

Gender and transnational plant scientists: negotiating academic mobility, career commitments and private life

Pettersson, Helena

Veröffentlichungsversion / Published Version

Zeitschriftenartikel / journal article

Zur Verfügung gestellt in Kooperation mit / provided in cooperation with:

Verlag Barbara Budrich

Empfohlene Zitierung / Suggested Citation:

Pettersson, H. (2011). Gender and transnational plant scientists: negotiating academic mobility, career commitments and private life. *GENDER - Zeitschrift für Geschlecht, Kultur und Gesellschaft*, 3(1), 99-116. <https://nbn-resolving.org/urn:nbn:de:0168-ssoar-394570>

Nutzungsbedingungen:

Dieser Text wird unter einer CC BY-SA Lizenz (Namensnennung-Weitergabe unter gleichen Bedingungen) zur Verfügung gestellt. Nähere Auskünfte zu den CC-Lizenzen finden Sie hier: <https://creativecommons.org/licenses/by-sa/4.0/deed.de>

Terms of use:

This document is made available under a CC BY-SA Licence (Attribution-ShareAlike). For more information see: <https://creativecommons.org/licenses/by-sa/4.0>

Helena Pettersson

Gender and Transnational Plant Scientists Negotiating Academic Mobility, Career Commitments and Private Life

Summary

The aim of the article is to analyze how gender intersects with mobility, career and private life among a highly transnational group of researchers, namely plant scientists. The author's hypothesis is that academic mobility and science are constituted with gender as an important incentive. The study is based on ethnographic field work such following observations and in depth interviews with researchers in plant science. The plant scientists work at an international science center in Sweden with co-workers from 35 different countries. Using the concept of "capital", the relationship between mobility, career and gender is problematized. Furthermore, the article will look at the informants' work-life balance, i. e. how scientists manage academic mobility in relation to their private lives.

Keywords

Academic mobility, gender, academic capital, career, private life

Zusammenfassung

Gender und transnationale BiologInnen Aushandlungen zwischen akademischer Mobilität, Karriereplänen und Privatleben

Das Ziel dieses Aufsatzes ist es, zu untersuchen, wie Gender, Mobilität, Karrieren und private Lebensführungen unter einer transnational hoch mobilen Gruppe von BiologInnen aus der Pflanzenforschung miteinander verknüpft sind. Die Autorin geht von der Hypothese aus, dass akademische Mobilität in der Wissenschaft einen wichtigen Anreiz darstellt, der für die Geschlechter unterschiedlich bedeutsam ist. Die ethnographische Studie basiert auf teilnehmenden Beobachtungen und Tiefeninterviews mit BiologInnen aus der Pflanzenforschung in einem internationalen Forschungslabor in Schweden, an dem WissenschaftlerInnen aus 35 verschiedenen Ländern arbeiten. Mit Bezug auf das Konzept des „Kapitals“ wird die Beziehung zwischen Mobilität, Karriere und Gender problematisiert. Darüber hinaus betrachtet der Beitrag die Work-Life-Balance-Strategien dieser WissenschaftlerInnen und fragt danach, wie sie ihre berufliche Mobilität und ihr Privatleben organisieren.

Schlüsselwörter

Mobilität und Wissenschaft, Gender, Akademisches Kapital, Karriere, Privatleben

Introduction and aim of the article

If you decide to become a scientist,
for example in plant science,
you know – from the very beginning –
that you need to be mobile.

Interview with Hans

Academic mobility across global and local networks is an important topic in today's discussion of knowledge circulation and gender dynamics. Scientists who participate in international networks are central actors of a globalized knowledge flux. Today, research migration across organizations and global networks is an important topic in the discourse of knowledge "brain drain", "brain circulation" and its intellectual and economical consequences (Backhaus/Ninke/Over 2002; Gaillard/Gaillard 1997; Pellegrino 2001).

With an increasing competitiveness between knowledge intensive countries, it is important to analyze incentives for researchers who choose to move between the different research sites. Academic mobility can be analyzed as cultural, gendered values and practices. These values are articulated at an early educational stage as you enter higher education and through the educational system. It includes presupposed training in formal methods, experimental practices and disciplinary scholarly knowledge.

The aim of the article is to analyze how gender intersects with mobility, career and private life among a highly transnational group of researchers, namely plant scientists. My point of departure is that academic mobility and science are constituted with gender as an important incentive. The study is based on ethnographic field work such as following observations and in depth interviews with researchers in plant science. The plant scientists work at a highly international science center in Sweden, with co workers from 35 different countries.

The life as a scientist is intertwined with a life outside of the lab group and the lab. How do the scientists balance academic mobility in relation to their partners and family? If both partners are educated to a high level, can both fulfill their ambitions despite of migratory requirements one or both partners might have? Common issues concern for example whether a partner is willing to co-migrate or whether the career and the relationship are sufficiently important to maintain long distance. Gender and identity work may challenge how relationships and careers are valued. I have for example interviewed female researchers who choose not to form relationships or to start a family. How do they regard their choices in relation to gender?

Method and data

The article is based on interviews, and field notes from descriptive/following observation. Data collection through interviews and observations are well established methods in ethnology when studying complex cultural contexts (Kruse 2006; Pettersson 2007). The aim of the methodological approach is to understand how the scientists themselves define their ability to conduct research in relation to academic mobility and if/how academic mobility is constituted through their scientific culture.

As an ethnologist I study cultural practices and meaning creating processes. The advantage of ethnographic fieldwork is that it produces a comprehensive understanding of the scientific environment under investigation. Given the large amount of scientists at the plant science center, I choose to follow key informants in their laboratories and in the growth chambers with plants, and I participate in meetings and conferences. I have conducted fieldwork among the plant scientists through following observations, mainly during fall 2009 but also spring 2010.

