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#3. Gendered Academia: Challenge and Response

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While the transition from an industrial to a knowledge-based society has enhanced the role of the university in society and strengthened the case for increasing public and private support on academic institutions, it has also increased the pressure on universities to produce tangible benefits, such as new industries, firms and jobs. These demands and opportunities translate into an expansion of academic roles and intensification of work, unless moderated by countervailing policies and practices. The intersection of entrepreneurial university development with gender equality pressures has created a crisis of "role overload," resulting in burnout, reinforcement of traditional academic norms and, only in relatively rare cases, reorganization of academic roles to accommodate women's as well as men's priorities for personal and family life.

Too often academic structures are still front loaded, requiring high early achievement, despite research showing strong contributions over the life work course. Nevertheless, such pressures are inevitably enhanced as good jobs become fewer in an academic economy that became a "gig" economy for many before the term was invented to label Internet controlled Labor. There may be no feasible solution until a more equal academic as well as gender environment is created as both are interdependent. A field of academic as well as economic equality with relatively few institutions monopolizing research resources, makes careers in such institutions amenable primarily to men and women who either eschew family and children, or who have a personal support structure and we all know which gender the latter benefit typically accrues.

Several data points, drawn from our research on entrepreneurial science and Women in Science, exemplify incompatibility between academic science and life needs, pace single individuals and those with house wives or house husbands indicate the need for restructuring academic roles and relationships.

- Academic administrator, student affairs, only female in four-person office is often presumed to be a Personal Assistant (PA) to the Dean by office visitors who beg her for "five minutes of (presumably) his time. She is regularly pushed down in status in comparison to the experience of Male nurses, who similarly experience status misplacement but are moved both up and down, as orderlies and physicians (Etzkowitz, 1971). There is a two-way escalator for men; one way for women.
- 2. A Male PHD scientist and start-up entrepreneur turned down an offer to join a venture capital firm as partner as his wife was on tenure track at a leading university. Both did not want their

young children raised by nannies and caregivers. In this unusual instance a man prioritized family over career, a decision typically taken by women. Within a few years he developed a plan to transform a narrowly focused technology transfer office into a support structure for entrepreneurial ventures, gaining support and funding form the Business School and Engineering Deans.

- 3. A Female scientist turned down tenure track offer at leading university, taking a scientist position in local "family friendly" high level research group where she had leeway to pursue her research without the demands of a tenure track position and freedom to take time, as necessary, to be with her child, with disability.
- 4. A Female scientist took a position as administrator of research center, supporting other researchers and pursuing her own research secondarily. While early on she felt credible to pursue a tenure track career this feeling waned over time. As the center was facing closure she reflected back on her career to date. She felt her supervisor did not encourage her to reach her potential, preferring her in a support role aiding his research objectives. While this was initially acceptable due to the time flexibility, a 9-5 administrative position allowed for family life; the lack of a return path to tenure track left a bad taste later on.
- 5. A senior male academic scientist took early retirement to pursue a biotechnology venture while retaining a modest academic commitment as a consulting professor.
- 6. A junior male academic scientist, held back in organizing a venture based on his research as his institution did not have a leave policy that would allow reducing his academic commitment significantly.

Overcoming Academic Gender Rigidification

The "gold standard" US academic career model, with its seven year 'up or out' tenure promotion rule, focused on early career accomplishment, is increasingly followed, globally. It expresses a linear life course theory most famously delineated by psychologist Erik Erikson (1950), predicated on a rigid stage model largely extrapolated from male experience. Indeed, the stages and phases of a male model of academic career advance have been extrapolated to women as they have been allowed into academia. Gender issues have only marginally been taken into account in its functioning, without altering its fundamental structure, with early career amelioration focus (Kloxin, 2019). The academic science career pipeline is based on a stage theory of human development, expected to occur in rigid sequence. While many occupations have bent to accommodate women without breaking staged linearity, academic science has proved remarkably resistant to accommodating senior women.

