

Beyond 'Gender Differences': A Canadian Study of Women's and Men's Careers in Engineering

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This article explores the relationship between gender and career paths for a group of women and men who graduated as engineers during a period of labour market turbulence in western Canada during the 1980s. Using a model adapted from Brown (1982), the article uses 'career path' as a device to organize data drawn primarily from telephone and face-to-face interviews with 317 graduates. Three career paths provide the focus for the study: the 'organizational', characterized by stable employment with one employer; the 'occupational', characterized by mobility between employers; and the entrepreneurial, characterized by self-employment. The use of the career path framework moves the study beyond global comparisons (of the dichotomized 'gender differences' kind) between 'the women' and 'the men'. As well as allowing for comparison between the paths, it allows more refined and contextualized comparisons within each path. Such comparisons produce patterns of similarity and difference that sometimes transcend gender.

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Introduction

Writing about her ethnographic research with children, American sociologist Barrie Thorne describes being drawn to record the situations when gender divisions were accentuated and 'the girls' and 'the boys' were defined as distinct and opposing groups. The occasions when gender divisions were *not* accentuated seemed somehow 'less juicy, less ripe for gendered analysis' (Thorne, 1997, p. 39). The juiciness, the somehow *obvious* relevance of dichotomous gender comparisons, has been the underlying rationale of much gender research. But as Thorne and others (for example,

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Lorber, 1996; Marshall, 2000) have recognized, gender differences are never absolutely dichotomous, and the areas of overlap may be as interesting and informative as the dimensions on which, in research on adults, 'the men' differ from 'the women'.

This article represents an attempt to do a different kind of gender analysis, which takes specific account of those areas of overlap. It does so, furthermore, in a research field where such an approach is unconventional. The article reports on a study of women and men who graduated in engineering from a western Canadian university in the 1980s. Engineering as a profession, as I will demonstrate below, has invited and for many reasons *required* comparisons between 'the women' and 'the men', at least in the early years of women's entry, and this study could have gone in the same direction. My initial goal was to look at gender differences in career paths in engineering.

But the inclusion of individuals' own accounts of their careers, and the reasons they gave for changing (or not changing) their jobs made new demands of the study. They moved it away from 'gender differences' and towards a more nuanced analysis which showed complex patterns of affinity and contrast between (groups of) 'women' and (groups of) 'men'. This shift is reflected in the article. It provides information about the career paths of women and men who graduated as engineers in a particular social and economic context; but, informed by recent theoretical and methodological concerns about the study of gender, it attempts to break with some of the conventions in doing so.

'Gender differences' in theoretical and political context

In the case of this particular study of women and men in engineering, the question that had to be asked was whether it was legitimate to speak of the women as a group, as compared to the men as a group. (Many) women seemed to experience particular disadvantages compared to (many) men, particularly when it came to balancing their paid work with family responsibilities. But while it was politically important to tell this story, it was not the whole story. In short, the women were not all alike, and nor were the men, and in some cases women and men were more alike than different. It seemed important to tell this part of the story also.

The theoretical and political problems implicated in speaking of 'gender difference' link this study to a rich and often contentious scholarly history. The essentialism of early second wave feminist theorizing which, in Spelman's (1988) terms, tried to tell the 'story of women' as a counter-balance to the 'story of men' foundered in the face of challenges from groups of women who did not recognize themselves in the story being told. But deconstruction of the category 'woman', particularly in its postmodern turn (e.g. Butler, 1990) has created political problems for feminists who want to expose

the structural conditions and social relationships which disadvantage or oppress women rather than men, and who therefore want to act and speak, strategically, about women as a collective. How to speak about 'women' while still acknowledging their diversity and without lapsing into essentialism has been a preoccupation in much recent theorizing. Thus Young (1994) borrows from Sartre to suggest that women can be thought of as a 'serial collectivity'; Nicholson borrows from Wittgenstein to suggest that we think of 'woman' as Wittgenstein does of 'game' — as 'a word whose meaning is not found through the elucidation of some specific characteristic but is found through the elaboration of a complex network of characteristics' (Nicholson, 1995, p. 60). Marshall (2000) cites Felski's (1989) suggestion of the 'feminist counter-public', which comprises simultaneous internal and external political moments. Internally, 'it seeks to confirm the specificity of the different ways that women are "women"', while externally, it 'seeks to press claims on behalf of "women", and challenge existing power relations' (Marshall, 2000, p. 79).

