

13 Negative and positive departmental cultures

Ultimately departmental reform is the means to overcome the exclusion of accomplished women from full membership in the Republic of Science. In our most recent study, we were interested in identifying the characteristics of those graduate departments which showed the most and least improvement in the recruitment of women and conferring of the Ph.D., based on National Research Council (NRC) statistics from 1974 to 1990. In electrical engineering, the number was too low to generate meaningful data before 1977, and computer science had not been separated as a distinct discipline until 1978. In light of this, the time periods considered for these two disciplines were 1978–1990 and 1977–1990 respectively. What emerged was a range of departmental cultures. At that end of the spectrum where numbers of American women graduate students and/or degrees conferred were lowest, was what we call the 'Instrumental Department'. While most departments that we studied reflect the negative attitudes toward women in science, we also identified several 'Relational Departments' where positive cultural shifts are occurring.

THE INSTRUMENTAL DEPARTMENT

Not surprisingly, morale was lowest and isolation of women highest in instrumental departments. Many had no programs for women students and if they did, fear of stigma around joining was high. As a tenured woman preparing to leave for industry described the situation, 'How many faculty hires in the last 10 years? Zero. How many women interviewed? Zero. How many women students are supported? There

was one several years ago. Maybe one now, or is it zero? The numbers are extremely grim.' It was not unusual for there to be only one woman faculty member present in the most depressed environments. As the lone woman professor, waiting for tenure for seven years in one such department, said, 'Who do I talk to? I feel lonely. I've always felt like that . . . I feel good seeing my picture in the front of the building, but there is only one [female].' Although numbers of women on faculty in all departments only rarely reached parity with males, instrumental departments had especially low levels of females or even none at all.

The severely instrumental department reflects a power structure which resides in the hands of a much older group of eminent male scientists who 'are resting on their Nobel Prizes . . . the imperial clan is always watching.' In the most hostile departments, generational attitudes were cited rather than that of gender. 'One of my biggest problems here is gender bias from the older faculty,' said one female professor. 'I never have worries like that from people of my own age.' Anxiety and feelings of powerlessness are very high and there is a sense of not 'ever knowing for sure what's in the back of their minds.' Nevertheless, the strong presence of instrumental attitudes among an older male generation of scientists and their relative lack among the younger generation augurs a significant change, favorable to female scientists.

Earlier studies of personality correlates and emotional characteristics of mature, distinguished scientists using projective tests (Cattell and Drevdahl, 1973; Eiduson, 1973; McClelland, 1973) shed some light on the experience of women faculty members in those least hospitable departments. Briefly, scientists were found to be more withdrawn than the general population, emotionally constricted, and controlling. As a group they avoided or were 'disturbed by complex human emotions' and were 'intensely' identified with that which was masculine. Lastly, the proving of oneself and the construction of identity through scientific work served to ward off sociability needs. Regardless of discipline, the overwhelming majority of departments in our study in some way reflected aspects of this model.

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THE RELATIONAL DEPARTMENT

We have also identified a few 'Relational Departments' with a collegial and cooperative atmosphere that provide the safety to take the risks necessary for innovative work and the collaborations necessary for networking. Graduate and faculty women have created a grapevine to pass on information about departments with a relational culture that are often highly ranked but not at the very top of their field. Since some of the most talented researchers are women and men who want to follow a non-traditional path, departmental reform can be an academic mobility strategy, as well. A number of tenured women faculty who had struggled for recognition and status in prestigious graduate schools and post-doctoral programs that were highly competitive and hierarchal also reported accepting faculty appointments in more relational departments, hoping to repair the isolation and stress they had previously encountered. As advisors to graduate students, other successful women are directing their students to such departments as well.

