job challenge, and external secondments as well as by technical and management courses, building up competence and experience portfolios. The product development cycle is very long, the products are extremely complex and leading edge research is undertaken for replacement of the products several decades ahead. As the products have to be certified for commercial use, quality issues are paramount, but as the market for the products is global, there has to be awareness of customer needs and future business trends as well as excellence in engineering and research. Considerable investment has been made by these companies to make the most of their human capital, and they demand competence and commitment in return.

Although it is of relevance to women in managerial and technical careers generally, the assessment of commitment is currently of particular importance in high technology engineering. The UK Engineering Council has a Royal Charter to maintain a register of professional engineers through the various engineering institutions, and to ensure that professional standards of competence are developed and met. In 1995, it proposed that chartering of graduate engineers (membership of a professional engineering institution, which is granted according to a formal code of practice and quality standards) should include an evaluation of their commitment by senior peers, to be instigated in 1999 (Engineering Council 1995, 1997/98). Individuals would have to provide evidence that they were demonstrating their commitment to maintaining professional competence through self-managed continued professional development (CPD), working within the professional codes, as well as supporting the development of others, for example through mentoring within their company. The engineering institutions, such as the Institution of Mechanical Engineers, have to work with employers to promote and facilitate CPD for professional engineers. Professional
registration is an integral part of career development for UK engineers, and many employers insist on chartered status as a prerequisite for making an employment offer.

Swedish engineering has a different scheme. The five-year ‘civil engineer’ masters degree from the prestigious technical universities provides automatic professional engineer status, giving the title Civ. Ing, equivalent to the UK C. Eng. (Note that ‘civil’ in this context means ‘non-military’, and includes all branches of engineering.) The Swedish Engineering Academy has a similar CPD scheme for engineers to commit to lifelong learning, assisted by the professional societies such as the Civilengenjörsför ening, while the employers should provide an environment which facilitates such learning (Ingenjörsvetenskapsakademien 1993).

While the UK Engineering Council has its guidelines for assessment of commitment of engineers, and while their meaning is more oriented to professional than general commitment, it is likely that some managers will use their own meaning of commitment when assessing subordinates, rather than referring to the professional meaning. If there are gendered meanings of commitment, this has implications for women engineers, who will usually be assessed by male managers, when their commitment is evaluated for chartered status or promotion. This could be another hidden barrier for women to break through, if they want to reach senior management.

Any evaluation of possible explanations (such as perceived lesser commitment) for the small numbers of women engineers reaching top positions has to take into account the fact that few women actually enter engineering careers. As the UK Prime Minister, Tony Blair, commented, ‘only a small proportion — 24% — of engineering graduates go into British industry on graduation. This is a huge waste of talent’ (Blair 1996). The figures for women are even lower — in some years (for example, 1991), less than 10% of UK female engineering graduates have gone into engineering jobs (HMSO 1994), and so the population available to rise to management level is still very small. The 1997 British Labour Force Survey (Sly et al. 1998) shows the total population of engineers and technologists in the professional occupations group as 580,000, of whom 26,000 are female (4.5%). Of UK engineering masters students graduating in 1994, 15% were women, across all branches of engineering (HESA 1995). Statistics Sweden (1995) report that 13% of mechanical engineering masters students graduating in 1995 were female, nearly doubling the 1985–6 figure of 7%.

Commitment in the 1990s

There have been significant changes in the nature of the commitment relationship in the last decade, as the economic downturn led to a long period of downsizing and restructuring. Holden (1996) reported that Swedish management culture was shifting from a ‘soft’ style to a harder approach following the global and local recession of the early 1990s. In the United Kingdom, there has been a shift of career management responsibility from organization to individual — the new psychological contract between employee and employer (Rousseau 1995). The employer–employee trust relationship has been threatened, as employers seek to retain the advantages of high commitment and high performance while withdrawing from some of their responsibilities to the employees (Guest 1998; Sparrow 1998). The UK and Swedish professional engineering bodies are dealing with this shift of responsibility for career development, previously carried by employers, by creating frameworks within which both engineers and employers can continue to provide professional engineering services through individual commitment to continued professional development.

Cultural and management style differences between the UK and Sweden

As the sample includes both UK and Swedish aerospace engineers, the issue of national cultural differences has to be considered. Culture, according to Hofstede (1993) is ‘the collective programming of the mind which distinguishes one group or category of people from another’. However, there is some argument for saying that in engineering, cross-cultural differences are not as important as in most other occupations. Gerpott et al. (1988) state that in ‘high tech’ companies such as those in aerospace, the sense of technological excellence overrides other considerations, engineers across national boundaries being more likely to share the culture of other engineers than fellow-countrymen. They say that: ‘R&D professionals may form a special occupational subculture across countries, because scientific methods and standards are generally valid independent of country boundaries.’