These theoretical and political concerns have a different face, but similar force, in some feminist empirical sociology, where the focus has been on the ways gender is socially constructed on an ongoing basis, and in interaction. The recognition that individuals 'do gender' (West and Zimmerman, 1987), and in so 'doing' reproduce or resist dominant/normative expectations suggests from another perspective the fluidity of gender categories (and identities). Recent sociological scholarship in this vein which interrogates masculinity (Connell, 1995; Kimmel, 1987; Kimmel and Messner, 1995; Messner, 1997) indicates the extent to which men, too, can no longer be thought of in categorical terms. This returns us to the present study, and the question of whether it is legitimate, or possible, in a fairly clearly defined social and historical milieu, to talk about women and men as categories of engineers, and, furthermore, to compare them.

Research on gender and engineering

As I suggested earlier, this is a new question in the context of existing research on gender and engineering. As recently as the 1980s, with the important exception of Sally Hacker's (1989) innovative work on 'pleasure, power and technology' well-known studies of engineers were implicitly studies of men in engineering (e.g. Whalley, 1984, 1986; Zussman, 1985). Other studies focused on the organization and status of engineering work (Meiksins and Smith, 1992, 1993) or on 'engineering culture' (Kunda, 1992) without making gender part of the analysis.

Hardly surprisingly, given that engineering has been until recently so emphatically all about men, much of the research to date on women in

engineering has involved 'telling the story of women'. As relatively recent, and not very numerous, entrants to this male-dominated field, women engineers in several western industrialized countries did seem to share experiences that warranted this approach. For example, the Canadian Committee on Women in Engineering cited, among many stories of sexism, systemic discrimination and workplace inequality, the findings of a group of human resource practitioners, women engineers and technicians who identified the following 'common and difficult' barriers faced by women engineers:

a lack of collaboratively planned career development; absence of policies that support individuals balancing career and family; workload demands; heightened visibility; promotion that depends on emulating management; traditional attitudes to women in professional roles; and absence of networks, mentors and role models. (Canadian Committee on Women in Engineering, 1992, p. 60)

This 'story of women' has been echoed in a variety of studies, which have told it in two ways: either through studies of *women* (rather than men) in engineering (e.g. Carter and Kirkup, 1990; Devine, 1992; Evetts, 1994a, 1994b, in the UK; McIlwee and Robinson, 1992, in the USA) or through some variety of comparison between women and men. In the latter group, studies range from engineering education and socialization (Dryburgh, 1999) to specific workplaces (Kvande and Rasmussen, 1995). They also range from statistical comparison of 'gender differences' in background and career characteristics (Jagacinski, 1987) to more qualitative comparisons derived from case study and interview work in which the categorical distinction between women and men is less sharply drawn. For example, Evetts (1996) works with 'careers history' data from 31 women and 10 men in science and engineering careers. She notes that women were deliberately over-represented since 'women's experiences of career in engineering and science in industry' were 'under-researched' (*ibid.*, p. 44). As might be expected, the pattern of analysis is of differentiation among the women, who are then compared to an undifferentiated (and much smaller) group of men. In general, however, even the more qualitative studies tend to mute differences among women, and among men if men are included. The implicit focus continues to be the comparison between 'the women' and 'the men'.

Exploring the overlaps

Methodologically, such comparisons derive from an approach in which gender, unproblematically presented in binary categories, is implicitly or explicitly treated as an independent variable. One begins with 'the women' and 'the men', and proceeds to note the extent of the differences between

them. My goal, however, is to be able to speak about the ways in which the women, and men, in my study are *not* homogeneous categories of engineers. At the same time I want to be able to generalize in a limited way about the extent to which (some) women's collective experience may be different from that of (most of) the men. An alternative approach, as suggested by Lorber (1996), is to organize data on the basis of some category or categories *other* than gender, and then see how gender plays out within these alternative categories. My original intention, to study 'gender differences in career path', needed to be turned around. Instead of *beginning* with gender, in this study I begin with career path, and use it as an organizing device through which to explore gender.

