



ADVANTAGES AND DISADVANTAGES OF SOJOURNS AT FOREIGN UNIVERSITIES IN THE RESEARCH TRAINING PERIOD

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Abstract: *This paper discusses the advantages and disadvantages which a prolonged period at a foreign university, as part of his or her research training, offers the doctoral student. Despite increased interest in student mobility at the postgraduate level, little research on actual experiences of sojourns abroad among doctoral students has been conducted. The study shows that in general benefits far outweigh the problems related to such stays. Help with dissertation work, development of general research qualifications, and personal development are regarded as the most valuable experiences; whilst delays in work on a thesis, poor contact with professors at foreign institutions, and family and social problems seem to be the principal problems. A number of issues seem to be inhibiting the extension of foreign doctoral training among Nordic postgraduates: tensions and dilemmas within the research training programme, lack of time and funding, lack of motivation and internal support, nationally oriented theses, and family obligations. The study concludes that this kind of mobility is one means, albeit an important one, of enhancing the quality of doctoral training and stimulating young scholars' professional development.¹*

1. INTRODUCTION

There is a long tradition in the Nordic countries that research training should be undertaken in close contact with international research: through encouraging postgraduate students to take PhDs abroad; by providing financial support for prolonged visits to foreign universities during the training period; or through supporting attendance at international training courses, seminars and conferences.

These efforts are due to the perception that small countries with limited economic and scientific resources cannot cover all areas of research themselves. The only way for small countries to avoid scientific provinciality is to attach themselves closely to the research centres. In

those disciplines where scientific developments are fast, it is especially important to have access to the research done at leading institutions. In this respect doctoral students who receive research training at leading foreign universities play a vital role in information transfer from centre to periphery. Although compared to the bulk of other nations the Nordic countries have a well-established scientific infrastructure with strong ties to the research centres of Western Europe and North America, they still have a peripheral status in relation to these larger systems. As small countries, they will always be net importers of scientific knowledge.

Various motives lie behind the increased interest in student mobility at postgraduate level. At an international policy level, the motivation to stimulate mobility typically includes both commitment to the forging of a European scientific community on the one hand, and a wish to improve the quality of postgraduate research training on the other (Blume 1995a). For senior academics, responsible for research programmes as well as providing training to PhD students, motives may be similarly mixed. Motivations might derive from the needs of the research, or from a sense of the importance of exposure to other ways of working. And finally a similar complexity characterises the motives of individual students whose concern might be with gathering the data needed to finish their dissertation, or with a more general sense of their own personal growth as scientists.

Against this background, why have more postgraduate students not had a longer stay at a foreign university during their training period? Central authorities in the Nordic countries seem to take it for granted that a sojourn abroad will benefit a doctoral student more than staying at his or her own university for the whole period. Is this true, or can the disadvantages of leaving their home country for most students be larger than the advantages of a stay abroad? Are financial arrangements good enough, or are other reasons more predominant for not going abroad? In these respects doctoral students may face some of the same problems and challenges as students taking part in EU student exchange programmes (Teichler 1996). Still, postgraduate students working on doctoral

¹ This paper is based on S. Kyvik, B. Karseth, J.A. Remme, S. Blume: 'International mobility among Nordic doctoral students.' *Higher Education*, 1999, 38, 379-400.

dissertations have specific challenges to cope with, and these differ from the challenges, which either undergraduate students or academic staff face. Unfortunately, little research has been undertaken on this issue. The aim of this paper is, therefore, to illuminate the incentives and disincentives, the benefits and disbenefits of research visits to foreign academic institutions.

The interview data, which this paper builds on, are drawn from three research projects. The interviews in Denmark, Finland and Sweden were undertaken in 1995 as part of a feasibility study for the European Commission on the internationalisation of research training in the EU (Blume 1995a). The Norwegian data were gathered in 1996-97. One project commissioned by the Research Council of Norway focused on internationalisation and research training in the natural sciences and technology (Karseth 1997), and another one commissioned by the Norwegian Ministry of Education, Research and Church Affairs looked more specifically at the usefulness of stays abroad during the research training period (Karseth, Kyvik and Remme 1998). In addition, the paper refers to a survey carried out by the Danish Research Academy (1996). That study reports the results of a questionnaire study among Danish PhD students who had been abroad during parts of their research training period.