As the unit of analysis in this study is the individual’s meaning of commitment, the cross-cultural issues are not the main focus, but the UK and Swedish management styles
are more fully addressed in Singh and Vinnicombe (1999). Sagie and Elizur (1998) comment that although a concept (such as commitment) may have the same basic component structure across different national and organizational cultures, the balance and strength of the individual components would be likely to differ. In Hofstede’s classic study, Sweden ranked lowest of 39 countries, while the United Kingdom was near the top in 8th position on the masculinity/femininity dimension of management styles (Hofstede 1980/84). Feminine cultures tend to be process-oriented, with emphasis on interpersonal relationships, while masculine ones are more results-driven, concerned with power and control. Hofstede (1993) reminded researchers that culture may differ at the national and corporate levels, as well as by gender and occupation. This present study has tried to reduce such problems by selecting matched male and female engineers (where possible), and by staying within one industry.

The European Business Survey of SMEs (Crew Report 1996) shows that, other than in the public sector, Sweden had the second lowest number of women in management in Europe. Some 64% of Swedish companies had no women managers, compared to the United Kingdom which had the highest number of women in management in Europe. Only 37% of UK companies had no women managers. The EBS survey found these results surprising, given the ‘highest overall labour market participation of women and “enlightened” legislation’ of the Scandinavian countries.

Management levels and career stages in engineering

This study investigates meanings of engineers who already assess commitment, at top (i.e. directors and one level below, usually heads of engineering functions) and middle management levels, as well as a number of engineers at the transition point between senior technologist and manager. Dalton et al. (1977) identified four stages in engineers’ careers: Stage 1: Apprentice (characterized by helping, learning and dependency); Stage 2: Colleague (independent contributor); Stage 3: Mentor (assuming responsibility for others, training and interfacing with others); and Stage 4: Sponsor (shaping the direction of the organization, and exercising power). This study is concerned with those in Stages 2, 3 and 4, approximating junior, middle and top management levels. Top management includes directors and function heads, as they may play a strong role in determining the meaning of commitment for the organization, as custodians of the commitment cultural norms, while the middle managers in Stage 3 are responsible for much of the early-to-mid career evaluation of competence and commitment, resulting in career development opportunities for those in Stage 2, the independent contributors who are starting to supervise and act as project leaders.

Research methodology

The research approach and design

Given the difficulties of exploring meanings with engineers who are more used to dealing with numbers, plans and technical decisions, it was decided to use a qualitative, case study approach, following the ‘road map’ given by Eisenhardt (1989). The approach attempts to reveal engineers’ meanings of commitment by guided conversations with an informed researcher, but it is held that these semi-structured conversations and the subsequent analysis present only a perception of reality (Tsoukas 1989). The research design was broadly guided by two primary propositions, although this article focuses on the gender issues. First, that gender impacts the meaning of commitment to engineers; second, that managerial level impacts the meaning of commitment to engineers. It is also likely that there may be cultural differences in meanings. The flexible case study approach (Eisenhardt 1989) allowed for triangulation of the data, by multiple methods to strengthen the grounding of any emerging theory. As the analysis progressed, the researcher sought feedback from interviewees by questionnaires, as well as documents relating to appraisal and recruitment from the companies.

The three high technology organizations

Three organizations were selected in a leading high technology industry, where traditionally there were regular graduate intakes including women engineers, and high levels of professional participation in the international aerospace community. Efforts had been made over a number of years to increase the number of women engineers, and the recruitment brochures highlighted a friendly approach to women entrants. As these were large organizations, it could be argued that there would be opportunities for competent women engineers to advance their careers at a similar pace to their male peers.
Organization UK-A is British, employing around 40,000 people world-wide, with women engineers comprising 4–20% of staff across the various engineering departments in the United Kingdom. Historically, the company undertook responsibility for career development, and promotions tended to come from within. There was a restructuring of the management system in the early 1990s. The senior staff level included directors and function heads. Middle managers were provided with a choice of career progression through a three-level dual management/technical track, although managerial positions could only be achieved through a specific vacancy. Graduate engineers progressed through four levels as technologists before being considered for middle management/senior specialist positions. A staggered hours scheme was introduced, making it easier for working parents to share parenting duties. There were career break schemes, but women engineers reported that the norm for ambitious women was to keep the period of maternity leave as short as possible.

Organization SW-B was part of a larger and world-renowned Swedish company, with 2500 employees in the aerospace site visited, of whom 14% were women. The organization of the company is flow oriented, with a shallow management structure with only five levels from the vice-president of engineering down to project leader. There are several major international collaborative projects, offering excellent career development opportunities for those willing to accept the challenge. The company was making efforts to recruit more women engineers, and to develop those who had already joined them.

