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Ed. note: The promised Part II of the paper in TOG 7(2) by Anthony C. Lea entitled *An Overview of Formal Methods for Retail Site Evaluation and Sales Forecasting* has not been included in this issue due to an abundance of fine articles which have been awaiting publication. It will appear in TOG 8(1) under joint authorship with Gary Menger.

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The Status of Women in Canadian Geography

Over the past decade, studies of women's positions in post-secondary education in Canada have consistently documented two patterns. First, there are relatively few women in faculty positions in Canadian universities; furthermore, they tend to be concentrated in the lower academic ranks or in contract positions and to receive disproportionately low salaries. While this is in some measure a reflection of women's relatively recent entry into professional academic life, a consistent footnote to this picture is that improvement in their position appears to be slow.¹ Second, there has been a steady rise in the number of women students in Canadian universities. Since 1981, the majority of undergraduate students have been women; in 1987 they received 53 percent of undergraduate degrees in Canada. The growth rates in numbers of women graduate and undergraduate students has consistently exceeded those of men over the past decade.² (Also see Tables 6 and 6a). The relative proportion of women declines at the higher educational levels, as it does among the professoriate.³

The issue of women's status in higher education thus appears not to be simply a question of numbers but of the positions

held by the women who make up the numbers. Specifically, the growth in numbers of women students has far outpaced the growth in numbers of women in professional academic positions. There appears to be a growing discrepancy between the sex ratios of the student population and those of the faculty. This discrepancy raises a series of pressing questions which are pertinent to all aspects of current discussion on the present and future state of Canadian universities.

Perhaps most evidently, the bare figures raise the question of the future of all these women students. While most are, of course, not destined for academic careers, they are hopefully preparing for careers of some kind, and one wonders how a relative absence of women professionals in their training affects their expectations and objectives. This may be an especially acute question for the fast growing number of women in graduate programs, especially Ph.D. students, who may be forgiven for thinking that women are welcome in the academy only as long as they are students (or support staff).

More generally, the unequal feminisation of Canadian universities raises the question of what we are preparing stu-

dents to do. If the evidence suggests that we are not preparing women students for academic careers, this raises questions about the educational experience, which, especially at the graduate level, has been very much oriented toward the acquisition of skills for teaching and research. Graduate students, especially those whose training leads them to utilize empirical observation as a basis for drawing conclusions, will certainly see something of a conflict between what they do as students and what they can expect to be doing in their futures.

The growth in numbers of women students without proportionate growth in numbers of women faculty also raises questions of the implications of this unequal feminisation of the university not only for students' futures but for the future of the institution. Feminisation is correlated to the growth of part time studies, especially at the graduate level.⁴ It is also occurring at a time when universities, with other sectors of society, are experiencing financial stringency, when employment opportunities within and outside the universities are growing slowly, and when pressure for change is insistent and change is difficult to finance. Feminization itself, in changing the character of the university population, is one of the factors which create pressure for change. It may also be one of the factors which will extend the capacity for change. It raises questions not only about the capacity of the institution to adapt, but also about the capacity of disciplines to incorporate the new content and new social relations which women bring to their studies, and which, often unintentionally, they create by undertaking these studies in such large, albeit unequally distributed, numbers.⁵

Geography is no exception, either to these statistical discrepancies, or to the questions they raise. This article is concerned with examining some statistics on the numbers and status of women in Canadian geography relative to those for Canadian universities as a whole.⁶ This discussion emphasizes the situation in universities, with some note of non-academic members of the Canadian Association of Geographers (CAG). The statistics for geography draw primarily upon surveys carried out in 1978-79, 1984-85 and 1988-89 and where possible, assess changes over this ten year period.

Figures for 1978-79 are taken from a survey by Janet Momsen carried out in April 1979, for which she distributed questionnaires to all chairs of geography departments in Canadian universities, requesting information "on the number of

Table 1
Women Faculty in University Departments of Geography
1978-79, 1984-85 and 1988-89

| | Number of Women Faculty ^a | | | Women as % of All Faculty ^b | | |
|--------------------------------------|--------------------------------------|---------|---------|--|---------|---------|
| | 1978-79 | 1984-85 | 1988-89 | 1978-79 | 1984-85 | 1988-89 |
| Universities with: | | | | | | |
| Doctoral Programmes ^c | 16 | 21 | 29 | 4.3 | 5.6 | 8.1 |
| Masters Programmes only ^d | 14 | 10 | 15 | 11.0 | 7.7 | 10.6 |
| No Graduate Programmes ^e | 7 | 7 | 12 | 7.3 | 7.3 | 10.7 |
| Total Universities ^f | 37 | 38 | 56 | 6.2 | 6.3 | 9.2 |

Notes:

a) For 1978-79, data from Momson, Janet 1980 'Women in Canadian Geography' *The Canadian Geographer* 24(2), Table 2. For 1984-85, data from questionnaire survey. For 1984-85, of the 43 degree granting institutions listed in the 1984 Canadian Association of Geographers Directory, the data were available for 35 and a verbal response on numbers of faculty only from one university. For universities with doctoral programmes, data were unavailable for 2 (Laval and Victoria), for universities with masters only, data were unavailable for 4 (Moncton, Québec en Abitibi-Témiscamingue, Québec à Trois-Rivières and Québec à Rimouski), for those with no graduate programmes, data were unavailable for 1 (Athabasca).