Men are more typically advantaged and women more typically disadvantaged to meet this criterion. The "biological clock" and social norms of child rearing have proved persistent in assigning greater responsibility to women than men. There are, of course, notable exceptions to these strictures that could be expanded upon including a minority of "house husbands," availability of infant care centers, the kibbutz concept of the children's house and participation of the extended family. Moreover, wealthy women and those with high salaried positions, like Sheryl Sandberg, the

main author of Lean In: Women, Work, and the Will to Lead, and Facebook' s Chief Operating Officer COO, operate as "honorary men." Transcending the difficulties their peers face, "lean in' advocates advise a positive persona on the presumption that modest pressure will induce change, and indeed, in some arenas, it suffices.

An alternative academic career model that meets women' s needs would allow major life tasks and challenges to be pursued in a non-linear order. "Stages assume that development is hierarchical, sequenced in time and cumulative. In a three-dimensional space, utilizing spiral patterns of different expansion and contraction, typical patterns of role choices that vary in number and duration for different populations can be charted" (Etzkowitz and Stein, 1976). However, non-linearity, opened up by extended life-span as well as cultural revolutions, legitimating Single and LGBTQ life styles, can only go so far. To date, biological intractablities of human reproduction intersecting with academic rigidification create contradictions between biological and tenure clocks (Etzkowitz, Kemelgor and Uzzi, 2000).

Attempts to remove road blocks have focused on "fixing" women and sensitizing men. Indeed, while Workshops for this purpose may have a positive effect on those men amenable to change; it may simply alert those opposed to change to better cover their tracks in impeding women's advance. At the organizational level reforms have had similarly mixed results to date: career breaks for childcare are offered equally to men and women. However, when taken advantage by men it can propel career advance; but when taken up by women it usually barely allows them to keep up given typically differential domestic responsibilities. Moreover, realizing that exercising this option may be viewed negatively in tenure review, makes women cautious of utilizing such " opportunities." Exceptional women with deep reservoirs of cultural and social capital, like Persis Drell, Stanford's Provost and daughter of legendary Stanford physicist, Sidney Drell, are exceptions to the rule. Drell was able to carve out a special arrangement at Cornell, including release from teaching while her children were young, thereby allowing her academic advance.

A Spiral Academic Model

A non-linear architecture is required to break the log jam of a stalled academic gender revolution in science (Lechman, 2019). An alternative career model, with a higher time commitment after child-rearing years, may be discerned. A Rockefeller University Professor, who started on her PhD at a later than usual age, exemplifies an alternative model that needs to be legitimized as an alternative path to high achievement. The scientific underground at the University of Rhode Island, where a cadre of women had invented 2/3 time positions as research associates on soft money, also needs to be regularized and legitimized. Other hidden creative career models that have been invented subrosa need to be brought to light and explored for their potential as alternatives to flexibilize a rigidified system.

A necessary reform indicated by relatively underground successful projects is the institution of 2/3rd

time positions focusing on a subset of research, teaching, and entrepreneurship, two out of three, at any time, with flexibility to shift the balance over time, moving to full time or less time positions, as circumstances indicate. Typically, such flexible arrangements are currently available to a very small number of academics who have achieved special support but need to be expanded to be made available to a larger proportion of faculty, without loss of academic status. The present "choke point" of academic advance to the associate and full professorial levels requires a rethink in the mid-career years as well as later, when a tapering off may be introduced so that retirement is not perceived as "falling off a cliff."

A spiral model in which stages and phases may be ordered variously, extrapolated to academia would mandate a career structure amenable to women including major female life events, like childbirth, in the life course and academic career structure without penalty. At present, any deviation from linear progression reduces the chance of rise and deflects women to lower level jobs than their male peers. Such a model, including the ability to step up as well as stop down commitment in later career phases would also be advantageous to senior men, as well as the minority of female peers, who have scaled the academic heights. An extended life span has made available more colleagues who have contributions to make, albeit at a less intensive pace.

Perhaps, a creative compromise may be discerned in these various strictures and partial models that would be in the long-term interest of all. Generalizing the female model of lab organization, limiting time at the workplace, encouraging a lateral collaborative work would enhance gender equality in academia. While both men and women would benefit from a more flexible academic career structure, such a renovation is necessary for women to achieve equity and equality in academic science.

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