The third organization, SW-C, was also Swedish and had a similar number of employees to SW-B in the division which was visited. The parent company is one of the largest engineering organizations in the world, with a reputation for a caring management style. A quarter of the division’s employees were masters level graduates, and women made up 14% of the total workforce, but only 4% in engineering, despite considerable efforts to recruit more women engineers. Again, the company was much flatter than the UK organization, and a dual career track (management/technical specialist) system was in operation. Both of these Swedish companies offered flexible hours, and all parents of young children benefited from state-legislated generous maternity and paternity leave schemes, should they wish to avail themselves of such leave.

The matched pairs sample

Following a pilot study, which showed that the issue was of interest to engineers and their employers in both the United Kingdom and Sweden, senior contacts were approached in the three organizations by one of the female researchers (who was familiar with the industry in both countries) to identify matched pairs of male and female engineers across a range of management levels from directors to project leaders and technologists, who would be willing to take part in a study researching female and male engineers’ careers. Commitment was not specified at that stage. Potential interviewees were then approached by the contact and the researcher. Matching was on the basis of age, qualifications, similar type of department and job title, although it was sometimes not possible to obtain a close match on all the criteria in the smaller Swedish organizations (see Table 1). There were no Swedish women engineer directors, and the much flatter Swedish organizations meant that it was more difficult to allocate interviewees to a managerial category exactly equivalent to those more clearly defined in the UK organization. Therefore guidance was sought from the senior contacts, and from the interviewees themselves as to their managerial category for the purposes of this study. The youngest engineer was age 28, the oldest was 59, and

<table>
<thead>
<tr>
<th>Organizational level</th>
<th>UK-A</th>
<th>SW-B</th>
<th>SW-C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Directors/top managers</td>
<td>3 males</td>
<td>3 males</td>
<td>2 males,</td>
</tr>
<tr>
<td></td>
<td>3 females</td>
<td>1 female</td>
<td></td>
</tr>
<tr>
<td>Middle managers/senior professionals</td>
<td>3 males</td>
<td>3 males</td>
<td>2 males</td>
</tr>
<tr>
<td></td>
<td>4 females</td>
<td>3 females</td>
<td>2 females</td>
</tr>
<tr>
<td>Junior managers/senior technologists</td>
<td>2 males</td>
<td>1 male</td>
<td>1 male</td>
</tr>
<tr>
<td></td>
<td>2 females</td>
<td>1 female</td>
<td>1 female</td>
</tr>
</tbody>
</table>
job levels ranged from senior technologist to director. In the whole sample, 27 were married, and a further five lived with a partner. Of the nine UK women, five were married, compared with six out of eight Swedish women. Only a third of the UK women had children, compared to five of the eight Swedish women. Twelve of the 20 men had children.

The interviews
Semi-structured one-to-one interviews were conducted over a period of nine months in late 1996–97 on company premises in a private office during work time, typically lasting one to one and a half hours. Guided conversations helped the engineers to reveal their meanings of commitment at work, as they were asked to describe a senior manager whom they considered to be very committed, identifying the evidence of that commitment. Discussion followed of how the interviewees themselves demonstrated commitment and perceived it in others. Towards the end of the interview, the issue of gender and perceived commitment was raised, after rapport had been established. (The Appendix shows the interview schedule.) Some 35 full interviews were tape-recorded and transcribed. Two brief meetings were held over dinner with top Swedish managers and noted afterwards. All the Swedish engineers were fluent English-speakers, and the researcher was fluent in Swedish, having lived in Sweden with work experience as a translator. The interviews in Sweden were conducted in English, although where the questions were not clearly understood, clarification was given in Swedish, so that the researcher was sure that the engineer had understood the question. There is possible bias in that the word ‘commitment’ does not easily translate into one Swedish word. Dictionary definitions include Swedish words for undertaking (åtagande), involvement (engagemang), duty (förpliktelse), and dedication (hängivelse), which could cause bias in explanation of meanings, emphasising those components above other possibilities. However, engineers in the aerospace industry are used to working in English, which is used for management training as well as for technical reports, conference papers and joint projects. After checking this out in the pilot study, it was decided that interviews would be conducted in English. This had the advantage of allowing the concepts at first-level coding to emerge from the interviewees’ own English words, keeping closer to the data.

Data analysis
The responses from the first section of the interviews were content analysed for themes, which were then examined quantitatively for gender and managerial level trends in the responses, as reported in this article. Given that there are only 37 interviewees, it is not appropriate to check for statistical significance, but the data are of interest given the senior positions of many of the engineers, allowing insight into a somewhat shrouded process. Following the advice in Miles and Huberman (1994) and Lofland and Lofland (1995), the qualitative data were analysed using a categorization approach, facilitated by computer software (QSR NUD.IST 4 1996) to identify first-level categories and higher level constructs. Within-case and cross-case analyses were undertaken, so that patterns in the data could emerge, at the same time allowing the respondents’ words to add depth to understanding.