In many instances a relatively marked difference between the social sciences and the humanities on the one hand, and the natural sciences and technology on the other can be shown. This also pertains to the training of doctoral degree students (Becher, Henkel and Kogan 1994, Kyvik and Smeby 1994, Blume 1995a). The difference is, among other things, related to the degree of collective research. Within the natural sciences and technology, research is generally based on collaboration, while within the social sciences and humanities it is much more individualistic. Expectations about the usefulness of a sojourn abroad, how it is organised and the outcome of such a stay might therefore be different. Accordingly, we have chosen to compare the internationalisation of research in the social and the natural sciences, as representatives of the "soft" and "hard" sciences.

2. USEFULNESS OF STAY ABROAD

The interviews indicate that in general both professors and students share the attitude that a stay abroad could be an important part of research training. The general impression is that such visits have been important for those who have experience from stays abroad during their PhD training period, whether they are students or professors who look back on their own sojourns, and irrespective of field of learning. Some professors indicated that their own successful stays abroad as apprentices were the main reason why they encouraged their own research students to go abroad for a

period of time. The positive experiences seem to outweigh the negative ones by far.

Based on the interviews, we made an analytic division between three reasons regarded as providing significant justifications for periods spent at foreign institutions.

- Help with dissertation work
- Development of general research qualifications
- Personal development

Help with the dissertation work

For many PhD students the most important aim of the sojourn is to discuss their thesis work with a professor who is a specialist in the field. In this way the quality of the research might be improved, e.g. through applying new measuring techniques, by doing new experiments, by discussing new literature, or by getting a deeper understanding of the nature of the materials or processes studied. Many of the interviewees thus maintained that visits abroad had a positive influence on the quality of their theses. In all the Nordic countries people mentioned that since their research milieu was often small, the stimulus provided by a new and wider range of colleagues could greatly increase the quality of their research work.

Many of the interviewees said that the most important reason for their stay abroad was the collection of data, field work, access to scientific equipment, databases, and literature which is needed for their dissertation work and which are not available at home. Comments like "if you are doing African studies, a sojourn in Africa is necessary if you want your work to be taken seriously", were not unusual. In experimental disciplines, it is sometimes necessary for research students to go abroad to make measurements on equipment not available in their home country (e.g. CERN), or to learn new methods and techniques that would be a prerequisite for doing the research work.

Development of general research qualifications

Another aim of going abroad is to take courses or attend seminars to learn new theories, perspectives, methods, etc. in order to develop one's research qualifications independently of the scope of the dissertation. Some students mentioned that they wanted to become more acquainted with theories and the most recent findings in their field. It would be easier for them to do this in countries (especially the USA) where departments are larger and may be better than in their home country, and where research traditions may be different.

Personal development

In addition to the directly measurable academic results of a visit abroad, the interviewees mentioned many other conditions which were important and which we can relate to the concept "personal development". Many students seem to mature faster during such a stay than they otherwise would have done, and adapt more easily to the international scene. When looking at experiences in retrospect, research students typically attach great importance to the more general aspects of their experience; to having overcome all kinds of obstacles and grown through their experiences. They also mention that their improved language skills are a personal gain, and that learning to manage in an international research environment has strengthened their self-confidence.

Impact of stays abroad on publishing behaviour

Although opinion regarding the benefits of research visits abroad is overwhelmingly positive, the consequences for a (research) career is a different matter. To our knowledge no study has been undertaken that examines whether postgraduate students with a stay abroad have different careers than those who spent the entire research training period at their own university.

An important aspect of the scientific career is publishing. A questionnaire study among all faculty members of the rank of assistant professor and higher at the Norwegian universities has examined the relationship between long-term research stays abroad and publishing behaviour (Kyvik and Larsen 1994). If we assume a causal relationship between research stays abroad and productivity, the effect was very small on the total output of publications, but strong on the extent of international publishing. Faculty who had had at least one stay abroad had on average 15 per cent more publications than their colleagues who had not. This difference increased to more than 60 per cent with regard to publications in a non-Scandinavian language.