For 1988-89, data from questionnaire survey. For 1988-89, of 43 degree granting institutions, data were available for 40. For universities with doctoral programmes data were available for all, for those with masters programmes only, data were unavailable with no graduate programmes, data were unavailable for 2 (Athabasca, Brandon).

b) For 1978-79, data on total faculty from Momson *ibid*; for 1984, from Barr, William ed. 1984 *Canadian Association of Geographers Directory* (Montreal: Canadian Association of Geographers). For 1988-89, from Royal Canadian Geographical Society 1988 *Roster of Departments of Geographer, Canadian Universities and Colleges* (Ottawa: RCGS/SGRC).

c) 1978-79 N=17, 1984-85 N=16, 1988-89 N=17

d) 1978-79 N=8, 1984-85 N=9, 1988-89 N=15

e) 1978-79 N=14, 1984-85 N=11, 1988-89 N=12

f) 1978-79 N=39, 1984-85 N=36, 1988-89 N=40

Table 1a
Women as a Percent of all Faculty in Canadian Universities^a:
All Disciplines and Geography
1984-85 and 1988-89

| | 1984-85 | 1988-89 |
|------------------------------|---------|---------|
| All Disciplines ^b | 15.7 | 18.6 |
| Geography ^c | 5.8 | 9.0 |

Notes:

- a) Excludes universities in Quebec for which data are not available.
b) Calculated from Statistics Canada data, Catalogue 81-258. Universities include only those which responded to the questionnaire surveys for 1984-85 or 1988-89.
c) Calculated from questionnaire surveys. Totals exclude Quebec.

male and female faculty members and students.⁷ Momsen received responses from 39 of the 41 universities surveyed, giving a response rate of 93 percent.⁸ Momsen also surveyed female membership of the CAG and analyzed CAG membership data.

For 1984-85 and 1988-89 the information on the numbers and interests of women faculty and graduate students in Canadian geography departments is derived from questionnaire surveys carried out by Geri Sweet of the University of Winnipeg and Suzanne Mackenzie of Carleton University on behalf of the Women and Geography Group of the CAG. The studies were conducted in the autumn terms of the academic years 1984-85 and 1988-89. Questionnaires were mailed to the chairs of all geography departments in universities listed in the Canadian Association of Geographers Directories. In 1984-85, of 43 universities listed, responses were received from 35, and verbal response on numbers of faculty only from one, a response rate of 84 percent. In 1988-89, of 43 universities, data were received from 40, a response rate of 93 percent.⁹ In addition, Audrey Kobayashi of McGill University and

Table 2
Canadian University Departments with
No Women or No Tenured Women on Faculty^a
1978-79, 1984-85, 1988-89

| Universities with: | Number of Departments ^b | | | Percent of Total Departments | | |
|-----------------------------|------------------------------------|---------|---------|------------------------------|---------|---------|
| | 1978-79 | 1984-85 | 1988-89 | 1978-79 | 1984-85 | 1988-89 |
| No women on faculty | 16 | 12 | 9 | 41.0 | 34.3 | 22.5 |
| No tenured women on faculty | 27 | 22 | 19 | 69.2 | 62.9 | 47.5 |

Notes:

- a) Data for 1978-79 from Momson, *op. cit.*; for 1984-85 and 1988-89 from questionnaire survey.
b) 1978-79 N=39, 1984-85 N=36, 1988-89 N=40

Suzanne Mackenzie analyzed CAG membership data.¹⁰

Because of omissions in the two surveys, comparisons of 1978-79, 1984-85 and 1988-89 provide relative information only, and can not be seen as indicating levels of absolute change. The data in Table 1 indicate, however, that despite widespread changes in the discipline itself, and in the sex ratios of student populations overall, the number of women teaching in Canadian university geography departments has not increased significantly over the ten-year period be-

tween 1978-79 and 1988-89. While in 1978-79, there were 37 women faculty in responding universities, representing 6.2 percent of total geography faculty, by 1984-85, this number had grown by one. However, by 1988-89, the number of women faculty had risen to 56, a 47 percent rate of increase. But this growth is not yet cause for unqualified congratulation, as women still make up less than 10 percent of the Canadian geographical professoriate. As in 1984-85, the proportion of women is lowest in universities with doctoral programmes.

The proportion of women in geography

is lower than for all university disciplines combined. In 1988-89, the same universities who employed 9.0 percent women faculty in geography employed 18.9 percent women faculty in all disciplines combined (Table 1a). However, geography's rate of growth is faster than that of all disciplines in Canadian universities. There has also been a decline in the numbers of Canadian university geography departments with no women on faculty, from 41 percent in 1978-79 to 22.5 percent in 1988-89. While ten years ago, 69.2 percent of departments had no tenured women on faculty, this group is now in a minority, albeit a slim one (47.5 percent) (Table 2).