Results and discussion
Wide-ranging meanings of ‘commitment’
It should be noted that multiple meanings of commitment were given by individuals at the start of the interviews. The ‘describe a role model of commitment’ tool provided rich insight into what ‘commitment’ ideals were held in the companies. In UK-A, several of the senior engineers described the same director as a role model of commitment, identifying him even though this was not requested. One description of his kind of commitment is given below.

He is committed, my feeling about him is that he is genuinely thinking very hard about what could be best for UK-A all the time. His whole life is thinking about the company issues, what could be done, and putting in programmes to sort out this, that and the other. And he is somebody who uses a very diverse network that he inputs into company activities, and wants to be involved in company activities. You know, as an engineer, he needs to be involved in the business planning side and the strategy side, very much the big picture. And he’s spending a lot of time battling most of the time with the people who own those sorts of areas, who may think that, say, structural engineering isn’t your turf. And I don’t think that’s just megalomania on his part, I think it genuinely is that he thinks there’s an important contribution to be made, and he wants to make sure that it is put in there.
Having role models is important, as they set the standards, and provide inspiration to those below. Few engineers had experience of working with senior women engineers, but all knew of the senior-most women. One of the youngest female engineers said:

I think that you need to know, to have a role model, that it is an option [for women to succeed]. Just like there’s now a couple of UK-A directors, XX is one of the directors who are women, and it gives you a better feeling that it is possible. That is important.

Table 2 shows the most frequently given meanings, in total and by gender. There were a number of other responses (trust, enjoying work, being realistic, having a holistic view, being fair, control, identifying with the organization, wanting to stay in the organization, keeping technically updated, duty, having judgement, pride and loyalty), which were cited by less than one in five of the engineers.

Given the emphasis in previous research about continuance commitment, it is particularly interesting to note that only two younger engineers and one senior talked about wanting to stay in the organization.

It was difficult for many of the engineers initially to express what commitment was and specifically how they evaluated it. They simply had a feeling when commitment was there, and some found it easier to talk about how they identified when commitment was lacking.

So it’s a perception almost, I get a feeling from people as to whether or not I feel they are committed. (UK male director)

That is not easy. I mean, it is usually not one thing, more a combination. (Swedish female middle manager)

We use the words. We get into conversations as to whether so and so is committed or not, or how committed. (UK male senior manager)

You see whether they are bothered, whether they are just going through the motions. And I don’t know of any way really, of finding somebody, whether they are committed or not, without just observing and getting a very subjective view. (UK female middle manager)

The four most frequent responses

Figure 2 shows the four most common responses — task delivery, putting yourself out, involvement and quality. Two-thirds of the sample mentioned task delivery, and putting yourself out/doing extra effort, and so did most top engineering managers, in contrast to middle and junior managers. Overall, fewer females talked about task delivery.

All the Swedish males, three-quarters of Swedish females, and more than twice as many Swedes (85%) as Britons (41%) gave task delivery as their meaning. This seems to be a national rather than gender difference in meaning, confirming Lawrence and Spybey’s (1986) comments on Swedish managers’ emphasis on task delivery as a key part of organizational life.

If you take on a task with a goal, then you should work towards that goal … commitment means that you should, you have
to deliver to that date. (Swedish male chief engineer)

Commitment in the job is, you’ve got plans, you’ve got time-scales, you’ve got objectives. It’s being shown to actually want to achieve those, and to put the effort in, and to push people, to actually get those plans achieved on time, be it a test, or writing a report, whatever. It’s actually being very enthusiastic and wanting to actually improve things, and make steps forward for the company, both personally and in the technical sense as well. (UK female middle manager)

Three-quarters of the married interviewees talked about ‘putting yourself out’ as their meaning of commitment, compared to only one of the four single respondents. Top managers and UK women engineers responded more often with ‘putting yourself out’ than the rest of the sample. Indeed, they were willing to put themselves out to a considerable extent for the organization, particularly the senior women.

Now I have to live in a flat in xxtown, and I live in yycity, so I have to give up seeing my husband during the week most of the weeks, and that’s a compromise. (UK female director)

[From later on in an interview] I can, where the job demands it, rearrange my life to suit the particular commitment I am being asked to do, the particular work problem that needs to be done, the time-scales to meet, or a meeting which is not in my normal day, or go away on business — that does interfere with my commitments outside work, but on the whole, if I could possibly manage it, I would juggle everything around, and as long as I have a support service round me that can handle the fact that I have children, that I have more of a caring role than my husband who is also a UK-A employee, more of it falls to me to organize this, that and the other, to make sure that they are at the right place at the right time, school, playgroup, so I have to have that as well always at the back of my mind. Where I can, I do juggle my other commitments, but I can’t divorce the two. (UK female middle manager)

You have to be prepared to take more compromises with your personal life, than when as a junior or lower middle manager, when, if you’re in the right job, you can still keep a fairly regular life style with it. You certainly can’t now. You have to be committed to provide time when you’d rather not. (UK female director)