'Career path' draws on Brown's (1982) discussion. Brown argues for the importance of a perspective on working life that illuminates 'the interaction between individual decision and social structural opportunity and constraint' (*ibid.*, p. 123). A focus on career paths was particularly appropriate in the present study, given the dramatic changes in the labour market at the time the engineering graduates in the study were looking for work. Engineering careers in western Canada, and particularly the province of Alberta, have been substantially shaped by the energy industry which has traditionally been a major employer of engineers. The cycles of boom and bust in this industry during the 1980s led to large-scale restructuring which changed the general contours of engineering careers. For example, as a report by the Association of Professional Engineers, Geologists and Geophysicists of Alberta (APEGGA) noted, engineering careers characterized by long-term stable employment with one employer became increasingly unlikely (APEGGA, 1995). At the same time, as I have described elsewhere (Ranson, 2001a) companies increasingly 'outsourced' engineering work, thereby institutionalizing contracting and consulting arrangements for self-employed engineers. And these changes were happening at a time when increasing numbers of women engineers were entering the job market.

The engineering study

Brown distinguishes between three career types¹ which bear on the present study: the *organizational*, built by advancement with one employer; the *occupational*, characterized by advancement achieved through movement from employer to employer; and the *entrepreneurial*, characterized by self-employment. I use this framework to organize the data obtained from 317 engineers (164 women and 153 men) who graduated from the Faculty of Engineering at a western Canadian university between 1980 and 1990 (see Table 1). These numbers represent 68% of the 241 women who graduated during this period, and 62% of the random sample of 247 men generated for comparison purposes.

Table 1: Description of sample

Graduation year	Women	Men
1980	7 ^a	13 ^b
1981	16 ^c	12 ^d
1982	14	12
1983	14	18
1984	19	17
1985	20 ^e	14 ^f
1986	12	18
1987	19	11
1988	14	10
1989	12	15
1990	17 ^g	13
N:	164	153

Notes: Number of face-to-face interviews:
a: 4 b: 10 c: 13 d: 9 e: 14 f: 9 g: 4.

The aim of the study was to collect comprehensive work history information from the time of university graduation, together with a family history which took account of changing domestic circumstances and other dimensions of adult life around which career decisions had to be made. Three strategies were employed to gather this information. Semi-structured telephone interviews were conducted with 218 participants. Self-administered questionnaires which followed the format of the telephone interview were conducted with 36 participants (who either specifically requested this approach, or who had moved outside Canada and were less accessible by telephone). Finally, 59 representatives from the 1980, 1981 and 1985 cohorts² — all who could logistically be interviewed in person — took part in extensive semi-structured face-to-face interviews. Four of the women in the 1990 cohort were also interviewed in person.

These strategies produced a complex combination of quantitative and qualitative data. Quantifiable information from the transcribed face-to-face interviews was added to the data base constructed from the coded telephone interview and questionnaire responses. But because of the way the survey was constructed, and the number of open-ended questions it contained, it was possible to analyse each one holistically, along with the face-to-face interviews, as narrative accounts of careers unfolding. In other words, it was possible to merge the interviews with the surveys, and analyse them all as stories about careers.

Gender and career paths

Brown's career types, described earlier, needed only minor modification for the present study. For example, because of the volatility they confronted when they first graduated, many graduates took on an assortment of contract work, or jobs unrelated to their main occupational focus, before finally landing a job with the employer with whom they stayed. Thus I operationalized the 'organizational' path as one characterized by continuous employment with one employer since graduation, but also by job changes early in the career which culminated in an ongoing, extended period of employment (at least seven years at the time of the interview) with one employer. On the other hand, some graduates, having been employed by one employer for a long time, made a job change, some time within this seven-year window, expressly in order that their careers *not* be 'organizational'. Thus I operationalized the 'occupational' path as characterized by frequent job changes (conforming to Brown's category), but also by a strategic job change in the recent past (which may also have terminated an extended period of employment with one employer.) The 'entrepreneurial' career path is represented here by individuals whose work histories, some time within the seven-year window, culminated in self-employment, regardless of the path that led to it. The seven-year window, representing the time span from the graduation of the youngest cohort in 1990 to the time data collection began in 1997, is the frame through which all participants' careers are viewed.

The career paths

Analysis of the work histories of the 317 engineering graduates in the study revealed that more than 80% could be accommodated in one of the three career paths described above. About one-third of both the women and the men in the sample had 'organizational' career paths. Some 32% of the women, and 44% of the men, had 'occupational' career paths. About 13% of the women, and 12% of the men, had 'entrepreneurial' career paths.