Typically, departmental culture changes when an individual male, with a key role in the power structure, acquires feminist values. Such a personal transformation can translate into organizational change, especially when colleagues experience similar life changes. Women students and faculty members report being attracted to relational departments by interpersonal interactions during interviews, a sense of personal concern by the faculty committee, and an impression of 'happiness' and well-being among members of the department. Thus, relatedness, emotional closeness, 'the expectation of mutuality and the sharing of experience leading to a . . . sense of well being' (Kaplan and Surrey, 1984) are not only intrinsic criteria for choosing the department, but also describe elements of female developmental theory of the 'self-in-relation'. Most significantly, these milieus are relatively free of the enervating stress associated with the anxiety and defensive maneuvers required to be accepted and acceptable in highly instrumental departments.

In an instrumental department, interpersonal interactions are

minimal and open communication avoided; the opposite condition holds in a relational department. Reflecting on her past experiences before joining a more women-inclusive faculty, a biologist felt that she 'had been in all-male environments long enough to know that it was important to minimize their anxiety. I became very good at only talking science and calming them down. It was energy consuming.' By contrast, a female faculty member in a relational department reported '... a collective understanding. When I speak to [male faculty] I have the feeling I'm communicating with them as people. There is a recognition of the value to be had from cooperation. The emergence of individual empires is discouraged. A strong belief here is to preserve an environment which is as cooperative as is possible.' Following the model of relational research groups, there is an active commitment to sustain this milieu through the careful hiring of like-minded academic staff.

At a university in which both the chair of the department and an upper-echelon administrator were minority group members, women felt that their personal experience with discrimination encouraged empathic dialogue regarding women's problems. Moreover, this leadership diminished the power of the old boy network and supported affirmative action hires. 'Those people in their lives had really experienced discrimination and it changed how they behaved and made an enormous difference to us. We didn't always agree with [the chair], but we always felt that we were having the same conversation. This guy understood what we were talking about. That made a huge difference to this department because he never wanted to go out and hire honchos. He always wanted to hire young people and build them up. It is an open search.' The chair functions as a representative in relational departments, discussing issues with all faculty members before taking action.

Through personal contacts at scientific meetings and reports passed over e-mail lists, women are increasingly aware of 'good' and 'bad' departments and direct their applications accordingly. While the science being done in the department or by a faculty member often initiated a candidate's interest in the school, the emotional

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gratification of the interview process, together with a preference for a collegial research environment, influenced the candidate's final decision. Thus, selecting this particular department was a means of recapturing a significant professional and personal growth experience that had promoted self-confidence and emergence of a scientific self-identity. In the department mentioned above, a female academic model based on interpersonal relationships, affiliation, and nurturance had become accepted as legitimate and had even become the departmental norm. This was in strong contrast to another research site, where women's expression of a need for these characteristics in the laboratory environment was derided as a desire for dependence and emotionality by the adherents of the patriarchal system that was in place.

The context into which reforms are introduced is critical to their acceptance; the culture and organization of departments plays an important role in whether reforms will be accepted or rejected. A professor who can mobilize a strong network on behalf of equality can transform a department. On one campus, the women all agreed that the ethos of a physics department had been changed through such an individual's efforts. As a female graduate student put it, 'My experience is that one person in an influential position can make a huge amount of difference.' This individual's goal had been to convey confidence and to help every student get through. According to a female graduate student, this individual was '... a tremendous influence on the whole tone of the department which made the place actually wonderful and people told me about this department. I never realized how much it was tied up with this one person.' On the other hand, grass-roots efforts can be undermined by 'old boys' if their power is entrenched and their numbers large. In another department, the chair 'created ... [a positive] atmosphere here. He provided a strong presence. The conflict was with the people over 50: the old Guard. [The chair] finally resigned.' Strong networks can resist as well as assist change; those in power in a department can legitimize or delegitimize female affiliation.

ALTERNATIVE SCENARIOS

We identified several different scenarios of female faculty experience depending upon fit or lack of fit with departmental structure. These included female scientists who were attempting to follow (1) a relational style in an instrumental department, (2) an instrumental style in a relational department, and (3) an instrumental style in an instrumental department. There is a tripartite model of tension in which one of three scenarios is possible in any given department depending on its social construction. Each model describes an internal dilemma with which women faculty may struggle even when there is an apparent fit between an individual and their department.