Junior managers and Swedish male engineers had the lowest response levels for ‘putting yourself out’, while Swedish women had a similar level to UK males. However, there

Figure 2: The most common meanings of commitment from 37 UK and Swedish engineering managers
were expectations from the UK males that committed managers would put themselves out both at work as good organizational citizens, and at home by sacrificing booked holidays and family Sundays for the company’s needs, for example:

But yes, it would include the hours that they work, it would include the range of activities that they are willing to contribute to. It would include their willingness to help others, that isn’t going to help their contractual reward. So they are willing to do things that aren’t the things against which their own job performance is measured. (UK male middle manager)

My view of commitment means that you should make yourself available ... within reason. I mean, I have cancelled holidays in the past to come into work, come in on Sundays. (UK male director with school-age children)

The other two most frequent words given as meanings were involvement and quality. Involvement is seen as meaning personal engagement with the goals of the organization to help achieve its objectives. Nearly three-quarters of females, and all the Swedish women, mentioned involvement but only half the males overall, and only a quarter of British males. Fewer senior managers gave involvement as the meaning of commitment yet nearly three-quarters of middle managers used the term. The Swedish companies, with their more inclusive and collective management style (Hofstede 1980/84) had made efforts to ensure that employees were regularly informed about corporate goals and how they could individually contribute to fulfilling them.

Commitment to me would be to assume the responsibility and take it to your heart, if you like. At the deeper level, you get personally involved in an issue. (Swedish male middle manager)

The more involvement I can feel about what I am doing, the stronger will that commitment be, because that is very important. (Swedish male middle manager)

Commitment means involved — a certain amount of dedication, loyalty, will and enthusiasm towards whatever it is an organization is trying to achieve. And implicit in that is a commitment to all aspects of that entity, to its people, particularly to its employees, to its products or services, to its customers, to its shareholders, to its suppliers, to its partners, its stakeholders, and also to its neighbours. (UK female director)

Three-quarters of the UK males gave quality as a meaning of commitment, compared to only a third of Swedish males, almost all the Swedish females, and just over half of UK females. Junior managers gave this response more than other levels, perhaps because they are more at the interface where quality, and its implications if lacking, are very visible.

I think you can tell someone is committed if they don’t just do the job that’s put in front of them — they take the effort to make sure that a quality job is done on behalf of [UK-A], whatever it takes, that’s my idea of commitment. (UK female senior technologist)

[Interviewer: Do you have a sort of personal stake in the quality?] ... Yes, I believe so, yes. I think it’s recognized that if you do a good piece of work, say it’s something new, that’s not been looked at before, people are looking for you to do the job and do it properly. So if the job’s successful, that does reflect on you. So, yes. (UK male senior technologist)

You do look for commitment. I think it is a commitment issue, because you’re more than a bright committed engineer, you’ve got to have this real integrity, and this conscience, that makes [the director] feel when you say you’ve done those calculations, he believes you’ve done them, with the knowledge of what the implications of getting it wrong. (UK female top manager)

Quality comes to mind first of all, I guess. I think engineers like to get things right. Engineering to me means making things happen, and making it happen, getting things right, winning, you know. [Interviewer: Is that getting things right at any cost?] No, absolutely not, no. Getting things right means getting something of the right value, the right quality and the right everything including cost. (UK female director)

Top managers’ meanings

It is useful to review meanings of commitment which senior managers mentioned more frequently than those below, namely being proactive, ready for challenge, creativity and innovation, and added value/business/customer awareness (see Figure 3). These are the attributes which top engineers are seeking from both men and women professionals in the increasingly global and competitive workplace. A top Swedish engineer said that
the kind of commitment most valued by the company was the ‘ability to collaborate, to be actively involved, to be creative, to learn, and to accept mistakes and learn from them’. Growing by actively seeking and overcoming challenge, being creative and having an awareness of customer needs is a means whereby both company and individual benefit. UK and Swedish males had high response levels for being proactive, compared to the females, but none the less, some females made strong points about this.

Commitment in the job is, you’ve got plans, you’ve got to achieve those, and to put the effort in, and to push people, to actually get those plans achieved on time ... it’s actually being very enthusiastic and wanting to actually improve things, and make steps forward for the company, both personally and in the technical sense as well. (UK female middle manager)

It’s a bit more than just plodding on and following instructions. It’s using the initiative, to really understand what the problem is, and coming out with a proper answer, rather than just one which fits the time-scale and one that is the way we did it before ... I think it’s an attitude to not just accept what has been done before, it’s an attitude to think, well, first of all, is this the right way to do it. The action part is usually being proactive. (UK male senior technologist)

There is almost a level of expectation of something above and beyond their job description. You know, you’ve got to take the job description, do something more, and then do even more than that to start being in the committed bracket. (UK male middle manager)

Swedish males had the most responses on challenge, followed by a third of the UK women and only one in ten of the Swedish women, yet half of the senior managers felt this was an important feature of commitment. Well over a third of junior managers also talked about this, even if they were somewhat unsure of how they would succeed.