During fall 2009 and spring 2010, I conducted twelve interviews. The informants were chosen depending on their experience of academic mobility. One informant was also chosen because of the lack thereof. The purpose of the project was disclosed to my informants before starting the fieldwork.¹ The analysis of the interviews led to a categorization of themes and topics. These topics were matched with other data collected from the general fieldwork and analyzed together.

The reason why I choose following/descriptive observations instead of participant observation is due to my lack of training in plant science; to fully participate, a professional background would be required. With following/descriptive observations, I follow the plant scientists in their daily work to observe the daily conditions under which they work, ask questions about their work, and take regular field notes. These observations work as a central database in order to be able to conduct interviews. My marginal participation during these events is limited to open doors, carry equipment, to follow safety regulations and to ask a lot of questions.

Research environments such as laboratories are complex environments in their combination of humans and machines (Barad 2003, 2007; Suchman 1987). The ethnographer performs a translational act when analyzing the lab as a cultural phenomenon. The lab has to be described so that outsiders can understand it. There is a balance between an insider and an outsider perspective where the ethnographer becomes “the professional stranger” (Agar 1980). Estrangement or de-familiarization remains the distinctive trigger of ethnographic work, giving it the sense that there is something to be figured out or discovered by fieldwork (Marcus 1998).

Given that gender analysis is important for the understanding of academic mobility, I also argue that academic mobility is a part of a research field called “studying up” (Nader 1972). By “studying up”, our conception of knowledge and power making processes within academic research communities on a local and global level.

Cultural and social studies of science and the academy are complex fields. The academy has been studied as a territory with tribes (Becher/Trowler 2001) and as a culture with its internal rules, logic and socialization into a discipline and research identity (Gerholm/Gerholm 1992). Traweek’s anthropological study of particle physicists is a pioneer work and is unique given its analysis of the physicists’ socialization into their research identity and the gendered construction of research practices (Traweek 1988, 1995, 2000). Part of the socialization is to recognize the necessity of different stages of scientific training (Schoug 2004). Such an activity is academic mobility.

1 The field notes and the interviews are used with my informant’s consent. The informants are given pseudonyms in my articles to protect their identity. The aim of the interviews is to highlight each individual’s perspective. Depending on the interview situation, I recorded the interviews with a digital recording device with the informants’ consent.

Mobility and its gendered aspects

Transformations of communication and the global economy have changed our conception about place and territory. Work places as transnational spaces are being created by people who inhabit them; it might be low paid jobs in the service sector or highly skilled knowledge workers in the innovation industry. The labour market and its global actors have also undergone a change. Here, gender as a category is crucial when analysing social relations and power (Mahler/Pessar 2006; Parrenas 2001).

It is important to analyze academic mobility among scientist from a gender perspective considering the resources in research and the academy's institutional power. Moreover, an analysis of academic mobility from a gender perspective also problematizes our conception of the elite in society and for whom and by whom these elite institutions and their practices are designed. Academic mobility in today's society includes men and women, but the demands, and practices and choices may differ.

As shown in many studies of globalization and mobility, gaining an income and work opportunities are important reasons to move (Ball/Goodson/Maguire 2007). "Given that having a job and an income is one issue, provision for eventual partner and family while being mobile is another", one of my informants said. Among my informants, the eventual partners are often highly educated, or even a researcher or a scientist. Amongst such couples, both parts would try to pursue careers.

An important factor for academic mobility is the scientists' private life and family situation. The employment situation forces scientists to negotiate with a partner/family to be able to move between research sites (Benckert/Staberg 2000; Green 1995; Sonnert/Holton 1996; Wagner 2006). People with higher education tend to have a partner with higher education. This is especially true when it comes to female researchers. An American study with 30 000 faculty members shows that 44 % of the female physicists in the US are married to other physicists and an additional 25 % to other scientists. The relationship pattern is probably similar for female scientists in Sweden (McNeil/Sher 1998, also see Eisenhart/Holland 2001; Green 1995).

As mentioned by Bailey/Cooke, women and men have different experiences from migration. Family responsibility and life-course factors affect women more than men (Bailey/Cooke 1998: 101). Xie/Shautman showed in their study that female life scientists need to be mobile at a certain stage of their career (Xie/Shautman 2003). In a study of Swedish academic mobility, Melin suggests that women take a larger "traditional" responsibility concerning family and children compared to men, but Melin does not problematize his claims further (Melin 2003). Family life has a bigger impact on female researcher's mobility than male researcher's mobility (Bonney/Love 1991; Edqvist 2006; Nilsson 2000).

Scientists who participate in academic mobility can be defined as contemporary nomads (Melucci 1989), more or less people in diasporas. These nomads are bound to certain spaces, like successful research groups and laboratories with state of the art equipment and through them social relations and power structures. With the researcher as nomad, also other individuals are bound, such as an eventual partner and family. They also become affected by and participate in the globalized, academic culture, not only the single researcher (Melucci 1989; Xie/Shautman 2003; Mahroum 2000).

Nomads in diaspora might be dependent of a so called “tribe culture”, a tribalized research culture. Such culture may replace a national identity (Hannerz 1996; Traweek 1988, 2000). Within that group, certain norms are articulated concerning expected career paths and career priorities, and incentive for how research is supposed to be conducted. Practices of conducting experiments affect how research is organized. If so, the research activity may take its point of departure from a specific group of scientists.

Here, the actual scientists are considered to be the resources. Or, the experimental devices are considered to be the main resource of a specific research site and therefore create a basic condition for how to conduct research (Knorr Cetina 1999; Wagner 2009). Knowledge and skills are embodied through the individual scientist. Thus, the laboratory must be analyzed likewise as a space where its scientific knowledge is co-produced with scientific ideals and gender.

At the same time, it is also important to mention that there are scientists who are not mobile even though they work in a research culture that strongly promotes mobility. Some scientists are not interested in mobility; they are satisfied to be immobile. There is also a critique that highlights the negative side of forced academic mobility, such as a loss of connectivity to a place or other individuals, uncertainty and heterogeneity of the actual work situation (Ackers 1998).