Over the past ten years there has been some positive change in the relative academic status of faculty women in Canadian geography departments (Table 3). There has been a steady increase in the number of women attaining associate or full professor status, and a large growth in numbers of women assistant professors. By 1988-89, only 25 percent of women, as opposed to a majority ten years ago, are in lecturer/instructor positions.¹¹ This may indicate that a growing number of women have moved into assistant or associate rank. It may also indicate a declining number of people being hired at the lecturer/sessional level within the university system overall.¹²

There have been consistent regional differences in proportions of women faculty over the ten-year period (Table 4). In 1988-89, proportions of women faculty

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Table 3
Academic Status of Women in Canadian University Geography Departments
1978-79, 1984-85 and 1988-89^a

| Status | 1978-1979 | | 1984-1985 | | 1988-1989 | |
|--------------------------------------|-----------------|--------------------------|-----------------|--------------------------|-----------------|--------------------------|
| | Number of Women | % of Total Women Faculty | Number of Women | % of Total Women Faculty | Number of Women | % of Total Women Faculty |
| Full Professor | 3 | 7.1 | 1 | 2.6 | 1 | 1.8 |
| Associate Professor | 7 | 16.7 | 9 | 23.7 | 12 | 21.4 |
| Assistant Professor | 6 | 14.3 | 10 | 26.3 | 25 | 44.6 |
| Other - Tenured Faculty ^b | - | - | 4 | 10.5 | 4 | 7.1 |
| Lecturer/Instructors ^c | 26 | 61.9 | 14 | 36.8 | 14 | 25.0 |
| Total | 42 | 100.0 | 38 | 100.0 | 56 | 100.0 |

Notes:

- a) For 1978-79, data from Momson *op. cit.* Table 3; for 1984-85 and 1988-89 from questionnaire surveys.
b) For 1984-85, includes 3 from the Université du Québec system, (2 professeurs régulières and 1 directrice dept.) and 1 tenured faculty member from Ryerson. For 1988-89, includes 3 from the Université du Québec system, and 1 from Ryerson.
c) Includes faculty members listed as sessional lecturers, senior instructors, instructors, sessional instructors, senior demonstrators, adjuncts, auxiliary professors, faculty fellows/lecturers, professeurs invités. Excludes charges de cours, lab and library assistants, map librarians, administrative assistants.

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vary from a low of 6.5 percent of all faculty in the Prairies to a high of 11.4 percent in the Atlantic Region. Ontario, with the largest number of university geography departments, continues to employ the largest number of women, 52 percent of women teaching in Canadian geography departments are doing so in Ontario universities. Once again, there are discrepancies between geography and other disciplines, with geographers showing lower proportions of women faculty for all

Table 3 a
Academic Status of Full-Time Women in Canadian Universities, All Disciplines, 1985-86

| | % of Total Women Faculty |
|--------------------------------|--------------------------|
| Full Professor | 6.06 |
| Associate Professor | 15.74 |
| Assistant Professor | 28.94 |
| Rank Below Assistant Professor | 44.54 |
| Other | 38.17 |

Note:
Calculated from Statistics Canada data, Catalogue 81-241. 1985-86 are the most recent data available.

Table 4
Women Faculty in Canadian University Departments of Geography, by Region
1978-79, 1984-85, 1988-89

| Region | Number of Women Faculty ^a | | | Women as of Total Faculty in Region ^b | | | Women in Region as % of Women Faculty in Canada | | |
|-------------------------------|--------------------------------------|---------|---------|--|---------|---------|---|---------|---------|
| | 1978-79 | 1984-85 | 1988-89 | 1978-79 | 1984-85 | 1988-89 | 1978-79 | 1984-85 | 1988-89 |
| British Columbia ^c | 2 | 1 | 6 | 3.3 | 1.9 | 9.8 | 5.4 | 2.6 | 10.7 |
| Prairies ^d | 3 | 7 | 7 | 2.7 | 5.8 | 6.5 | 8.1 | 18.4 | 12.5 |
| Ontario ^e | 21 | 19 | 29 | 7.3 | 6.4 | 9.9 | 56.8 | 50.0 | 51.8 |
| Quebec ^f | 8 | 9 | 10 | 8.2 | 9.2 | 8.6 | 21.6 | 23.7 | 17.9 |
| Atlantic ^g | 3 | 2 | 4 | 10.3 | 6.1 | 11.4 | 8.1 | 5.3 | 7.1 |

Notes:

- a) For 1978-79, figures are from Momson, *op. cit.*, Table 4. For 1984-85 and 1988-89 figures are from questionnaire surveys. For 1984-85, figures for British Columbia include 2 of 3 universities listed in the *Canadian Association of Geographers Directory* for 1984, excluding Victoria. For the Prairies, figures refer to 8 of the 9 universities (excluding Athabasca). For Ontario, figures include 16 of 16 universities. For Quebec, figures include 7 of 11 universities (excluding Laval, Université du Québec en Abitibi-Témiscamingue, Québec à Rimouski, and Québec à Trois-Rivières). For the Atlantic region, figures refer to 3 of 4 universities (excluding Moncton). For 1988-89, figures for British Columbia include 3 of 3 degree-granting institutions listed; for the Prairies, 7 of 9 (excluding Athabasca and Brandon); for Ontario, 16 of 16; for Quebec, 8 of 9 (excluding Université du Québec en Abitibi-Témiscamingue); for the Atlantic, 4 of 4.
- b) For 1978, figures for total faculty members from Momson, *op. cit.*; for 1984-85 from Barr *op. cit.*; for 1988-89 from Royal Canadian Geographical Society, *op. cit.*
- c) 1978-79 N=3, 1984-85 N=2, 1988-89 N=3
- d) 1978-79 N=9, 1984-85 N=8, 1988-89 N=7
- e) 1978-79 N=16, 1984-85 N=16, 1988-89 N=16
- f) 1978-79 N=8, 1984-85 N=7, 1988-89 N=8
- g) 1978-79 N=3, 1984-85 N=3, 1988-89 N=4

regions for which comparable figures are available (Table 4a).

The relatively small number and growth rate of women faculty in geography is, like other disciplines, incongruent with the numbers and growth rate of women students. While women do not constitute a majority, they did make up over a third (36.4 percent) of geography bachelor degrees in 1987 (Table 6). However, the number of women undergraduates receiving geography degrees is growing at a much slower rate than in other disciplines, and in fact the number of undergraduates receiving geography degrees declined for both women and men over the period 1980-87. While the rate of change for men exceeds that for all disciplines between 1984 and 1987, the rate of change for women is much lower. This may indicate that geography is attracting fewer of the women who make up the largest proportion of the increase in overall undergraduate enrollment. Among graduate students, women form a smaller percentage than in all disciplines combined, but did receive 33.7 percent of geography Masters degrees and 22.6 percent of Ph.D. degrees conferred in 1987 (Table 6a). While numbers of stu-

dents receiving graduate degrees in geography are relatively small, Table 6a does indicate that rates of change for women between 1977 and 1987 are increasing much faster than for men, who in fact are receiving fewer geography graduate degrees than ten years ago. Women are thus forming a larger absolute and relative proportion of geographers with graduate qualifications.

While the surveys did not provide information on the relative numbers of male and female graduate and undergraduate students, we do know that in 1988-89, there were 72 female Ph.D. students and 245 Masters students in responding departments (Table 5), compared to 37 female Ph.D. students and 248 Masters students in Momson's study. Not only has the number of women in Ph.D. program-

Table 4a
Women as a Percent of All Faculty in Canadian Universities by Region, All Disciplines and Geography^a
1984-85, 1988-89

| | Women as a % of All Faculty in Region | | | |
|------------------|---------------------------------------|-----------|-----------------|-----------|
| | 1984-85 | | 1988-89 | |
| | All Disciplines | Geography | All Disciplines | Geography |
| British Columbia | 17.5 | 1.9 | 18.2 | 9.8 |
| Prairies | 15.5 | 5.8 | 17.9 | 6.5 |
| Ontario | 15.2 | 6.4 | 18.6 | 9.9 |
| Quebec | N.A. | 9.2 | N.A. | 8.6 |
| Atlantic | 17.9 | 6.1 | 20.4 | 11.4 |

Source: For geography, questionnaire surveys; for all disciplines, Statistics Canada data, Catalogue 81-258.

Note:

Universities include only those which responded to the questionnaire surveys for 1984-85 or 1988-89. Data for Quebec unavailable.

Table 5
Stated Academic Interests of Women Faculty and Graduate Students
in Canadian University Geography Departments, 1988-89