I actively seek challenges, because that is the only way to learn. Sometimes it is a bit scary when you want to do this leader role in the group, but you have to do it to learn something new, so you throw yourself into that ... Perhaps sometimes you just try to see what happens, but as you get more experience, you get more and more comfortable with new challenges, you know what you can do. (Swedish male team leader)

It is taking the chance to have responsibility to do things, and also, the trust that my boss, my manager, that he has in me. That is the first thing I think of. (Swedish female middle manager)

Commitment is for everyone independently of what kind of level you are at, you

Figure 3: New challenges: meanings of commitment from 37 UK and Swedish engineering managers
need to challenge different things, it might be a technical issue, it might be an organizational question. (Swedish male middle manager)

Sometimes women were seen to be less committed to taking on challenge. However, some of the female managers who had reached middle management felt that these were unfounded assumptions made by men based on gender roles, and that women had to demonstrate their commitment to such opportunities forcefully.

Some women will say, I’ve reached a grade, I’m quite happy, I’ve got a lot of job satisfaction, and I’ve got a good family home, and I can cope with both, and that’s fine, I don’t want any more. But for those who want to do, they can. The company will do what it can for you. As they would do for a man. So it’s got to come from the individual, they’ve got to show that they want it. (UK female middle manager)

Well, I think that men get these opportunities more often, I really do. Because when you are a woman, you always have to show very clearly that you are interested. And then that is understood by the management, and then you have the same possibilities, I think. But you have got to show them. (Swedish female middle manager)

It will often be assumed that you’re more interested in your home life and that your job will come second, and that you won’t travel ... You have to forcibly say, I want to do this, and I would do that. You have to make it clear, or otherwise they’ll work on the assumption that you’re stuck where you are. (UK female middle manager)

While a quarter of male engineers talked about commitment meaning creativity and innovation, few women mentioned this without prompting. Nearly a third of UK engineers cited this meaning, compared with only a tenth of Swedes who spoke more of creative teamwork, as a resource for creation. A third of senior managers mentioned being creative and innovative, so this seems to be an important feature of commitment in their opinion.

To have the creativity and the courage of that creativity, you’ve got to have some commitment as to why you are doing it. If you haven’t got that, why bother? Don’t you think engineering is a bit like that as a profession? It’s complicated. There isn’t always a solution. There’s lots of laws and rules and things, but the sum total of it is not easily prescribed. And two, three engineers may have completely different ideas on how you do something. They may both be right, by the way. There are many solutions. But you have to have that commitment to actually go out and try it your way. (UK male senior manager)

Commitment may be related to a growing need for business awareness in high tech engineering. A third of senior managers saw this as important, compared with only a tenth of their subordinate managers and top technologists. Swedish engineers mentioned this more often than the Britons, but the most noticeable difference here is that so few women talked of this as part of commitment, only three mentioning it without prompting.

Commitment is very important, you know it has to do with customer satisfaction, so if you are late, and if your customer doesn’t get the job in the right time, so it is going to affect all the departments. (Swedish female project leader)

Commitment means you should deliver to that date, and have a result that fulfils the minimum standard of what it should be in that delivery. Even though you try to exceed that, in order to satisfy the customer. (Swedish male top manager)

It’s excellence in the context of doing what the customer wants, on time and at cost, so it’s not excellence for the sake of it, and it’s not excellence in a gold-plated sense. But it’s doing things properly and doing them right. (UK male senior manager)

Gender differences

Figure 4 shows the unprompted descriptors for ‘commitment’ elicited from male and female interviewees in the three companies. On some spokes, the marker patterns show company pairs of male and female responses, for example, on doing your best for the organization, putting yourself out, being proactive/using initiative, and finding solutions. The spoke for adding value/business awareness indicates that males in all three companies mentioned this meaning more than the females did. Several responses indicate a national pattern, although as the sample involves engineers in only three companies, the results have to be interpreted with caution, even though the companies might be seen as representing their countries in terms of their size and influence in the international engineering community. Note that responses from Swedes are furthest out on the spokes for task delivery and involvement, and from
the Britons on hours over the norm, and being professional, indicating possible national explanations. Other patterns are less clear, but in some cases, there are strong gender differences in two of the three companies, for example on quality, wanting to succeed, and wanting to contribute.

The spoke for commitment as hours over the norm indicates national differences, more of the UK males and females mentioning this than their Swedish counterparts. Two-thirds of UK engineers gave this meaning, compared to only 16% of the Swedish interviewees. About 40% of middle and lower managers also gave this response. The work patterns in the United Kingdom with the longest average working hours per week in Europe (Brewster et al. 1996) are likely to have influenced this response. Swedish engineers would largely be unwilling to work long hours over the normal working week other than when absolutely necessary, according to Lawrence and Spybey (1986), and the responses from the Swedish engineers indicated that the work environment was more family-friendly than in the United Kingdom. UK women with young children felt that commitment should not be measured by hours over the norm.