Capital, gender and professional life

Through programs as Fulbright and Erasmus Mundi, academic mobility becomes part of a political agenda parallel with the educational schema. Academic mobility is integrated and organized through these formal channels. Departments and research centers also develop their own network at a departmental level and at an individual level (Baumgratz-Gangl 1996; Becher/Trowler 2001; Hoffman 2009).

Research councils and researchers within policy studies have shown how formal regulations and immigration rules affect scientists' mobility (Ackers 2009). The European Union's research programs aim to strengthen the academic mobility and develop a social security network within Europe for mobile academics (Novais 2009).

As any other professional, scientists develop different abilities and functions depending on their career stage; building a continuity of scientific relationships with a lab group at their own and other universities, transfer knowledge and networks between generations and access resources as laboratory equipment and devices. There are both, push and pull factors that affect scientists' willingness to be mobile. Push factors for moving abroad consist of access to resources not available in their home country. This can be laboratory or staff resources, training and development in methods and theory, or even positions and employments (Fontes 2007; Delicado 2010; Diaz-Briquets/Cheney 2002; Gill 2005). A combination of specific research interest, possible lab groups and co-scientists and the laboratory resources are crucial aspects when scientists consider their choices of research site.

Scientists and their partners carry what Pierre Bourdieu call social and cultural capital within and between the academic sites. Cultural capital can in an academic context be interpreted as academic capital, given merits as peer reviews, publications at pre-

stigious publishing companies and extramural research funding. This is an important quality asset within the academy when applying for lab positions. In my use, gender is also a part of each person's capital on a symbolic and cultural level. Throughout each researcher's career, he or she will carry a social and cultural capital, based on affiliation to or lack of participation in an international research community (Bourdieu 1988, 1993a, 1993b; Adey 2010; Fornahl/Zellner/Audretsch 2005).

The symbolic significance is constituted by several sets of personal and professional dispositions. Gender is a capital that is made more or less visible depending on how my informants interpret the possible space that can be given to gender as an openly existing category (Adkins/Skeggs 2005; Bourdieu 2002; Moi 1991). The social capital consists of networks, social relations and a circle of colleagues and friends. It is not only vital when applying for positions but also when trying to arrange an acceptable life for partner and family (Bourdieu 1988, 1993a, 1993b).

In academic mobility, policies as well as in the expectations and negotiations of a scientific career, symbolic capital corresponds with a gender contract; a framework that defines the relationship between men and women. From this framework, analysis of rationality, confirmation and repetition performed among the scientists can be made.

Mobility as the ideal career step

Academic mobility among scientists is defined as an obligatory point of passage, a necessary action to be able to maintain a membership within a research community (Callon 1999: 69ff.; Felt/Stöckelová 2009: 48ff., 63). In current debates on how to develop and maintain state of the art research, close international cooperation is described as the core for sustaining research excellence and at the same time to cultivate successful research co-operations (Edqvist 2009; Mahroum 2000; Melin 1997, 2003).

To deliver a positive narrative about academic mobility, internationalization and a straight forward research career is a part of the plant science center's rhetoric. In official presentations and meetings with journalists, these front stage ideals are marketed as natural and internalized. Academic mobility is considered to be a given choice for the plant scientists, especially since the plant science center is building parts of its reputation on its international research environment.

Among the majority of my informants, mobility is itself described as a part of the academic life. A career in research therefore requires a certain willingness to migrate. This is especially important if you are from a small country, say several of the plant scientists. However, to be able to pursue a successful career within plant science, there is an outspoken demand: If you are in plant science and want to continue to work as an academic, you need to go abroad – preferably to the US – and work as a junior researcher.

To have an income and to gain knowledge are two combinations that are also at stake for mobile academics. Among my informants, to have a job, an income, is also an important argument. A related reason is a pressure of being a part of an international research community and to pursue an international career. You must be able to move in order to conduct your research, and if you are not part of a mobile academic community and cannot get positions at different universities and are thus enabled to learn more

skills and gain more knowledge, you might not be competitive for more permanent positions.

“Given that having a job and an income is one issue, provision for eventual partner and family while being mobile is another”, one of my informants said. Among my informants, the eventual partner is often highly educated, even a researcher or a scientist. Amongst such couples, both parts would try to pursue careers.

Ideal careers within academic disciplines are described through their own narrative. There are standardized stories in the daily conversations among the plant scientists on the ideal career and how to develop as a successful senior researcher. These stories are interconnected with the international discourse on how to conduct your career as a scientist, but they are also gendered. With the demands of academic mobility, we may ask who is benefiting from being mobile and who is able of being mobile. As the gendered image of the researcher and the scientist has undergone a major transformation during the last 30 years, so has also participant of researchers migration slowly changed (compare Ackers 1998; Kimmel 2003).

To have the “right research persona” from the beginning when becoming a PhD student is important, say several of my informants. A PhD student needs to be focused, persistent, stubborn, never give up and try again and again and again. “The research you’re conducting may not lead to results at first hand. You need to be persistent, and stubborn. You might need to run those experiments again and again to be able to get results. To give up shouldn’t even exist in your imagination.”

The ideal career track is to conduct your PhD in about four years. The supervisor should have a tight project with a couple of other lab members, working on similar topics. On the one hand the degree of freedom the supervisor gives the student can be interpreted as negative since instructions appear vague and the work development is indistinct. On the other, freedom also means personal development and the possibility to develop your own research and career track independently. Knowledge and skills in laboratory work, experiments, field work, test beds, and theoretical understanding of your field of science are central capital gained through the PhD. This is an important quality asset within the academy when applying for different positions in different laboratories.

After finishing your PhD, you are supposed to move to another university to become a post doctoral scholar. The norm is to go to a research institute or research university in the United States. “The very act of moving to another university and to enter an appointment as a post doc is in itself a critical step”, says John, a senior plant scientist. Beside expected gain in knowledge and method, the mobility as professional activity is in itself an indication of research interest. “It shows that you really are serious, that you are willing to work towards a career as a plant scientist.”