As Table 2 suggests, other career paths emerged from the work history information. One of these paths accounted for a small proportion of women and men who were working as engineers when surveyed. About 6% of the women, and 7% of the men, were characterized as 'late starters'. In these cases, permanent employment was too recently begun to allow for more precise classification. In most of these cases, the labour market turbulence and downsizing in the energy industry noted earlier prompted individuals to defer permanent employment until economic conditions improved. Several returned to university for graduate degrees; others went on working holidays abroad. The two remaining paths represented exits from careers in engineering. Some 8% of the women, and 4% of the men, were employed in

Table 2: Career paths of 1980–90 engineering graduates

Career path	Women No. (%)	Men No. (%)
Organizational	50 (30.5)	50 (32.7)
Occupational	52 (31.7)	67 (43.8)
Entrepreneurial	21 (12.8)	19 (12.4)
Late starters	10 (6.1)	11 (7.2)
Changed occupations	14 (8.5)	6 (3.9)
Not in paid employment	17 (10.4)	—
N:	164	153

other occupations. And some 10% of the women were not in paid employment when surveyed.

'Gendered' paths?

Using 'career path' as a sorting device, instead of binary gender categories, immediately re-orientates the analysis. Where women and men were most clearly differentiated was in terms of the proportions having left engineering: only 4% of the men, compared to 19% of the women, were no longer in engineering-related work. However, other career paths, for those still employed as engineers, did not suggest the same order of 'gender difference': the proportions of women and men in both 'organizational' and 'entrepreneurial' career paths were very similar; and while there was certainly a 'gender gap' in proportions in the 'occupational' career path, the 'gender overlap' was more substantial.

The 19% drop-out rate from this sample of women engineering graduates raises important questions about the retention of women in engineering which *do* invite more conventional 'gender difference' analysis. These are questions that, politically and strategically, invite a focus on women as a group, because it is women (though not all the women) rather than men who are dropping out of the profession. This difference, which I have discussed at greater length elsewhere (Ranson, 2000), links this study to research on women in other non-traditional occupations, where similarly gender-differentiated rates of drop-out are consistently found (Morgan, 2000; Ranson, 1998.) In this article, though, my focus is on whether the experiences of women who *remain* in engineering differ significantly from those of men. The more specific question is whether the characteristics and experiences of women and men *within* the different career paths differ along gendered lines. Since, as noted above, the 'organizational', 'occupational' and

Table 3: Demographics of organizational career path

Graduation year	Women (N = 50) No. (%)	Men (N = 50) No. (%)
1980–2	5 (10)	15 (30)
1983–5	16 (32)	14 (28)
1986–8	14 (28)	12 (24)
1989–90	15 (30)	9 (18)
Married/partnered	38 (76)	47 (94)
Children in family	30 (60)	41 (82)
Size of current employer		
< 100	2 (4)	7 (14)
100–499	7 (14)	7 (14)
500–999	5 (10)	5 (10)
1,000 or more	32 (64)	27 (54)
[Missing]	[4] (8)	[4] (8)
Mean weekly hours worked		
All*	38.30	42.76
No children	41.05	39.89
Children	36.53	43.56

Note: * Hours missing for 4 women, 9 men.

'entrepreneurial' career paths accommodated most of the study participants, those three paths provide the focus for what follows.

Gender and 'organizational' careers

As noted above, about 30% of the women, and about 33% of the men, had careers in this category. In other words, they had been employed for an extended period (at least seven years prior to being interviewed) with one employer.³ In fact, 58% of these women, and 44% of the men, had only had one employer.

As Table 3 indicates, a higher proportion of the older cohorts were men, and a higher proportion of the younger cohorts were women. A higher proportion of men than women were married or partnered, and had children. More than half of all respondents in this category (though proportionately more women than men) worked for employers of more than 1,000 people. Women, on average, worked about 4.5 hours a week less than men — but the presence of children made a considerable difference. Childless women on average worked slightly *longer* hours than childless men. However, women with children worked shorter hours than childless women and men;

men with children worked *longer* hours than both women with children, and childless men.

But what was it that set these women and men on this particular career path, characterized by stability rather than mobility, and work with large rather than small employers? And how does the answer to this question illuminate the 'gender differences' just noted? The survey questions did not explicitly ask individuals to account for or reflect on their own distinctive career progress. And in fact, for about one-third of both the women and the men in this career path, it was not possible to uncover any rationale. But from the remaining two-thirds, responses to other questions, supplemented by the interview data which did invite this reflection, makes it possible to organize accounts⁴ of why people tended to stay rather than move into three general themes: satisfaction with career opportunities and progress within the company; stability and job security; and the benefits of long tenure, especially with respect to flexibility.