Relational advisor/instrumental department

The tension in this situation is typically between a younger female faculty member who advocates on behalf of her female students and a senior woman faculty member who embraces the intensely competitive instrumental style. Sometimes relationships can be established far more easily with younger male faculty 'who share the same values.' Although she understands the history behind their behavior, this tenure track biologist describes her discomfort with older, pre-eminent women in her department who reflect the male model: 'I always end up not liking a lot of the women who make it to this level of science, enough to really not want to hang around with them. You just have to go through a lot of shit sometimes to really get there. Sometimes that means that you don't really care about anything else or anyone else. Sometimes that means that you face taking on the persona of a male scientist you don't think a whole lot of in terms of being aggressive and competitive.' Inexperienced, untenured women are not only alienated, but in several instances where their relational and proactive style has been conspicuous, tenure has been delayed or denied.

Instrumental advisor/relational department

For a female faculty member whose previous personal experience has

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scenarios of female faculty experience with departmental structure. These were attempting to follow (1) a relational department, (2) an instrumental and (3) an instrumental style in an instrumental department. A tripartite model of tension is possible in any given department. Each model describes an internal dynamic that may struggle even when there is a fit between the faculty and their department.

Relational department

Typically between a younger female faculty member on behalf of her female students and a younger male faculty member who embraces the intensely competitive scientific environment. Sometimes relationships can be strained between younger male faculty 'who share the history behind their department' and older female faculty who describes her discomfort with a department who reflect the male perspective. A lot of the women who make it to tenure do not want to hang around with a department who do not really care about anything. It means that you face taking on the consequences. You don't think a whole lot of in terms of 'Inexperienced, untenured women'. In several instances where their relational dynamic is vicious, tenure has been delayed or denied.

Relational department

As a result of previous personal experience has

been that she must prove herself to be exceptional and put aside all non-scientific interests, a department with a collaborative approach to mentoring induces a different inner turmoil. Such women view any detour from the individualistically competitive way of doing science as a disservice to their students. To recognize the personal issues that female students struggle with is experienced as a betrayal of what they believe is necessary to succeed. This lends itself to tension not only with their women students, but the department itself.

Professional pressures in tandem with forgetting early support systems of their own may also blur the picture, as reported by a veteran woman advisor. 'Sometimes it's easy for me to forget that I did have support. I think in retrospect you tend to forget the insecurities. The time you needed something extra.' Instrumental advisors, even in a relational department, may still be struggling with how to negotiate a competitive scientific environment and may not be able to afford to expose their own vulnerability.

Instrumental advisor/instrumental department

Women faculty members who identify with the traditional 'old boys' are perplexed about the tension that arises between them and female graduate students. Periodically such women find themselves with all-male laboratories and are at a loss to understand why female students gravitate to younger male advisors. Although this older advisor is cognizant of the self-doubts of her female students and recollects her own need for support, as lab director she becomes defensive about interpersonal demands she does not always understand. 'They think you are going to be very warm and supportive. I think I am a nice person. I certainly care a lot. But a professor has a certain duty to say "You have to get back on track or this is it . . ." If you're going to be in this field then your job is to criticize yourself every day and never get too down on yourself.'

However, as female graduate students have become more forceful in articulating their needs, women faculty members are forced to question their belief that women should work harder than men in order

to prove their worth. Having ignored the women's movement of the early 1970s, owing to their exclusive scientific focus, senior women may find that the vicissitudes of young incoming faculty and students provide an 'eye-opening experience'. As a result, senior women faculty have had their consciousness raised by their women students in a number of such instances.

A heightened consciousness of discrimination is, of course, only the first step. Once individual attitudes change, the next step is to effect organizational change, which can be more difficult. The high powered academic science department with its competitive identity is typically highly resistant to change. Nevertheless, some improvement for women in science has taken place in recent years. In the next chapter we delineate several change-making strategies, their costs and benefits.