To calculate risks is considered to be essential. To become a mobile scientist, to change the university or research institute to work in different countries could be defined as a risk taking situation, a situation described by many of my informants (compare Kerr/Lorenz-Meyer 2009: 150). Within many European university systems, you are not obliged to change university or research institute when you are going through different career steps (compared to the US academic system). It is not uncommon within the Swedish system to continue academic careers at the same university at which you completed your PhD.

“If you decide to work as a scientist in the academy, you need to learn to “play the game”, says Anne, a junior researcher. That is, you need to develop a strategy to know how to take the “right decisions”. You need to show that you are willing to take the risks, to be serious with your career and by that, willing to participate in international mobility. Is that process gendered?”

Accumulation of capital through mobility

“The system is, for some reason, less beneficial to women.”
Interview with John

In studies of gendered careers within the academy, Virginia Valian problematizes to what she calls “accumulation of advantage”. “Accumulation of advantage”, can be described as an accumulation of academic capital, some of it through strategic and necessary migration. In the construction of the researcher, one factor is gender as a symbolic capital, which corresponds with gender and academic performance (Valian 1998).

Within an academic system, different performances are defined as an accumulation of academic capital. They create access to a number of different roles within the academy that will affect formal and informal status, research grant success rate, appointments, networks, expected career outcome etc. Valian problematizes this in relation to what she calls “gender schemas”, different notions on expected choices and performances given expectations on gender, achievements, leadership and competence (Valian 1998; Eisenhart/Holland 2001; Sonnert/Holton 1995).

A tendency within the plant science community, says John, is that more men seem to have both more confidence in their PhD work and are more determined to pursue their career. That is a situation he deplores and is intrigued by. “The system, for some reason, is less beneficial to women”, he concludes. He adds that it is hard to specify what exactly it is that makes the system less beneficial for women though. To him, the fewer amount of women within plant science is based on structural causes, not gender as such. The result, however, is that people who are really talented in science are lost. He considers that as negative for the entire plant science community.

Central for each plant scientist’s career steps, especially after the PhD exam, is a new phase of learning. To gain new knowledge and skills in methods and theory is central. Either you want to develop an entirely new skill, or become even more specialized in a method you already master, said my informant. For example, you might have been working with spruces and plant breeding with an environmental ecology profile. You realize that you need to learn more about molecular biology to be able to develop a research branch you are interested in, for example how cell membranes of spruces react when they are exposed to high temperature changes. You can either choose to look for a position at your current university. Or, you can choose to go to another lab at another university in another country.

Being a part of an international network through academic mobility does not guarantee a successful scientific career. The significance of academic mobility in relation to how to gain academic capital is thus dependent on many factors. Your place within an

academic pedigree, gain of social capital and your current private situation in relation to your professional life are defined as crucial factors by my informants. Gaining merits and development of talents and skills, is especially important if you are a women, say several of my informants.

To work with a state of the art scientist and fellow junior researchers in a competitive lab was refreshing and challenging at the same time, says Lisa. For new PhD students, changing university and laboratory abroad becomes a method of showing independency. Commencing your PhD then means breaking loose from your former PI (principal investigator) and supervisor. In the new laboratory, you do not only learn new methods. An equally important act of learning is to observe how to run a successful lab. This phase of learning is defined as a step of independency, Lisa concludes.

Part of that independency is to work in a new environment and to gain new perspectives on how to conduct experiments, discuss theory, and design research projects. Moreover, you also need to reflect on your development into a senior position and how to develop your own research style. The accumulation of capital as documented merits is not the only purpose.

The learning act goes through experiencing and observing situations that are not immediately connected to the conducted science. Nevertheless it has an important impact; Lisa emphasized that not only the quality of the science produced in the group is being considered by her post doc PI, but also other aspects of the job. Working with a female PI who is extremely successful has its advantages when being a female junior scientist, Lisa said.

Lisa: It was awesome to go to that lab [...], to work with such a "die hard" female state of the art scientist! And all the old guys were deadly afraid of her! She was extremely bright, good looking and so competitive!

Neither Lisa, nor the other informants used the word "role model" when describing their work with their PI as post docs. Also, gender was not the main reason why Lisa did choose to work with this specific PI. Yet, the combination research quality, academic performance and gender representation, made a strong impression on Lisa. To understand scientific leadership and to work with a female researcher was also a method of visualizing herself in that position. Her female PI represented a researcher who can conduct state of the art research, run successful labs and research groups, and compete in a male dominated research field.

Another aspect of the accumulation perspective is described by Susanna and Jennie. Beside the development of their scientific skills and laboratory work, they describe their work in foreign laboratories as part of accumulation processes. The *social* capital the plant scientists develop is a network of scientists, whom you are cooperating with in your future career. The mentioned PI gathered numerous talented young scientists, who worked together in the labs, sharing and learning each other's knowledge and skills.

The network developed during work abroad is central for the rest of your career, Lisa, Jennie, and Susanna emphasize. You need to choose your site carefully depending on the lab resources and the co-workers within the lab. During an interview, the senior scientist Pia, talked with a hint of regret of her choice of post doc site. The lab she did choose to work in after finishing her PhD was a smaller lab in a European country.

"Now, in retrospect, I can see how the contacts people made when they went to a major American lab [...]. It's not that I wasn't content with my lab, but, I can see the difference it made for them compared to my experience".

An important aspect of the individuals' accumulation of academic capital is the importance of the collective merits. Those collective merits are: the fellow scientists working in the lab and their academic reputation together with the accumulation of the capital of the individual scientist her/himself. And here, the academic mobility is an important part of that process.

Negotiating mobility and private life

I worked my ass off – in the lab – and then
picked up my kid at the day care center.
Interview with Jennie

If you do not fulfill the ideal type of the mobile scientist – young, male and single – what factors affect the choice of becoming a mobile scientist?