The study by Kyvik and Larsen also shows that those who have had a long-term stay at a foreign university have a broader contact pattern with colleagues abroad than those who have not had such a stay. Statistical analyses indicate, however, that long-term professional sojourns abroad have a very small independent effect on productivity in international publishing. If such stays are not followed up by keeping in touch with foreign colleagues, there are virtually no differences in productivity between those with stays abroad and those without.

The survey of tenured faculty at Norwegian universities supports the results of the present interview

study. Stays abroad seem to have a positive effect on career developments. However, the causal effect is difficult to specify because it is not easy to ascertain to what extent research performance is affected by such a stay, or to what degree it is the best students who go abroad. We assume, however, that a long-term stay abroad will typically enhance the inherent international orientation of those who choose to have such a sojourn.

3. ORGANISING A STAY ABROAD

How are institutions abroad selected?

The process of selecting a foreign university for a visit seems to be very different across fields. There are large differences between the natural and social sciences with respect to how stays abroad come about and get arranged. In disciplines like physics and chemistry it is supervisors who typically take the initiative and send their students to universities where they have personal contacts, and where they know that the students will be taken care of. In most cases the supervisors collaborate with colleagues at these universities. Many professors mention that they deliberately choose departments with a strong reputation, and maintain that this is the reason why these stays function well for the students.

In social science disciplines the process of organising a stay abroad seems to be much more a matter of the students themselves taking the initiative. Many students report that they spent much time trying to make contacts, writing letters and hoping for an invitation. Such practical problems and hindrances are of such gravity that some give up trying.

Irrespective of discipline, few students were satisfied with the practical arrangements at their own university for studying abroad. They complained about having to do most of the work themselves, which takes time and effort. The impression is, however, that natural science departments seem to some extent to have developed better routines and regulations for visits abroad than social science departments.

Preference for countries

The important research nations, USA, Great Britain, France and Germany, have traditionally been the most visited Western countries for doctoral degree students from other countries. Many of the most renowned research institutions are in these countries, and in addition these countries have languages which are important in international research communication. This is especially the case for English. Statistics illustrate this Anglo-American tendency (Kyvik and Tvede 1998). Almost half of the Danish doctoral degree candidates in 1993 who had longer stays abroad went to USA and about 20 per cent to Great Britain. Of the Finnish doctoral

degree students who received financial support for studies abroad in 1992, approximately half went to USA and about 25 per cent to other European countries, of which Great Britain was the most attractive. A 1990 Norwegian study shows that of those who had had a research training position during the previous two decades, and who had had a longer stay abroad, 37 per cent went to USA and 15 per cent to Great Britain. Relatively few went to Germany (7 per cent) or France (6 per cent), or to the neighbouring countries Sweden (6 per cent) and Denmark (2 per cent).

There are two major reasons why Nordic graduate students prefer the USA. Traditionally many established researchers have good contacts with American colleagues, and research environments in USA are also among the best and seen as the most interesting. Postgraduate students are influenced by the travel patterns of their mentors. Statistics from Norway show that 55 per cent of tenured faculty members' long-term stays abroad during the period 1988-91 were in the USA, only 8 per cent to a Nordic country, and 27 per cent to other countries in West Europe (of which Great Britain (10%) was the most frequently visited) (Kyvik and Larsen 1997). That so few graduate students have longer stays at European universities is partly language related. Knowledge of English is much more widespread than that of German or French, and in addition, English is the dominant language in scientific communication. Therefore, studying at an English-language university for many may be the most effective use of time and resources during a limited fellowship period.

The European Commission's work in alleviating the hindrances for transnational mobility indicates the wish for an increase in visits abroad and research mobility within Europe. In the long run, this might contribute to changing today's travel patterns.