Talk about *career opportunities and progress* appeared in responses from both women and men. For example, Evan, a mechanical engineer, married with one pre-school child, had worked for his current employer, a major engineering consulting company, since 1988, as well as for a three-year period earlier in his career. His experience with the company had included a period overseas, which he described as 'very, very nice'. His work had been characterized by variety and 'a chance to look at new things':

It's been good. I've been very happy there. If the work keeps being the same sort of work as what I have, I'd be happy because it does change. I've never done the same thing . . . There's always something different.

Mary, who graduated in the same (1981) cohort as Evan, had worked for the same small privately owned high technology company for almost all of her working life. It had given her 'a lot of variety', and she was planning to become a part-owner when the present owner retired.

References to *job security and stability* were also made by both women and men. In most cases, these comments came from individuals who were the principal income-earners for their families, and talked directly about the trade-off between intrinsic benefits related to challenging and interesting work, and the extrinsic benefits of a job that was predictable and financially secure. For example, Brian said that he 'missed the security of the double income', but valued the fact that his wife was at home; the predictability of his job allowed 'a certain stability and a certain rhythm to our family life'. Tony, who explored some options outside engineering after he graduated in the early 1980s, went to work for his current employer for what he called 'pragmatic reasons' in order to support his family. Though in the study overall men were more likely to be the principal income-earners than were women, the ten women⁵ in this group whose salaries and benefits *were* the mainstays for their families spoke in very similar terms.

But it was in the talk about *flexibility* that gender differences were more pronounced. In general, it was women, rather than men, who spoke about long tenure with an employer earning the benefits of flexibility, or the possibility of part-time work, once children arrived. Shelley, who had worked for her present employer since graduating in 1982, had taken maternity leaves of four to six months with each of her three children, and moved to part-time work after her second child. She commented that 'it had taken her years' to manage it, and she would stay with her present employer until her children were all in school. Kathy, who went to work for her present employer some months after her graduation in 1990, said she would have looked for another job to get more experience, but had a baby instead. She decided not to move because 'they were flexible and I had seniority'.

Monica, who had worked for the same large company since graduation in 1985, pulled many threads together in reflecting on why she had not changed employers. The main reason was what she called 'work-life balance', an important factor since she and her husband were now thinking about having children. She pointed out that part-time work was an option in her company, and those who worked three days a week were 'treated equally'. Another enticement was the fact that long tenure meant longer holiday entitlement, and 'if I had a family . . . it would be nice to have more time off.'

In general, what was suggested by all these comments together was that most people in 'organizational' careers stayed with one employer either because their work was interesting and challenging and they saw no professional need to leave, or because stability and seniority offered family-related benefits. What chiefly distinguished the women from the men in the latter category was the *nature* of the family-related benefit that was directly pursued. For the men, it was financial security; for the women it was flexibility.

Gender and 'occupational' careers

As noted above, about 32% of the women and 44% of the men were in career paths described as 'occupational'. In other words, their work histories were characterized either by frequent career moves, or by a recent job shift away from an 'organizational' career path. But although a greater proportion of men than women fell into this category, Table 4 indicates that on a variety of demographic characteristics the differences between the women and men *within* this path were not compelling. There were no major differences between the women and the men in terms of the year in which they graduated (both older and younger cohorts were evenly represented, among both women and men). In contrast to the organizational career path, here smaller proportions of both women and men were working for large employers. A higher proportion of the men were married, but about two-thirds of both the

Table 4: Demographics of occupational career path

Graduation year	Women (N = 52) No. (%)	Men (N = 67) No. (%)
1980–2	11 (21)	14 (21)
1983–5	17 (33)	20 (30)
1986–8	17 (33)	20 (30)
1989–90	7 (13)	13 (19)
Married/partnered	37 (71)	57 (85)
Children in family	36 (69)	42 (63)
Size of current employer		
< 100	16 (30.5)	20 (30)
100–499	5 (10)	14 (21)
500–999	3 (6)	4 (6)
1,000 or more	21 (40)	25 (37)
[Missing]	[7] (13.5)	[4] (6)
Mean weekly hours worked		
All*	39.32	44.65
No children	42.42	44.77
Children	37.82	44.58

Note: * Hours missing for 9 women, 9 men.

women and men in this category had children. As in the organizational career path, the presence of children seemed to lead to a reduction of working hours among the women. Unlike the men whose career path was organizational, however, the presence of children made little difference to men's working hours.