Earlier studies show that women at an early career stage are more mobile. However, this pattern changes when passing the age of thirty (Kerr/Lorenz-Meyer 2009: 145; compare with Connell/Wood 2002; Connell/Wood/Crawford 2005). The scientists' private life situation is an important factor. Among the plant scientists, the family situation is a major reason when discussing possibilities or obstacles of international academic mobility. The plant scientist may have a partner, and that partner may have a career on his/her own. A dual career situation must therefore be taken into account. Children may also affect mobility, depending on age and stage in school.

The first aspects, regarding a partner, were discussed several years ago at the Swedish Research Council, said a senior researcher, Richard, at UPSC. According to him, it was and still *is*, very hard to encourage women to participate in academic mobility. "Men get 'out there', but not women, not in the same extent", he said. Richard emphasizes the importance of an even activity on internationalization and research at a foreign university. Compared to men fewer female scientists use the years at a foreign university as "spin off" to become a senior researcher – compared to the male researchers, he says.

He points at initiatives taken by the Swedish Research Council, where the council tried to launch a program for female researchers' international mobility. When promoting mobility, he said, most women argued that it was very hard for them to be mobile and go abroad for a couple of years. Their arguments were mainly based on their husbands' situation and what they thought was an economic incentive for not being able to move to, for example, an American university.

The main argument was the potential economic loss for the family economy. According to Richard, the female scientists said that their husbands thought it would be very hard for them to not contribute to the family income. Most of the men would be unemployed while being abroad. Richard, as member of the Swedish Research Council's section for science, tried to find a solution to implement a more egalitarian practice with economic support.

Given the economic argument the council tried to develop a program to sponsor the female researchers' mobility through an extra grant to cover up the partner's loss of salary. Was this the method of supporting female scientists' international mobility? And would it have effect? In the end, no female researcher applied for this option. When referring to the process, Richard sighed. He also pointed out that "there must be something else" that regulates the unbalanced gender representation.

Dual career relationships where both persons have higher education are a challenge, the informants said. Arguments about responsibility for economy, professional development, child care and future career prospects affect each scientist's everyday life. It also affects the possibility to participate in academic mobility.

A crucial part of fieldwork is to go beyond what can be described the "front stage" image of the informants and the studied field. An example of a front stage performance at my field site is how academic mobility and research internationalization is described for people outside the research center. This was for example performed during an interview with a journalist from the Swedish national radio. During the interview, the internationalization and mobility was described in only positive terms. International research environments were described as "a necessity". The journalist pointed out certain risks for researchers with mobility, internationalization and time limited employments. Did not those factors affect how the plant scientists organize their lives?

The present plant scientists met the question with pointing at the necessity of taking such risk. They also emphasized that a scientist has to have a specific personality, one that is able to ignore the insecure employment situation and focus on research. "You just have to cut it dead and focus!", John said. The others around the table nodded in approval. Yet, when trying to analyze perspectives behind the "front stage" narrative, there are other stories that are articulated.

"Back stage", behind the official rhetoric's, the necessity and usefulness of mobility may be confirmed but to actually go through the process of migration may be more problematic. A crucial factor is to have a partner who is willing to follow you if you decide to move abroad. It does not matter whether you yourself decide to start working in a laboratory in another country. If you have a partner, you need to negotiate how to organize your private life.

Several of the female plant scientists I interviewed described themselves as "lucky"; they had partners and (eventually?) children who moved with them to another country. One informant said she that she had "a nice husband, meaning that I could go abroad with him and the rest of the family". During the interviews, narratives about "the nice husband" and mobility as a necessary good took another turn.

The role of the partner while being a mobile scientist was discussed by the informants in the interviews. Partners can be supportive, and decisions concerning academic mobility can be negotiated within the couple, my informants said. However, said Jennie, everyone who has a partner, and later children, is affected when it comes to their scientific career. As it is now, she continued, women still take the largest part of the family responsibility.

Within the Swedish context, ideals regarding an equal and egalitarian relationship are a part of the ideal image of the Swedish society as enlightened, modern and up to date (see Bernhardt/Goldscheider 2006). But to critically discuss how ideals are prac-

ticed, one needs to analyze how and if such ideals are implemented as practices. In a situation like being a mobile scientist, married to another scientist, you believe you are living in what you think is an egalitarian relationship, says Susanna. Considered to be central, moreover, are the values in the lab where you are conducting your research. That will affect your efficiency and possibility to combine science and private life.

The informant Jennie and her husband decided to conduct their post doc in another European country while having a child. They were both admitted to the same university. On site, the issue of child care was solved. Both of them were able to share the responsibility at their new university. When Jennie's husband suddenly got a job offer in another country, they decided to split temporarily; he moved to start his new position.

Jennie continued her post doctoral work, taking care of their child. She described days of hard work in the lab, then picking up their child at the day care center, and work at home during late evenings. To suddenly be alone with a child, without another person's support and in a foreign country was a challenging situation.

Negotiations with your partner are one issue that affects your private life while being mobile. An equally important part is the PI under whom they are working and the colleagues within the lab. Several of my informants describe their relationship with the PI under whom they are working as essential. The PI's understanding of your family commitments makes a huge difference, Jennie said. A PI does not only affect sets of values in relation to the scientific work, but also life outside work.

If the PI understands and accepts your situation as parent, it makes it easier to organize life outside work and to have more flexible hours. Several of the informants mentioned the need of being home with a sick child or leave earlier to pick up the child at the day care center. Moving abroad to work in a new lab puts you in a context where it is harder to control social relations. It is hard to have full knowledge about the PI's approach towards junior researchers and parenthood before actually starting to work with them. For a person at junior or mid-advanced career level, an understanding mindset among the PI may make a crucial difference; that includes both men and women.

As discussed by Bailey and Cooke, women and men make different experiences when migrating. Family responsibility and life-course factors affect women more than men (Bailey/Cooke 1998: 101). The politics of family and relationship is double within the plant science community. On one hand, the science careers, mobility and private life is considered a necessity, an important issue in today's research society and the development of scientific collaborations. On the other, it is an issue regarding how private life can be organized, and that is dependent on both partners' willingness of sharing responsibility and the PI's attitude toward female scientists and family.