| | Faculty | Ph.D Students | Masters Students | Total |
|---------------------------------------|-----------|---------------|------------------|------------|
| Physical Geography | | | | |
| Physical | 2 | - | 2 | 4 |
| Biogeography | 3 | 4 | 17 | 24 |
| Climatology | 1 | 3 | 10 | 14 |
| Geomorphology | 6 | 7 | 32 | 45 |
| Hydrology | - | - | 7 | 7 |
| Meteorology | - | 1 | - | 1 |
| Soils | - | 3 | 4 | 7 |
| Physical Geography Sub-Total | 12 | 18 | 72 | 102 |
| Human Geography | | | | |
| Agricultural/Rural | 4 | 1 | 3 | 8 |
| Cultural/Historical | 2 | 11 | 12 | 25 |
| Demography/Population | 3 | - | 4 | 7 |
| Economic | 2 | 2 | 7 | 11 |
| International Development/Third World | 4 | 2 | 6 | 12 |
| Medical | 1 | 3 | 9 | 13 |
| Northern Development | - | - | 2 | 2 |
| Planning | - | - | 20 (UofT) | 20 |
| Political | - | 1 | 1 | 2 |
| Recreation/Tourism | 1 | 1 | 9 | 11 |
| Regional/Industrial Development | 4 | 5 | 7 | 16 |
| Social | - | 4 | 6 | 10 |
| Urban | 12 | 10 | 22 | 44 |
| Human Geography Sub-Total | 33 | 40 | 108 | 181 |
| Resources/Ecology/Environment | 3 | 5 | 23 | 31 |
| Techniques/Philosophy | | | | |
| • Cartography | 2 | - | 2 | 4 |
| • Computer Assisted Cartography | - | 1 | 6 | 7 |
| GIS/GIP | - | 2 | 2 | 4 |
| History/Philosophy | - | 2 | 3 | 5 |
| Remote Sensing | 1 | 2 | 12 | 15 |
| Statistics Modelling | - | 2 | 2 | 4 |
| Techniques Sub-Total | 3 | 9 | 27 | 39 |
| TOTAL | 51 | 72 | 230 | 353 |
| Interest not stated | 5 | - | 15 | 20 |
| GRAND TOTAL | 56 | 72 | 242 | 373 |

Note:

Sources for data: questionnaire surveys. Although they are mutually exclusive, there is some obvious overlap in the categories. Information provided on the survey varied in terms of specificity (e.g. some said 'physical' or 'cultural/historical' while others indicated specific research interests).

mes increased by 95 percent since 1978-79, but the number of women enrolled in Ph.D. programmes in 1988-89 exceeds the number of women in all academic jobs in all Canadian university geography departments by 29 percent (Table 5a). This raises questions about the career prospects of these students. CAG data indicate that while the proportion of women with Ph.D.s in non-academic jobs is increasing slightly, the largest proportion of women with Ph.D.s are still in academic careers (Table 9). Geography departments can perhaps expect that a growing proportion of applicants for entry-level jobs will be women.

Table 5 also indicates that the stated academic interests of female graduate students as a group tend to reflect the interests of established female faculty

members. This gives us some indication of the way in which feminisation may affect the content of the discipline and the balance among specialities. The stated interests of women faculty and graduate students show that the majority were working in the area of human geography, followed by physical geography, environmental and techniques/philosophy areas. It is however, interesting to note some shifts in stated faculty and student interests over the four years since 1984-85. There has been a marked rise in numbers of women Masters students in physical geography over this period, a rise not yet reflected in rising numbers of Ph.D. students and faculty in physical geography. This may be due to a time-lag, but it is a trend that should be monitored. In contrast, while numbers and proportions of

women faculty and students in human geography are growing, the student rates are increasing more slowly than those for faculty, and more slowly than in those disciplines in the social sciences which have larger proportions of women faculty.

The analysis of CAG membership both confirms some of these findings and qualifies others.¹³ Table 7 indicates that the total number of women members in the CAG has increased since 1978, and that the number of women is increasing more rapidly than is the number of men. There are still only a few areas, however, in which women are well represented, and a number of areas where there are very few women. As of May, 1989, there were 396 female members of the CAG, making up 27 percent of the total membership of 1476. This is an increase of 201 women, or 103 percent over the 1978 female membership. Over the same ten-year period, overall membership has increased by only 203 members, or 16 percent, so the proportionately larger increase in female membership can be seen as quite significant.

Table 8 provides a breakdown of occupational categories of CAG members by sex for 1989. In relation to their total proportion within the CAG, women are over-represented in college teaching, administration, government, business and industry, as well as in the student category. Although university teaching accounts for the largest group of women within the CAG, it is also the area where women are most underrepresented, a fact which should come as no surprise given the survey results discussed above. Women make up only 13 percent of the total of the 503 university teachers who form the largest single occupational category in the CAG. One of the implications of this fact may be that the female constituency within the association is very different from the male constituency, which is overwhelmingly dominated by those in university teaching. This does not necessarily mean that the interests of female members of the organization are not being served, but it does indicate a possibility that women may feel that this is the case and so be discouraged from fully participating in CAG activities. This raises for the association some of the questions that discrepancy raises for the university and the discipline as a whole.

An encouraging sign that the discrepancy may be changing is the fact that whereas Momsen's study showed that in 1978, 21 or 17.8 percent of the 118 women who were full or family members of the CAG held doctorates, the figure in 1989 (as far as can be determined from CAG records) has doubled to 42 or 21 percent. A breakdown of female doctorate holders is provided in Table 9. Whereas the number of tenured university professors remains small at 13, this is

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three more than the 10 reported in the 1978-79 study.

CAG membership figures suggest, however, that enrollment and interest by women students, to the extent these can be assessed by CAG membership, is increasing (Table 7). Although student membership as a whole has decreased slightly in comparison to total membership, the proportion of female student membership has doubled from 1978 to 1989. The next few years could see an important shift in the overall balance as these students become professionals.