Similarities between the women and the men were also apparent when the open-ended survey questions and unstructured interviews were added to the analysis. Since this career path, unlike the 'organizational' path, involved individuals who had usually changed jobs several times, an extra category of information was available: the reasons why job moves were made. Though about 15% of the cases in this career path did not contain enough information to explain their mobility, other responses could, as for the 'organizational' career path, be classified into several themes. Some individuals described their job moves in terms of *career advancement*. Others talked in terms which suggested that their moves were motivated by a *search for 'the right job'*, one which would fulfil particular (and often quite individual) criteria. For others, job mobility seemed *unplanned*, or forced by external circumstances.

About one-third of the men, and about one-quarter of the women, talked about their job changes in terms of *career advancement*. They spoke of better

jobs, better opportunities, more money, or broader experience. Diane, who had worked for her second employer for 11 years, said of her job move at that time

Once you've worked for a company for 11 years, you're either going to stay there forever or you'd better find something different. So I was starting to realize, even though I had some significant changes throughout my years there, it was time to try something new.

Diane distinguished herself from former colleagues who liked to be 'safe' in a big company, and needed to be 'coddled'.

This line of thought linked to a construction of mobile careers as producing more competent, marketable engineers. This marketability was described in terms of a broader array of skills acquired through strategic job moves. Gavin, a 1985 graduate, had just moved to his third employer, where he anticipated adding project management skills to the technical and supervisory skills he had acquired in his earlier jobs. That way, if he decided down the road that it was 'time for a switch', that the new company was 'not the company for him', he would have a 'more well-rounded portfolio'.

The clearly planned job moves described by both Diane and Gavin neatly exemplify the 'career advancement' model of mobility. Other responses, again from both women and men, described job mobility which had culminated in, or which was *a search for the right job*. In other words, some individuals talked as if their moving days were over, and others were looking ahead to that same point. For example, Warren, a 1990 graduate, moved after four years from a major to a mid-sized oil company, where he hoped to work into an executive position. Though he would have preferred to work for a smaller company, the stock options with his present employer were 'amazing' — and would likely allow him to retire early. Laura, a 1983 graduate, moved after emergency surgery and the diagnosis of a chronic illness to her fourth job — one which was less time-consuming and stressful. Sara, a 1987 graduate currently working for her second employer, a major oil company, planned to move into her own consulting business in five years. She said she was only waiting for her capital to increase.

The third category of 'occupational' careers contained those whose *mobility seemed unplanned*, or forced by external circumstances. And it is here that a distinction needs to be drawn between individuals' reflections about their careers, and what, based on their descriptions, seemed to be the material circumstances in which job moves took place. There were comments from both women and men that suggested job moves that 'just happened', that were serendipitous. Asked in an interview what she saw as her long-term career goals, Rosa replied, 'I haven't a clue. I've pretty much meandered my whole career through.' Ben, a 1980 graduate working for his seventh employer — the one he, like Warren cited above, thought would make him rich enough

to retire — described one job obtained because he went to another province 'on a whim', and other jobs landed through a wide network of informal contacts and chance meetings. Ingrid, a 1985 graduate, had a male mentor who recruited her to follow him on most of the stages of his own highly mobile career path.

But for other graduates, both women and men, mobility seemed much more the result of circumstances over which they had little or no control. As noted above, the turbulence in the local labour market as a result of restructuring in the energy industry during the 1980s meant that many of the graduates in the survey had some experience of company mergers and bankruptcies, and of lay-offs or voluntary terminations. But some individuals, both women and men, seemed particularly affected by these setbacks, either because they were recurring, or because they were combined with other personal or family circumstances.

The 'occupational' career path is characterized by mobility between employers, and, as has been suggested in the examples just cited, by a variety of work settings. In general, the moves tended to lead to more lucrative work in smaller companies. But there were cases among both women and men where moves were not planned, and were not always for the purpose of advancing a career. The important point to note, however, is that the differences among individuals in this career path, in terms of their accounts of how moves came to be made, did not play out along gendered lines. With the important proviso that more men than women experienced 'occupational' career paths, the women who *did* fit here were more like their male colleagues than they were different.

Gender and 'entrepreneurial' careers

About 13% of the women, and 12% of the men, were self-employed at the time of their participation in the study (see Table 5). Though the numbers following this career path were much smaller than in the two discussed earlier, some comparisons could certainly be made. The relevant bases of comparison here related to the *kind* of self-employment undertaken, whether it took the form of a business employing others, the hours worked, and the level of income earned.