Contested gender neutrality – contested life constellations

The discourse about academic mobility and couples in both literature and among my informants take the heterosexual relationship as point of departure. Within this perspective, the relationship between women and men are analyzed as central categories of power relations. Representations of the scientist, like images as the genius are strongly related to male representations of science (and the arts see Battersby 1994; Hoddeson/Daitch 2002; Quinn 1995; Rose 2001).

For the female plant scientists, there is a struggle to on one hand compete at the same level and by the same conditions as their male colleagues and to handle family expectations. Attempts to go beyond these gendered expectations are met with different strategies. A part of the strategy is to neutralize yourself and gender, say several of the informants. You have to dress more neutrally, and adjust to the jargon. It becomes even more important to show the level of you being a serious researcher and with a focused career plan (see Pettersson 2007; Traweek 1988).

Partner and children may “distract” you from your work, and may affect your work focus. Caroline, a senior researcher, talks about the family as a factor of distress and distraction. Field work and laboratory work in plant science may consist of experimental runs for several days and over weekends. If you are in a critical part of an experiment, you have to be present and control the different stages of the experiment. If you have a family, you have something that will drag you *from* work, and that is something positive, says John. Family obligations might actually lead to better focus at work while being in the lab, he thinks. You know that time is limited. You know that you need to be effective with the hours you have.

Partner and family is also a part of life when choosing to become a mobile academic, and there you need to take some hard decisions, say several of my informants. Several of my informants have chosen to separate from their partners to then be able to go abroad and work in another laboratory. Commitments to science, the learning act of moving abroad to become more attractive as a scientist, may compete with the private interests for partner and family.

Separations from partners given their decision to develop a career in plant science are by some of my informants described as a necessity. Pia, Jennie, Hans, and Lisa, explain the decision to live at different places than their partners as a conscious choice. Nevertheless, even though the choice is conscious, it is not an easy decision. Hans sighs when he describes the situation he and his partner are in. He lives in one country, his partner (a scientist), in another.

Living a geographically separated life is not a situation he is taken aback by. On the contrary, it is a situation he expected given his ambition of becoming a plant scientist. The mobile lifestyle as a scientist makes it harder to develop a life with children, he says. That is also one reason why he and his wife have decided to not have children. The combination of mobility and dedication to the sciences and the professional life made it easy to take that decision, he says.

A similar perspective is presented by Lisa and Nora. To have children is not a rational choice, given the lifestyle as a plant scientist. Nora points at her and her husband's current life situation, both of them are junior scholars with the ambition of working in science or science related professions. A child is not an option, she says. According to Lisa, she has never been interested in having children. The work is enough, and in her spare time, she enjoys the company of her husband and her pets.

Focus on work and to be dedicated to the sciences is a stereotype that would fit male figures in science, like Einstein or Pasteur. When it comes to my informants, like Lisa, not having children and not planning a family might be provoking. She receives questions about the lack of children or family planning. However, she says with a tart voice, no one is asking her husband (also a scientist) whether he wants kids and a fa-

mily. People make their assumptions regarding your family planning in relation to your gender, says Nora.

Being single and unattached of any immediate, private relations makes it of course easier to be mobile, says Anna, and takes her own situation as an example. During her career as a plant scientist, she has been working in different countries in both southern and northern Europe. She also points at the twofold expectations many women have to face: To meet scientific expectations as a plant scientist and meet gendered expectation as a women with partner, children and family life. The state of being single may work as the neutralized dress code. It does not signal any specific gendered attachment, neither heterosexual nor homosexual. It creates a space of gender neutrality.

Solitude may occur by choice or not. Sometimes it may be an effect of work. According to Anna, she has been able to focus on work and professional development due to her private situation as single. Given the amount of positions within plant science, says Anna, you need to stay flexible to the labor market to be able to enter a position within your field. The amount of positions within your field of interest is not too high, she says, you need to have a flexible mind and accept that you may need to be mobile to be able to pursue your career.

Cultural production and reproduction of gender orders are made on structural (the policies), professional (expectations of the role of the scientist) and personal (the private negotiations) levels, in relation to the acquired symbolic capital each person obtains through professional experience and gender definition (Hirdman 1988; Magnusson 2006; Valian 1998). It is thus important to keep in mind that neither dispositions and capital, nor gender order, are fixed entities. They can be challenged and contested.

Final remarks

Academic mobility is to be understood as a culture, attached to values and performances within a field as the academy but also to gender values at a more societal level. Given that academic capital and accumulations of advantages are now tied to a more mobile research career, we need to pay extra attention to how knowledge is produced within such patterns as gender. Basic scientific research is strongly related to national innovation capacity. Scientist mobility carries national socio-economic benefits by facilitating knowledge transfer between researchers. The *embodied* presence of the scientist contributes to the development of cutting-edge research environments, and thereby also of gendered regimes and identity work.

International academic mobility is a practice that suits a person who is young, single, with no commitments to partner or family, prepared to live with temporary housing. The discourse about academic mobility intertwines on the one hand a “taken for granted” perspective that mobility is good for its own cause. On the other, ideas concerning stability, “home”, and “roots”, to have a geographical focus point in your life, are still valued as life quality factors.

My article describes the tip of the iceberg regarding the radical changes of today: a globalization, relocation and competitiveness at a labor market with highly skilled individuals. Scientists and academic mobility form an excellent case for problematizing the re-

relationship between the specialized labor market with urbanization, commuting, and knowledge transfer on one hand, and ideals regarding life expectations and family on the other.