The CAG figures provide some indication, albeit a negative one, of the answer to the question of what does happen to female geography students. That these women have not been going on to become professional members of the CAG is evident from the lower proportion of women who hold regular CAG memberships (Table 7). In 1978, women made up 15 percent of the membership, but only 9 percent of regular and family members. In 1989, when the percentage of women has increased to 27 percent, those who are regular members are still only 13 percent. It is difficult to assess whether this is a lag effect, and the swelling ranks of women in the student and complimentary categories will go on to become regular members of the association, and therefore fully-fledged professional geographers, or whether the numbers indicate only an increase in the turnover of female students, whose memberships will lapse along with their complimentary or student status. This is one of the most serious issues confronting the association at the present time.

The unequal feminisation of geography — the discrepancy between numbers of faculty and numbers of students — is, in fact, both a problem and a challenge. We are, at the very least, educating a body of students whose empirical observation of their teachers will lead them to different conclusions depending upon their sex. The realistic expectations and aspirations of male and female students must be different, especially if they are contemplating an academic career or attempting to visualize or plan their own future on the basis of what they see going on among the group of professionals with whom they have most contact in their educational years — university faculty.

The discrepancy may be 'explained' by arguing that the entry of large numbers of women into higher education is recent, and their opportunities to aspire to graduate degrees and achieve academic careers even more recent. But it appears unlikely, given the evidence in other sectors of the economy, that this is simply temporal lag and that women will eventually 'percolate up' within the university sector. Just as women's entry into higher

Table 5a
Research Interests of Women Faculty and Graduate Students as Percent of Total Women with that Interest^a
1984-85, 1988-89
(Figures in brackets indicate absolute numbers)

| | Faculty | | Ph.D Students | | Masters Students | | Total | |
|--------------------------------|---------------|----------------------------|---------------|---------------|------------------|-----------------------------|----------------|----------------|
| | 1984-85 | 1988-89 | 1984-85 | 1988-89 | 1984-85 | 1988-89 | 1984-85 | 1988-89 |
| Physical Geography | 28.9 (11) | 23.5 (12) | 29.4 (15) | 25 (18) | 23.4 (48) | 31.3 (72) | 25.3 (74) | 28.9 (102) |
| Human Geography | 58.0 (22) | 64.7 (33) | 60.8 (31) | 55.6 (40) | 52.2 (107) | 47.0 (108) | 54.4 (160) | 51.3 (181) |
| Resources Ecology/ Environment | 5.3 (2) | 5.9 (3) | 3.9 (2) | 6.9 (5) | 12.2 (25) | 10.0 (23) | 10.0 (29) | 8.8 (31) |
| Techniques Philosophy | 7.9 (3) | 5.9 (3) | 5.9 (3) | 12.5 (9) | 12.2 (25) | 11.7 (27) | 10.5 (31) | 11.0 (39) |
| Total | 100.0 (38) | 100.0 (51) ^b | 100.0 (51) | 100.0 (72) | 100.0 (205) | 100.0 (230) ^c | 100.0 (294) | 100.0 (353) |

Notes:

- a) Sources for data: questionnaire surveys. See notes to Table 5.
- b) Excludes 5 faculty for whom interests were not specified.
- c) Excludes 15 Masters Students for whom interests were not specified.

Table 6
Bachelors Degrees Granted in Canada: All Disciplines and Geography
1980, 1984, 1987

| | Men | Women | Women as % of Total |
|------------------------|--------|--------|---------------------|
| All Disciplines | | | |
| 1980 | 43576 | 42805 | 49.6 |
| 1984 | 45344 | 47472 | 51.2 |
| 1987 | 48406 | 54664 | 53.0 |
| Rate of Change | | | |
| 1980-1987 | 11.1% | 27.8% | |
| 1984-1987 | 6.8% | 15.2% | |
| Geography | | | |
| 1980 | 1186 | 691 | 36.8 |
| 1984 | 963 | 580 | 37.6 |
| 1987 | 1054 | 602 | 36.4 |
| Rate of change | | | |
| 1980-1987 | -11.1% | -12.9% | |
| 1984-1987 | 9.5% | 3.8% | |

Note:

Calculated from Statistics Canada, Catalogue 81-204, *University Enrollment and Degrees*. Data refers to calendar year. 1980 are the earliest complete data available and 1987 data are the most recent available.

education was the result of concerted campaigns, so changing their status within higher education will require conscious commitment and informed planning. There is widespread debate on how to achieve this goal. But whatever strategies are accepted, and however they are

implemented, they will be operating from an environment created by this discrepancy. It is an environment which requires our attention, not only in the interests of 'fairness' or pragmatism, but in order to ensure that we have sufficient resources, and sufficient imagination to continue to

explore other environments which make up the content of our discipline.

Endnotes

1. See, for example: Breslauer 1984; Briskin 1989; Dagg and Thompson 1988; Riseborough 1985; Symons and Page 1984;

Vickers and Adam 1977.