A lot of people look upon commitment as a willingness to put in all sorts of hours. I think there is an element of that, but that’s not the whole story. It’s dedication, if you’re only available during eight hours of the day, dedication during those eight hours is just as much commitment as someone who stays there till midnight. (UK female senior technologist)

I think that commitment is measured here by the hours you put in, at your desk, that sort of thing, and I don’t think that is a real measure of commitment, it is people’s perceptions of your commitment. It’s quite different. (UK female middle manager)

However, UK male managers were quite clear that there was an expectation of additional hours from the professional engineers. This contrasts with the females’ statements above.

I think, if there were engineering graduates who appeared not to be willing to work more than 37 hours a week, there wouldn’t be any doubt that they would be considered to have low commitment. Irrespective of whether they were in the bands that are
These unprompted results indicate that there are some differences between men and women engineers’ meanings of commitment. These become more significant when the responses from top, middle and junior management levels are reviewed. The senior managers’ responses are more closely aligned to those from the overall set of male engineers, than from the set of the female engineers. However, there were only half as many females as males in the top category, so that is likely to have influenced the alignment of the responses.

Responses given more overall by either male or female engineers (as shown in Table 2) could be sorted on two dimensions, visibility to managers, and individual–organizational.

Highly visible categories are labelled vanguard (active, forward-looking behaviours which are oriented towards self-development as well as the organization) and volunteer, while less visible categories are labelled virtuoso (enhancing the individual career) and virtuous (closer to the traditional affective meaning of commitment as identification with the organization) (see Figure 5). All of these meanings have been given as organizationally desirable features of commitment, but it appears that males and females (and senior, middle and junior managers) may have a different mix of commitment sub-concepts. Overall, women gave more volunteer and virtuous meanings, while top women gave vanguard and vanguard meanings as well. Women talked more about features of high organizational citizenship behaviour, defined as ‘constructive or co-operative gestures that are neither mandatory in-role behaviors, nor directly or contractually compensated by formal reward systems’ (Organ 1990). The male engineers’ more frequent vanguard responses relate to a more active meaning, more visible to managers, and enhancing personal career development through seeking challenging assignments, finding solutions, innovation, creativity and business awareness. These are important attributes for engineering organizations to encourage, to nurture innovation to develop new technologies and
products (Quinn 1985). The description of the UK-A director as a role model of commitment (given at the beginning of the Results section) fits this vanguard pattern.

**Conclusion**

This article set out to explore whether male and female engineering managers shared meanings of commitment, which might shed some light on why women managers are often perceived to be less committed at work. Two broad propositions guided the approach to design and analysis: first, that gender would impact on the meaning of commitment to managers, and second, that managerial level would also have an influence on those meanings in the context of organizational and national differences.

First, the literature on ‘commitment’ in a work context was reviewed to see how commitment had been defined in the past. This study provides empirical evidence from senior managers in leading companies that the ‘continuance’ element of commitment (desire to stay in the organization) may no longer be an important aspect of commitment for engineering management in today’s global workplace, with its changing psychological contracts. Different indicators of commitment may need to be constructed to capture whether engineers (and perhaps other professionals) are committed in a way which is meaningful to their managers today. Second, while the commitment literature shows no gender differences in levels of commitment, when measured by the traditional instruments designed in the 1970s in the USA, this study shows that there could well be gender differences if measured using the components of ‘commitment’ identified here in UK and Swedish industry.

Although it is recognized that the gender differences could be a result of women using different words than men would use to describe the same underlying meaning (Tannen 1986), there is some evidence in this matched pair study to support the proposition that there are gender differences in behavioural meanings of commitment. These meanings are often moderated by managerial level, particularly on some sub-sets of committed behaviours to do with challenge and being proactive, creativity and business awareness. Although top women had meanings similar to those of their male peers, top managers’ meanings were more similar to those of males overall. This would suggest that female middle managers and senior technologists may not share the mix of organizationally desirable meanings (those of top managers) of commitment to the same extent as their male colleagues. This may reflect the fact that the top women were very much pioneers, while those at middle and particularly junior management levels had a significantly larger female peer group with more family-oriented meanings of commitment, though they were still very much a minority in the engineering management system. Most of the younger women had or expected to have children as well as a career. Both propositions, that gender and managerial level impact on the meaning of commitment held by managers, are therefore supported, and contribute up-to-date empirical evidence to add to the theoretical debate about the conceptualization of commitment, and to the literature on commitment and gender.