Literaturverzeichnis

- Ackers, Louise. (1998). *Shifting Spaces: Women, Citizenship and Migration within the European Union*. Bristol: Policy Press
- Ackers, Louise. (2009). Excellence, Migration and Equality Policy: Managing Unintended Consequences? *ResIST – Researching Inequality through Science and Technology*. Zugriff am 15. Mai 2010 unter www.resist-research.net/cms/site/docs/WP2%20Thematic%20Ackers%20Excellence%20Migration%20and%20Equality%20Policy%20Deliverable%2011_Final_Complete.pdf
- Adey, Peter. (2010). *Mobility*. London: Routledge
- Adkins, Lisa & Skeggs, Beverly. (2005). *Feminism After Bourdieu*. Oxford: Blackwell
- Agar, Michael. (1980). *The Professional Stranger. An Informal Introduction to Ethnography*. New York: Academic Press
- Backhaus, Beate; Ninke, Lars & Over, Albert. (2002). Brain Drain – Brain Gain. Essen: Stifterverband für die Deutsche Wissenschaft
- Bailey, Adrian J. & Cooke, Thomas J. (1998). Family Migration and Employment. The Importance of Migration History and Gender. *International Regional Science Review*, 21 (2), 99–118
- Ball, Steven J., Goodson, Ivor F. & Maguire, Meg. (2007). *Education, Globalization and New Times*. London: Routledge
- Barad, Karen. (2003.) Posthumanist Performativity: Toward an Understanding of How Matter Comes to Matter. *Signs: Journal of Women in Culture and Society*, 28 (3), 801–831
- Barad, Karen. (2007). *Meeting the Universe Halfway: Quantum Physics and the Entanglement of Matter and Meaning*. Durham, NC: Duke University Press
- Battersby, Christine. (1994). *Gender and Genius. Towards a Feminist Aesthetics*. London: Women's Press
- Baumgratz-Gangl, Gisela. (1996). Development in the Internationalization of Higher Education in Europe. In Peggy Blumenthal, Craufurd Goodwin, Alan Smith & Ulrich Teichler (Eds.), *Academic Mobility in a Changing World* (S. 129–146). London: Jessica Kingsley Publishers
- Becher, Tony & Trowler, Paul R. (2001). *Academic Tribes and Territories*. London: Open University Press
- Benckert, Sylvia & Staberg, Else-Marie. (2000). *Val, villkor, värderingar. (Choices, Demands, Values)*. Umeå: Umeå University
- Bernhardt, Eva & Goldscheider, Frances. (2006). Gender Equality, Parenthood Attitudes, and First Births in Sweden. *Vienna Yearbook of Population Research* (S. 19–39)
- Bonney, Norman & Love, John. (1991). Gender and Migration. Geographical Mobility and the Wife's Sacrifice. *Sociological Review*, 39 (2), 335–348
- Bourdieu, Pierre. (1988). *Homo Academicus*. Stanford: Stanford University Press
- Bourdieu, Pierre. (1993a). *Kultursociologiska texter (Texts in Culture Sociology)*. Stockholm: Symposium
- Bourdieu, Pierre. (1993b). *The Field of Cultural Production. Essays on Art and Literature*. New York: Columbia University Press
- Bourdieu, Pierre. (2002). *Masculine Domination*. Stanford: Stanford University Press
- Callon, Michel. (1999). Some Elements of a Sociology of Translation. Domenstication of the Scallops and the Fishermen of S. Brieuc Bay. In Mario Biagioli (Ed.), *The Science Studies Reader* (S. 67–83). London: Routledge

- Connell, Robert W. & Wood, Julian. (2002). Globalization and scientific labour: patterns in a life-history study of intellectual workers in the periphery. *Journal of Sociology*, 38 (2), 167–190
- Connell, Robert W.; Wood, Julian & Crawford, June. (2005). The global connections of intellectual workers. *International Sociology*, 20 (1), 5–26
- Delicado, Ana. (2010). Going abroad to do science. Mobility trends and motivations of Portuguese researchers. *Science Studies*, 23 (2), 36–59
- Diaz-Briquets, Sergio & Cheney, Charles C. (2002). *Biomedical Globalization*. New Brunswick: Transaction Publ.
- Edqvist, Olle. (2006). *Internationalisering av svensk forskning* (Internationalization of Swedish Research). Stockholm: SISTER
- Edqvist, Olle. (2009). *Gränslös forskning* (Research Without Borders). Nora: Nya Doxa
- Eisenhart, Margaret A. & Holland, Dorothy C. (2001). Gender Constructs and Career Commitment. The Influence on Peer Culture on Women in College. In: Mary Weyer et. al. (Eds.), *Women, Science and Technology* (S. 26–35). London: Routledge
- Felt, Ulrike & Stöckelová, Tereza. (2009). Modes of Ordering and Boundaries that Matter in Academic Knowledge Production. In Ulrike Felt (Ed.), *Knowing and Living in Academic Research* (S. 41–126). Prague: Institute of Sociology of the Academy of the Sciences
- Fontes, Margarida. (2007). Scientific Mobility Policies: How Portuguese Scientists envisage the return home. *Science and Public Policy*, 34 (4), 284–298
- Fornahl, D.; Zellner, C. & Audretsch, David B. (2005). *The Role of Labour and Informal Networks for Knowledge Transfer*. Springer: New York
- Gaillard, Jacques & Gaillard, Anne Marie. (1997). Introduction: The International Mobility of Brains: Exodus or Circulation? *Science, Technology & Society*, 2 (2), 195–228
- Gerholm, Lena & Gerholm, Tomas. (1992). *Doktorshatten. (The PhD Cap)*. Stockholm: Carlssons
- Gill, Bryony. (2005). Homeward bound? The experience of return mobility for Italian scientists. *Innovation*, 18 (3), 319–337
- Green, Anne E. (1995). The Geography of Dual Career Households. *International Journal of Population Geography*, 1, 29–50
- Hannerz, Ulf. (1996). *Transnational Connections. Culture, People, Places*. London: Routledge
- Hirdman, Yvonne. (1988). Genussystemet (The Gender System). *Kvinnovetenskaplig tidskrift*, 9 (3), 49–63
- Hoddeson, Lillian & Daitch, Vickie. (2002). *True Genius. The Life and Science of John Bardeen. The Only Winner of Two Nobel Prizes in Physics*. Washington, D. C.: Joseph Henry Press
- Hoffman, D. (2009). Changing Academic Mobility Patterns and International Migration: What will academic mobility mean in the 21st century? *Journal of Studies in International Education*, 13 (3), 347–364
- Kerr, Anne. & Lorenz-Meyer, Dagmar. (2009). Working Together Apart. In Ulrike Felt (Ed.), *Knowing and Living in Academic Research* (S. 127–168). Prague: Institute of Sociology of the Academy of the Sciences
- Kimmel, Michael. (2003). Globalization and its mal(e) contents. The gendered moral and political economy of terrorism. *International Sociology*, 18 (3), 603–620
- Knorr Cetina, Karen. (1999). *Epistemic Cultures. How the sciences make knowledge*. Cambridge, MA: Harvard University Press
- Kruse, Corinna. (2006). *The Making of Valid Data*. Linköping: Linköping University
- Marcus, George. (1998). *Ethnography through Thick and Thin*. New Jersey: Princeton University Press
- Magnusson, Eva. (2006). *Han, hon och hemmet (Him, Her, and the Home)*. Malmö: Libris
- Mahroum, S. (2000). Scientists and global spaces. *Technology in Society*, 22, 513–523
- Mahler, Sarah J. & Pessar, Patricia R. (2006). Gender Matters. Ethnographers bring gender from the periphery toward the core of migration studies. *IMR*, 40 (1), 27–63