What became clear in a comparison of the work histories in this category was that, while most of the men were self-employed in businesses which earned high incomes and in which they worked easily 50 or more hours a week, women's self-employment was bifurcated. About half had careers that resembled those of the self-employed men (though with some important differences also, to be addressed shortly). The remainder (eight women) did occasional consulting work to keep in touch with engineering, but spent most of their time caring for young children.

Table 5: Demographics of entrepreneurial career path

Graduation year	Women (N = 21) No. (%)	Men (N = 19) No. (%)
1980–82	6 (29)	7 (37)
1983–85	8 (38)	7 (37)
1986–88	4 (19)	4 (21)
1989–90	3 (14)	1 (5)
Married/Partnered	20 (95)	16 (84)
Children in family	18 (86)	14 (74)
Employer of others?		
Yes	4 (19)	13 (67)
No	16 (76)	2 (11)
[Missing]	[1] (5)	4 (21)
Mean weekly hours worked		
All*	31.17	57.60

Note: Hours missing for 4 women, 4 men.
* Since childless women were among those for whom hours were not available, it was not possible to differentiate between those with children, and those without.

These occasional consultants were interesting for two reasons. First, for all but one (a woman who turned to consulting work while completing a PhD) consulting was a response to the presence of children. Three of the women, who had their first children in their thirties after establishing careers in engineering, were fielding calls from prospective employers and picking and choosing among contract jobs. But for all three, family had priority. Kaye's first child arrived when she was 37. As she said, 'I've been working 15 years and it's just wonderful to have a break.' Three of the women turned to consulting and contract work because they were unable to convert full-time jobs to part-time ones. Two of the three actually continued to work for their former employers on part-time contracts. All these women represented a link between the women with children who were no longer working in engineering and those who had maintained more full-time careers through the child-rearing years. Second, they collectively suggested a reinterpretation of contracting work as offering the flexibility not always available in permanent engineering jobs.

One of the 'occasional' contractors worked 20 hours a week, but none of the others did more than 10 hours of paying work a week. And all worked as individuals, not in businesses where they were employing others. This clearly differentiated them from the second group of self-employed women,

all of whom worked for pay for at least 30 hours a week, and nearly two-thirds of whom were owners or part-owners of businesses employing others. Yet even in this group, almost all the women had children, and cited flexibility as the main attraction of self-employment. In this group, too, self-employment frequently followed long experience with other employers. Heather, having had her first baby in her forties, wanted to have 'quality time' for her child, and appreciated not having to 'put in the long hours' because her business was up and running. Colleen transferred to consulting when her children were 14 and 10, because she wanted to be 'superflexible', able to participate in her children's activities and volunteer at school and in the community.

Of the men who were self-employed, about two-thirds were owners or part-owners of businesses that employed other people. And with the exception of one man who was working part-time while completing a graduate degree, and another who was cutting back on billable work in order to work on his own projects, all worked long hours, ranging from 55 hours a week to 80 hours. The average income level for these men was more than Canadian \$106,000. The high income was presumably achieved by the long hours. Don commented that he was trying to spend more time at home, but expected his business to get busier and busier. He hoped to be able to hire more people, but thought he would 'just have to put in the hours'. Asked about long-term goals, Don said: 'I would like to organize my life to have more leisure time, without it affecting my income level.'

Another perspective on men's self-employment came from Gary, who had recently left a partnership in one engineering consulting company to start his own consulting business. He commented:

In 1994 and since, there's been numerous opportunities to take jobs with companies downtown, lots of them. But I still chose to do what I'm doing because I still think that I want that control over the things I do and how I do it and how things around me unfold. So you know, I can hire the people that I want to work with and I can do the projects that I think would be interesting and I can have the atmosphere and the environment in the office that I want. I mean, it's just a control thing I guess.

Gary added that with a wife and children, financial security was more of an issue; it would be 'so easy' to take one of the salaried positions he was being offered — 'you know, the pension plan and four weeks holiday and all of this stuff'. But, he added, 'I guess in the long run I would get pretty bored with that pretty quick.' Self-employment does suggest autonomy and control. But the glimpse of self-employment offered by the small number of self-employed women and men in this study suggested control exerted for different purposes. The notion of control as providing flexibility — for family and other interests and responsibilities — was apparent only in the women's responses.

