

BOOK REVIEW: WOMEN IN GLOBAL SCIENCE: ADVANCING ACADEMIC CAREERS THROUGH INTERNATIONAL COLLABORATION

Edited by Kathrin Zippel

Stanford: Stanford University Press, 2017.

In *Women and Global Science* Kathrin Zippel addresses how gender matters in the internationalization of scientific communities, systems and practices. The book raises and tackles key questions cutting across research careers and gender, the globalization of academic systems and science policy.

The book draws on qualitative research, notably on 121 interviews conducted by the author with tenured academics from USA research universities. Interviewees are distributed across gender, professional categories, ethnicities, geographical origin and scientific field with a specific focus on STEM fields. This solid empirical research grounds the important issues at stake. The richness of the relevant academic work cited makes *Women in Global Science* a worthy read for specialized academic audiences including sociologists and economists of science, but will also interest gender studies scholars and students and public policy experts. The book is however also a very enjoyable read, totally accessible for non-specialist audiences, concerned stakeholders such as university managers, and the general public.

In *Women in Global Science* Kathrin Zippel argues that gender shapes the dynamics of the international research practices of US university faculty. She demonstrates how international mobility and collaborations provide both opportunities and challenges for women, as well as for researchers belonging to under-represented ethnic minorities. The book first situates the reader in context by describing the evolution of scientific production and collaboration across the most salient global scientific actors (USA, EU, China, Japan, India and others) and by contextualizing and raising the main research question: how is gender inequality reconfigured in an internationalized academic world? The second part (chapters 2, 3 and 4) contains the central concepts and arguments of the book. Zippel proposes two original concepts that enrich the literature on international academic mobility: i) the concept of 'academic nationality'; and ii) the notion of the 'glass fence'.

In the context of international mobility, academic nationality refers to the country where a researcher's origin (sending) organization is located. All mobile academics Zippel interviews for the study are US academic nationals, even if originally they might be foreign born or have an additional foreign nationality. Zippel argues that US academic nationality provides scientists that go abroad with what she calls the 'edu bonus', which is particularly beneficial for women and for men from under-represented minority groups. While working abroad, women are perceived by their peers and colleagues more as US academics than as women, often meaning that they feel more validated in their research abroad than at home. The same applies for men from under-represented minority groups. Zippel thus argues that the 'edu bonus' works to render academic nationality more salient than gender, race and ethnicity. For women in particular, having a foreign academic nationality entails escaping from normative gendered expectations that operate both at home and abroad. They feel less trapped into gender tasks; they experience the freedom of not having to fit in and feel therefore more capable to develop their own research style.

The literature on academic and scientific mobility had already described mobility as “a liberating force” (Johnson, 1965), as exposing researchers to new contexts that push them to deploy their creativity much further than in local contexts (Bauder, 2015) and as reshaping their identities as researchers (Lam, 2016; Spivak l'Hoste & Hubert, 2012). Zippel's contribution brings gender into this discussion, showing how mobility may liberate women from exclusionary networks and communities at home, allowing them to better explore and fulfil their potential as researchers. Zippel thus argues that moving horizontally across borders can help women rise vertically through glass ceilings. In my opinion, the most important contribution of the book is the idea of this gendered connection between horizontal and vertical mobility, which can provide opportunities for women scientists and academics. But this also exposes them to additional contexts where gender inequalities may (or are even likely to) operate, as captured by the second concept Zippel proposes, that of the ‘glass fence’.

Despite the fact that international mobility may provide opportunities for women to overcome certain gendered barriers they encounter in their paths to professional consolidation and leadership, glass fences operate at the horizontal level, demarcating national borders. According to the author, the term describes the gendered obstacles academics face in international collaborations and research. Glass fences reveal themselves particularly in contexts where organizational and institutional structures remain gendered. They are generally invisible, structurally embedded, and contribute to maintaining these gendered structures at the global level. The glass fences described in the book include stereotypes regarding the safety and capacity of women in certain locations or research sites, and women's care commitments at home, but also women's relatively poor access to resources, networks and support to collaborate internationally in comparison to men. Coupled with the under-representation of women in STEM fields, particularly in leadership positions, there are also fewer women to collaborate with internationally. Here again Zippel draws our attention to the intersection between vertical and horizontal gender stratification in science.

The final part of the book is devoted to discussing the influence of families on academics' international mobility (Chapter 5) and to addressing interested stakeholders regarding potential solutions to the problems identified (Chapter 6). Zippel addresses the influence of families from a refreshing perspective, overcoming the discourse of ‘family as problem or burden’. She argues this type of discourse obscures the diversity of families and the different issues at stake in family mobility. The most important message here is probably that families and international research are not incompatible processes but their co-existence and compatibility has to be worked out carefully, not just by the individuals and family members directly concerned but also by institutions, particularly funding agencies and universities. In this chapter, as throughout much of the book, Zippel dismantles entirely the ideal of the ‘global scientist’ that she describes as a cosmopolitan academic entrepreneur, internationally mobile, hyper-flexible and unattached, generally a man. Zippel tells us that, far from this dominating ideal, it is actually the diverse men and women embedded in (often gendered) socio-cultural, personal and professional structures who are contributing directly to the progressive globalisation of science.

As much as I would recommend consuming the entire book to any potentially interested reader - since despite its academic relevance it is short and easy to digest - very busy stakeholders such as science funders, managers or policy makers could also take a short-cut to the sixth chapter. Here they will find a list of concrete steps and measures that can be taken to integrate gender equality, diversity concerns and internationalisation strategies. Zippel proposes specific measures that could contribute to eliminating some of the obstacles her research identifies, including steps to introduce more flexible funding schemes, promote inclusive networks and validate international work in evaluation practices, among others. In other words, the author lists specific measures that could connect the horizontal (spatial) and vertical (career, temporal) dimensions of academic work in ways in which they can positively nourish each other instead of the opposite.

Women in Global Science thus provides policy makers and research managers with a potentially promising work and action agenda, whilst also opening up interesting avenues for academics to pursue research in this field. As stated by the author in the last pages of the book, more research is needed on the nature and impact of 'fences', on the globalisation of academic fields other than STEM and on the nature and evolution of academic networks, among many other related topics. Personally, I find one of the most interesting avenues opened up by this book to be the proposed three-dimensional approach to academic work that integrates systematic considerations of gender, space (mobility) and time (research career) which had not been so thoroughly integrated before in the scholarly literature.

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