- McNeil, Laurie & Sher, Marc. (1998). *Report on the Dual-Career-Couple Survey*. Zugriff am 15. Mai 2010 unter www.physics.wm.edu/~sher/survey.html
- Melin, Göran. (1997). *Co-production of Scientific Knowledge*. Umeå: Umeå University
- Melin, Göran. (2003). Effekter av postdoktorala utlandsvistelser (Effects of Foreign Post Doctoral Visits). Stockholm: SISTER
- Melucci, Alberto. (1989). *Nomads in the Present*. Philadelphia: Temple University Press
- Moi, Toril. (1991). Appropriating Bourdieu. Feminist Theory and Pierre Bourdieu's sociology of Culture. *New Literary History*, 22 (4), 1017–1079
- Nader, L. (1972). Up the anthropologist. In Dell Hymes (Ed.), *Reinventing Anthropology* (S. 284–311). New York: Random House
- Nilsson, K. (2000). Dual university-graduate households in Sweden. *International Journal of Population Geography*, 6 (4), 287–301
- Novais, A. Q. (2009). *The Emergence of a 'new research persona' in the Context of the European Research Area*. The Mobility, Science and Culture conference, Nov 23–24 Braga 2009
- Parrenas, Rachel Salazer (2001). Transgressing the Nation-State: The Partial Citizenship and 'Imagined (Global) Community' of Migrant Filipina Domestic Workers. *Signs*, 26 (4), 1129–1154
- Pellegrino, A. (2001). Trends in Latin American Skilled Migration: 'Brain Drain' or 'Brain Exchange'? *International Migration*, 39 (5), 111–132
- Pettersson, Helena. (2007). *Boundaries, Believers and Bodies. A Cultural Analysis of Multidisciplinary Research Community*. Umeå: Umeå University
- Quinn, Susan. (1995). *Marie Curie. A Life*. New York: Simon & Schuster
- Rose, Hilary. (2001). Nine Decades, Nine Women, Ten Nobel Prizes. Gender Politics at the Apex of Science. In: Mary Wyer et al. (Eds.), *Women, Science, and Technology. A Reader in Feminist Science Studies* (S. 53–68). London: Routledge
- Schoug, Fredrik. (2004). På trappans första steg. Doktoranders och nydisputerade forskares erfarenheter av akademien (At the First Step of the Stair. New PhD's and Recent Researchers Experiences of the Academy). Lund: Studentlitteratur
- Sonnert, Gerhard & Holton, Gerald. (1996). *Gender Differences in Science Careers*. New Brunswick: Rutgers University Press
- Suchman, Lucy. (1987). *Plans and Situated Action. The problem of human-machine communication*. Cambridge: Cambridge University Press
- Traweek, Sharon. (1988). *Beamtimes and Lifetimes*. Cambridge: Harvard University Press
- Traweek, Sharon. (1995). Bodies of Evidence. Law and Order, Sexy Machines, and the Erotics of Fieldwork among Physicists. In Susan Foster (Ed.), *Choreographing History* (S. 211–228). Bloomington: Indiana University Press
- Traweek, Sharon. (2000). Faultlines. In Roddy Reid & Sharon Traweek (Eds.), *Doing Science + Culture* (S. 21–48). London: Routledge
- Valian, Virginia. (1998). *Why So Slow? The Advancement of Women*. Cambridge, MA: MIT Press
- Wagner, Izabella. (2006). Career Coupling. Career making in the elite world of musicians and scientists. *Qualitative Sociology Review*, 2 (3), 26–35
- Wagner, Izabella. (2009). Transmobility – Mobility in the Career of a Laboratory Researcher. Paper presented at The Mobility, Science, and Culture conference, Braga, 23–24 of November 2009
- Xie, Yu & Shauman, Kimberlee A. (2003). *Women in Science*. Cambridge, MA: Harvard University Press

Zur Person

Helena Pettersson, PhD in ethnology and gender studies, researcher at the Dept. of Culture and Media Studies at Umeå University in Sweden. In her current project, she is studying academic mobility among plant scientists. Focus of work: intersection of ethnology, gender studies and science & technology studies (STS), gender and information technology and masculinity and experimental practices among plasma physicists

Kontakt: Dept. of Culture & Media Studies/ Ethnology, Umeå University, SE 901 87 Umeå, Sweden, Tel.: + 46-(0)90-786 70 55

E-Mail: helena.pettersson@kultmed.umu.se