4. NEGATIVE EXPERIENCES AND PRACTICAL PROBLEMS

Although very many supervisors and graduate students have had positive experiences from studying abroad, there are also disadvantages and problems connected with such visits. We can distinguish between three conditions: First, a period abroad can lead to delays in work on a thesis; second, it can be difficult to establish good contacts with professors at foreign institutions, and third, there can be personal problems connected to family and friends.

Delays in work on a thesis

A stay abroad will often result in delays in time to degree. Several of those interviewed mentioned that the frame of three years is too short to complete course work and thesis requirements, and study abroad. Several of the research fellows who had been abroad said that they were

delayed in working on their theses. They pointed out many practical matters that had to be arranged when they arrived, and that these could often take time: getting established in an unfamiliar place; looking for a place to live; finding a day care centre or school for their children; getting used to the routines at the new institution, etc.

In addition to purely practical problems, many doctoral candidates had problems of continuity with work on their theses. Experiments had to be repeated abroad as there was different equipment or new techniques, data on Nordic conditions were not easy to collect, it was difficult to maintain contact with supervisors in their home country, etc. Although the visits abroad were generally regarded as very valuable in spite of such problems, this does not mean that all of those who had problems thought that their positive experiences outweighed the delays in their theses work.

Poor contact with professors at foreign institutions

Another common problem is that it is not always easy to have good contact with professors at the host institution. This limits the academic benefits which could be gained from the visit. Some students therefore become disappointed because "the famous professor" did not have much time for them. In addition, students holding status as visiting scholars are not enrolled in the ordinary PhD programme, and the host department has no responsibility for their training. Several students mentioned that it had been difficult for them to become part of the research milieu, and that it was very frustrating that nobody seemed to feel responsible for them. Several of the interviewees argued that it is very important that there should be a mentor at the foreign department who has agreed to take care of the students intellectually and socially. It should be the supervisor's responsibility to assure such an arrangement.

Here there are presumably differences between "soft" and "hard" subjects. Foreign sojourns build more upon supervisors' personal contacts in the natural sciences and technology than in the humanities and social sciences. In experimental subjects, research students are especially able to participate in teamwork at foreign institutions, where professors or other researchers might take personal interest in their research, and they might publish research results jointly.

Family and social problems

In addition to problems of a more practical nature which can delay work on a thesis, personal problems may also occur which can reduce the utility of a stay abroad. These usually concern family situations and the lack of a social network. Many postgraduates have families which

they take with them. In such cases, several interviewees reported difficulties in getting adjusted.

5. WHY DO MORE STUDENTS NOT HAVE STAYS ABROAD?

Commenting on the problems of the further internationalisation of research training in the OECD countries, Blume (1995b) has noted that despite the growing commitment at both national and institutional levels to the internationalisation of research training, major barriers remain. These derive in part from the lack of resources available for funding stays abroad, and partly from the readiness of individuals to travel. Blume argues that the modern research trainee is very likely to be committed to a partner who is also trying to have a career, there may be children whose schooling cannot easily be disrupted, and there may be roots in the local community. In addition, adequate housing often cannot be guaranteed in the designated city.

Based on experiences from the Nordic countries, we can distinguish five conditions which may be restricting the scale of research and study abroad during the PhD period:

- a) Tensions and dilemmas within the research training programme
- b) Lack of time and funding
- c) Lack of motivation and internal support
- d) Nationally oriented theses
- e) Family obligations

Tensions and dilemmas within the research training programme

What should a visit abroad be used for - work on a thesis or taking doctoral degree courses? This seems to be a dilemma for some students, and there are different opinions about priorities. The general impression from the interviews is that in general students should do research while abroad, but that this must depend on the length of the stay and on other circumstances. There is, however, no clear consensus on whether students should concentrate on taking courses while staying at a foreign university, or whether they should give priority to their dissertation.

The question of what a visit at a foreign university should be used for is, however, related to the question of the duration of the stay. A short sojourn would make it difficult to combine research and course work, while such a combination would be much easier to undertake during

a one-year stay. The interviews reveal that no common opinion exists; this would be dependent on many different factors. The optimal time period might range from 1 month to 1 year or even more, dependent on the aim of the sojourn, and the nature of the dissertation. As an example, CERN-related research might lead to several short stays abroad to take part in joint experiments, while (eg anthropological) field work in another country would need a relatively long period of time. Still, most of the interviewed professors and students seem to think that a stay abroad should be of at least 6 months' duration.