The patterns for the ‘new challenges’ of commitment (shown in Figure 3) indicate that the UK women were sharing male meanings somewhat more than the Swedish women. The biggest national differences were on involvement and task delivery, where more than twice as many Swedish as UK engineers emphasized the latter meaning. In contrast to responses from the Swedish companies, hours over the norm was a key differentiating feature of commitment in the UK organization for both genders, although more so for women. Women with family responsibilities may have problems for a few years where they are unable to commit to extra hours or some challenging assignments without previous planning, but as young fathers in dual career relationships are also likely to be in a similar situation in the up-and-coming generation, corporate attitudes are likely to change, or the companies may find it more difficult to attract or retain the best engineering talent. The use of samples from these two countries provided contrast in the working environment in terms of social attitudes towards gender equality, and organizational and national support systems for parenting, and this showed up particularly on commitment as ‘hours over the norm’.

This is an interview study of a relatively small number of respondents, but many of these engineers are in key positions in world-renowned companies, and their leaders set the trends in engineering management and its international professional community. It could therefore be argued that these descriptions of what ‘commitment’ means in these organizations are likely to be found in other engineering organizations in these two countries. However, some of the issues surrounding quality and availability in the sampled companies may be less strongly
embedded in the commitment culture of other engineering companies making less complex, non-export type of products. So the mix and weighting of the different components of commitment may differ according to product and market. The Swedish responses did tend to reflect the distinctive Swedish participative management style and export-led industry on dimensions such as involvement and task delivery. Further research is needed to investigate the meaning of commitment in non-engineering contexts, where there may be a different composition of commitment characteristics, perhaps emphasising service rather than tasks.

As Swedish women engineers had not progressed as far in the management hierarchy as their UK counterparts in these leading engineering organizations, it was not possible to match pairs at director level, so the top manager category was biased in favour of males. More of the Swedish women had young children than the UK women, so that may have biased the responses. The range of appropriate English vocabulary held by the Swedish respondents will also have introduced bias, but it was considered that this would be less than translator bias, and a high standard of English was the norm from the Swedish engineers. The researchers also influenced the findings, particularly through categorization when seeking patterns in the data.

This study identified gender differences in the mix of components of commitment, through behavioural descriptions of role models of commitment. It is recognized that these may be behavioural outcomes of commitment, rather than commitment per se, but when commitment is assessed by managers, it is the committed behaviour that is perceived. These perceived behaviours form the basis on which the shared organizational meanings of commitment are constructed. These gender differences are likely to impact the assessment of women’s commitment by male managers, unless the organizational expectations of commitment are made explicit, rather than being part of the tacitly understood commitment culture.

As this is the context in which women engineers wish to work and progress, these results, if brought to the notice of women engineers by organizations, may enable women to make a more informed choice as to the composition of their commitment to their organizations, knowing what their senior managers are seeking in terms of commitment, and what is likely to be rewarded. Little evidence was found to suggest that perceived lesser commitment was being used as a rhetoric by males to exclude women from senior levels. It was more a question of men and women understanding the needs and nature of the business, in the context of their own commitment, and making choices. Like the female engineers, male engineers were having to consider seriously the amount of commitment they could give to the company to keep a balance in their lives. The women engineers’ composition of commitment with a stronger organizational orientation than that given by the male engineers provides evidence which should reduce male concerns about women’s perceived lesser commitment to the organization. However, the lesser visibility of their meanings of commitment may have contributed to that male view. The top women engineers in this study, providing role models for those below, with their combination of the virtuous, virtuoso, volunteer, and vanguard meanings of commitment, seemed to have overcome that hurdle already.

Appendix: the interview schedule

SECTION 1 (unprompted)

Introduction to the interview

1. The meaning of ‘commitment’
   • What does ‘commitment’ mean to you in a work context? (prompt: If someone says a person is highly committed, what does that mean?)

2. The manifestation of ‘commitment’
   • Describe a senior role model of commitment (without giving the name). How do you know that this person is committed?
   • Is that a male or female? Can you describe a role model of commitment of the opposite sex to the first one given?
   • Describe someone with low commitment. How do you know they are not committed?

SECTION 2

3. The properties of ‘commitment’
   • Tell me more about your views on commitment? (prompts: what is it, how is it recognized, what is the target, does it fluctuate?)
   • What about commitment in engineering? (prompt: professional? anything special?)
   • How do you feel about commitment, is it a two-way process? Why do you say that?
   • Are there any links between commitment at work, and family commitments?
4. The appraisal of commitment
   • How and when is commitment appraised? (prompts: experiences, forms, systems)
   • What is the manager’s role in the appraisal process?
   • How do you think commitment is signalled and interpreted?
5. Gender and commitment
   • What about women engineers and commitment?
   • What about requests for career breaks, part-time work?

CONCLUSION
Thanks, any questions, give visiting card for future contact.

Acknowledgement
This research project was supported by a Crowther Fund Award from the Open University, United Kingdom to Val Singh for the Swedish part of the study.

References

© Blackwell Publishers Ltd. 2000