2. For example, in Canada between 1977 and 1978, the number of bachelors degrees granted to women increased by 31.2 percent compared with 5.9 percent for men. In the same period, women gaining Masters degrees increased by 85.8 percent and women gaining Doctorates by 123.2 percent compared to 3.3 percent and 21.9 percent for men. Over the period 1970 to 1987, all degrees, diplomas and certificates granted to women increased by 159.6 percent while the numbers granted to men increased by 38.5 percent (Statistics Canada, *University Enrollment and Degrees Ottawa: Statistics Canada, Catalogue 81-204*).
3. For example, in 1987 in Canada, women gained 45.1 percent of Masters degrees and 28.6 percent of Doctorates as opposed to a majority of Bachelors degrees (*ibid*).
4. For example, in 1987-88, women were 61.5 percent of all part-time students in Canada, a category which had increased by 88.1 percent since 1970-71 in contrast to an increase of 57.1 percent in numbers

Table 6a
Graduate Degrees Granted in Canada: All Disciplines and Geography
1977, 1982, 1987

| | Masters Degrees | | | Doctoral Degrees | | |
|--------------------------|-----------------|-------|---------------------|------------------|--------|---------------------|
| | Men | Women | Women as % of Total | Men | Women | Women as % of Total |
| All Disciplines | | | | | | |
| 1977 | 8498 | 3877 | 31.3 | 1396 | 306 | 18.0 |
| 1982 | 7803 | 5307 | 40.5 | 1290 | 425 | 24.8 |
| 1987 | 8776 | 7202 | 45.1 | 1702 | 682 | 28.6 |
| Rate of change 1977-1987 | 3.3% | 85.8% | | 21.9% | 122.9% | |
| Geography | | | | | | |
| 1977 | 145 | 35 | 19.4 | 28 | 2 | 6.7 |
| 1982 | 117 | 46 | 28.2 | 23 | 3 | 11.5 |
| 1987 | 122 | 62 | 33.7 | 24 | 7 | 22.6 |
| Rate of change 1977-1987 | -15.9% | 77.1% | | -14.3% | 250% | |

Note:

Calculated from Statistics Canada, Catalogue 81-204, *University Enrollment and Degrees*. Data refers to calendar years. 1987 data are the most recent available.

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Table 7
Male and Female CAG Members, by Membership Category
1978, 1985, 1989

| Category of Membership | Male Members | | | | | | Female Members | | | | | |
|------------------------|--------------|---------------------|------|---------------------|------|---------------------|----------------|---------------------|------|---------------------|------|---------------------|
| | 1978 | | 1985 | | 1989 | | 1978 | | 1985 | | 1989 | |
| | No. | % of total category | No. | % of total category | No. | % of total category | No. | % of total category | No. | % of total category | No. | % of total category |
| Life | 7 | 100 | 5 | 100 | 5 | 100 | 0 | 0 | 0 | 0 | 0 | 0 |
| Family | 23 | 52.3 | 33 | 50.0 | 39 | 48.8 | 21 | 47.7 | 33 | 50.0 | 41 | 51.2 |
| Regular | 745 | 88.5 | 799 | 84.2 | 718 | 82.3 | 97 | 11.5 | 150 | 15.4 | 154 | 17.7 |
| Student | 303 | 79.7 | 220 | 66.7 | 238 | 59.1 | 77 | 20.3 | 110 | 33.3 | 165 | 40.9 |
| Complimentary | N/A | N/A | 51 | 52.6 | 44 | 65.7 | N/A | N/A | 46 | 47.4 | 23 | 34.3 |
| Retired | N/A | N/A | N/A | N/A | 49 | 90.7 | N/A | N/A | N/A | N/A | 5 | 9.2 |
| Corporate | N/A | N/A | N/A | N/A | 27 | 77.1 | N/A | N/A | N/A | N/A | 8 | 22.9 |
| Total | 1078 | 84.7 | 1108 | 76.6 | 1080 | 75.9 | 195 | 15.3 | 339 | 23.4 | 396 | 26.8 |

Note:

Figures for 1978 from Momson, *op. cit*. Figures for 1985 calculated from CAG membership data, March 1985; for 1986 from CAG membership data, May 1989.

Table 8
CAG Members by Occupational Category
1989

| Occupational Category | Male | | Female | | Total | |
|--------------------------|------|-----------------------------|--------|-----------------------------|-------|--|
| | No. | % of membership in category | No. | % of membership in category | No. | % of total membership in that category |
| Teaching | | | | | | |
| University | 451 | 89.7 | 52 | 10.3 | 503 | 13.1 |
| College | 13 | 54.2 | 11 | 45.8 | 24 | 2.7 |
| Primary-Secondary | 22 | 73.3 | 8 | 26.6 | 30 | 2.0 |
| Administration | 3 | 60.0 | 2 | 40.0 | 5 | 0.5 |
| Other | 4 | 57.1 | 3 | 42.9 | 7 | 0.7 |
| Government | | | | | | |
| Federal | 57 | 68.7 | 26 | 31.3 | 83 | 6.5 |
| Provincial | 35 | 59.3 | 24 | 40.7 | 59 | 6.0 |
| Local-Regional | 17 | 63.0 | 10 | 37.0 | 27 | 2.5 |
| Business/Industry | | | | | | |
| Students | 71 | 64.5 | 39 | 35.5 | 110 | 9.8 |
| Retired | 238 | 59.1 | 165 | 40.9 | 403 | 41.7 |
| Other | 44 | 88.0 | 6 | 12.0 | 50 | 1.5 |
| Other | 122 | 70.9 | 50 | 29.0 | 172 | 12.6 |
| Total | 1080 | | 396 | | 1476 | |

Note:

Calculated from CAG Membership data, May 1989.