Discussion

This study had two interrelated objectives. The substantive objective was to examine the career paths of a group of women and men who graduated as engineers in a particular social and economic environment in western Canada. The theoretical and methodological objective was to do so from a perspective which did not lose sight of gender as an important analytic lens, but which also tried to avoid the 'slide into dualism' identified by Thorne (1997). Exploring issues of gender within as well as between different career paths enabled a more nuanced comparison of women's and men's experiences, and their own accounts of their careers.

The particular sorting device used here is certainly open to criticism. One concern is that it appears to disregard the length of time people have been in the labour market. This would be a serious shortcoming if it appeared that career paths were a function of cohort — but this did not appear to be the case. A more important issue raised by this concern is that the career paths described in this study should not necessarily be seen as final 'outcomes' for the participants. What was captured here, as noted earlier, was a seven-year slice of time. Some of those in 'organizational' careers might with time have moved to the occupational path; those in occupational careers might have moved to the entrepreneurial path. And the younger the person, the more time would be available to make such changes in the future.

But what about the approach in general? Does a gender analysis that purports to move beyond binary 'gender differences' actually manage to do so? In practice, comparisons between 'the women' and 'the men' could not be avoided altogether. Indeed, it could be argued that the strategy merely allowed the same kinds of comparisons to be made within more narrowly defined categories. But this in turn suggests one of the strengths of this approach — as a safeguard against the sort of over-generalizing about women and men that was the major theoretical concern in the first place. The comparisons made in this article are not *general* comparisons of women's career experiences compared to men's. Instead, they have more focus and context: Do women and men whose career paths are stable or 'organizational' have the same interpretations of their career histories? Do the women and men for whom job security is important understand it in the same way? And so on.

I suggest that this approach has produced, substantively, information that more conventional approaches might have overlooked. First, it has made clear the extent to which the men's careers, the conventional basis for comparison in much of the earlier work on women in engineering, were themselves highly differentiated. This understanding alone was sufficient warrant for a new approach, however exploratory. Next, the more refined comparisons made possible by a focus on career paths produced some interesting patterns of convergence and divergence. For example, while the more

mobile occupational career path was followed by fewer women than men, the different subjective accounts of career moves produced by those in this category did not play out along gendered lines. Thus where career advancement, for example, was the reason for job mobility, it was defined in similar terms and was pursued as single-mindedly by women as by men. Yet the temptation to read this particular finding as, say, a sign of women's adoption of a more conventionally masculine career orientation disappears in the context of other comparisons, which showed men settling for more pedestrian and stable 'organizational' careers in response to family demands. Overall, this approach sets salutary limits on generalization.

It also allows a different *kind* of generalization, organized around concepts emerging from the analysis. For want of a better term, I will call them 'contextualized generalizations'. In this particular study, two useful organizing concepts that emerged were 'job security' and 'autonomy'. 'Job security' was an important rationale emerging from interviews with women and men whose career path was 'organizational'. For both women and men, this security was perceived as offering family benefits. Yet the nature of the benefits, as noted earlier, was not the same. For men, it generally meant the financial stability they needed as their family's primary breadwinner. For women, it meant the flexibility they needed to allow them to oversee, if not to carry out, the family work.

'Autonomy' emerged as an important rationale among the smaller group of women and men who were self-employed. It meant the possibility of controlling the circumstances and organization of work. Yet here, as in the previous example, it played out along more explicitly gendered lines. For most of the men, control took on the more general sense of being 'in charge'. For the women, control allowed them to be flexible — for the same reasons as the women in organizational careers wanted flexibility. The importance of flexibility was the thread that linked many — though not all — of the women in the study.

Notes

1. Brown's classification included a fourth type, the 'careerless', for those expecting only immediate rewards from work, rather than anticipating advancement through an extended work history.
2. These particular cohorts were chosen mainly because they best reflected the 'boom' (1980–1) and 'bust' (1985) cycles in the restructuring of the Alberta energy industry during the 1980s.
3. Seven individuals included here had careers interrupted by breaks such as unpaid leave, educational leave, or periods of contract work. In every case, however, their work history had involved only one employer.
4. I try to distinguish between 'accounts' which individuals provided for their own choices, decisions and future plans, and the material circumstances in which they

occurred. The latter may invite speculation about 'reasons', but cannot be equated with 'accounts'.

5. Of the 164 women who participated in the study, 24 identified themselves as family breadwinners.

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