Status of Women Geographers
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of full-time students. Part-time enrolment at the graduate level is also increasing faster than full-time enrolment. Among graduate students, the rate of growth for part-time enrolment was 157 percent between 1970-71 and 1987-88, in contrast to 74 percent for full-time students (*ibid.*; also see Belanger *et al.* 1980).

5. On the question of new content and social relations see, for example: Aisenberg and Harrington 1988; Dagg and Thompson 1988; Harding 1987; Tomm and Hamilton 1988; Vickers 1984.
6. In any comparative analysis, geography occupies a somewhat unique situation, due to the fact that it is a social science, a natural science, and an environmental science, the last drawing from all areas of scholarship. The number of women faculty and students in social sciences as a whole tends to be higher than in natural science as a whole. For example, in 1987-88 in Canada, women were 16.4 percent of faculty in Social Science and only 5.7 percent in Math/Physical Sciences. Among graduate students in Social Sciences, women were 41.6 percent of Masters and 39.5 percent of Ph.D. students; in Math/Physical Sciences they were 23.4 percent of Masters students and 13 percent of Ph.Ds. This picture is complicated however, by the fact that in some other areas of natural science women constitute a larger proportion. In Agriculture/Biology, for example, women constituted 16.7 percent of faculty, 45.6 percent of Masters students and 28.0 percent of Ph.D students (Statistics Canada, *University Enrollment and Degrees Ottawa: Statistics Canada, Catalogue 81-204*). The way in which Statistics Canada collects and presents data precludes a more detailed comparison, for example, with other earth sciences or environmental sciences. Nor do the data distinguish between human, physical and environmental interests in geography. Although the picture is not clear cut, some comparison between geography and all other university disciplines combined is possible and meaningful. Also see Tables 5 and 5a for a breakdown of academic interests of graduate and faculty women in Canadian geography.
7. Momsen (1980:177)
8. Janet Momsen did not receive responses from Université du Québec à Montréal and Université du Québec à Rimouski.
9. In 1984-85, responses were not received from Athabasca, Laval, Moncton, Université du Québec en Abitibi-Témiscamingue, Université du Québec à Rimouski, Université du Québec à Trois-Rivières, and Victoria. In 1988-89, responses were not received from Athabasca, Brandon and Université du Québec en Abitibi-Témiscamingue.
10. Some results of Kobayashi's study are reported in Kobayashi (1985).
11. It is important to note that while professorial ranks have fairly consistent, or at least equivalent meanings across Canada, the lecturer/instructor/sessional category varies widely from university to university. The questionnaire responses and answers to requests for clarification indicate

Table 9
Women CAG Members with Ph.D Degrees by Occupational Category
1985, 1989

| | 1985 | 1989 |
|--|-----------|-----------|
| Teaching | | |
| Canadian Universities - tenured | 14 | 13 |
| Canadian Universities - tenure track | 7 | 8 |
| Canadian Universities - limited contract | 5 | 1 |
| Canadian Universities - non-geography | 2 | 2 |
| Canadian Colleges | - | 1 |
| Post-doctoral research | 2 | - |
| Universities Outside Canada | 9 | 3 |
| Government | 3 | 5 |
| Business | 1 | 5 |
| No data | 3 | 4 |
| Total | 46 | 42 |

Note:

Calculated from CAG Membership data

however that in general, lecturer indicates a rank below assistant professor, often a faculty member who has not yet completed her/his Ph.D., and implies the possibility of promotion to assistant professor. Instructor is more often a career position, where the faculty member, regardless of qualification, will have different duties, often more teaching and fewer research responsibilities, and will not generally expect promotion to assistant rank. Sessional category includes full time faculty, of any rank, on limited term contracts, and also faculty hired on a course by course basis. This overall category also includes adjuncts, who can be 'continuing' but generally non-tenured faculty teaching one or more course, or 'external experts' who act as resource people for departments.

12. There is evidence for the latter in the fact that for all Canadian universities in all disciplines, the number of sessional/lecturer positions showed an absolute decline of 43 over the period 1978-79 to 1983-84, while faculty numbers as a whole grew by 2050 in the same period (Statistics Canada, Catalogue 81-241).
13. Figures from the CAG membership lists will not correspond to figures from the questionnaire survey. This is due to omissions in data from both sources, and to the fact that the CAG includes members from outside Canada, and does not include all professionals in Canadian universities.

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