Blume (1995a) points out that there is a possible conflict of aims between two ways of assessing research training. From the point of personal scientific growth, working in new ways on different topics can be greatly enriching. But from the point of efficiently completing a dissertation on time, such a visit may be regarded as counterproductive.

The interviews indicate that a number of supervisors do not want to support a longer stay abroad if it does not contribute to the completion of the dissertation project. For students in the natural sciences and technology, who work on projects closely associated with their supervisors' projects, going abroad will bring about delays, not only for their theses, but also for their supervisors' research. A longer period abroad can thus be a dilemma for supervisors and students if the progress of a project involves mutual interdependency between supervisors and doctoral degree candidates.

In experimental disciplines, several professors and students argued that it is not always that easy to go abroad for a period. First, it often takes much time to develop and build new instruments for the experiments, and second, experiments take time. However, there were also those who maintained that the prime aim of the PhD is to train students, and it is more important that students go abroad for a period, than that they act as 'cheap labour' for their supervisors.

Lack of time and funding

This argument is twofold. Some candidates do not go abroad because they cannot finance their stay, others stay at home because they fear that a visit abroad will delay their studies, and that they will have problems financing the extra time they will need to complete their theses. Lack of time and funding are thus problems, which can be viewed independently of each other, or as two sides of the same coin.

Many of the interviewees maintained that funding is restricted, and that more students probably would have gone abroad if national funding sources for such stays had been more abundant. Several students also said, however,

that the lack of time is a greater problem than financing a research visit.

A general impression from the interviews is that a stay abroad for at least six months is not easy to fit into a three-year PhD programme without prolonging the duration of studies. Although very positive to such sojourns, several professors argued that three years is too short to complete course work, finish a thesis and have a research sojourn abroad.

Lack of motivation and internal support

The motivation to go abroad is connected to the expectations, which lie in one's own culture. In other words, these are conditions at individual departments and supervisors' ability and will to set up and prioritise such visits. Few of the departments visited prioritised sending students abroad. In addition, an individual student may not see the need for a stay at a foreign university, or may simply lack the motivation to go abroad, relatively independently of the expectations of his/her department.

Nationally oriented theses

Not all students work on theses that warrant a stay abroad. Several of the interviewees said that it would be better for some students to stay at home, either because they are studying Nordic conditions or because the expertise is here. The topic of theses may make it less relevant to travel abroad.

Family obligations

Family obligations are the reason most often mentioned why candidates complete their whole education in the Nordic countries. This is also the reason why most tenured academics do not travel abroad for a period (Larsen 1992). Some students mentioned that due to the changing division of labour between women and men it may actually be more difficult to travel abroad now than previously. Adaptations to two careers have to be made. In Finland it was mentioned that the traditional research training system has led to older PhD students who often have families. Those students may have problems in bringing spouses and children to another country.

6. CONCLUSION

The purpose of this paper is to shed light on factors relating to the organisation and the perceived value of longer research visits abroad, and although empirical data reported here are limited to the Nordic countries, I believe the findings have wider relevance. The study shows that there is general agreement among the informants that an international orientation in doctoral degree education and research training is valuable, and

that longer sojourns abroad are one important means of achieving this. There are three reasons for including a research visit abroad during doctoral degree training: help with the dissertation work (e.g. collecting data, accessing needed equipment, databases, literature, etc., which are not available at home), developing general research qualifications (e.g. participating in courses, seminars and discussions, making new contacts within the research community), and personal development (e.g. improving language skills and strengthening self confidence).

In subjects which are especially nationally oriented and where the topic of a thesis is of a national character, however, both supervisors and students point out that visits abroad will often not be relevant. Otherwise, there are no indications of sharp distinctions between fields of learning in regard to attitudes about the importance of studies abroad.

The study does however show clear differences between fields in regard to the way in which studies abroad are organised. Supervisors in the natural sciences often play a much more active role as supporters and initiators than their colleagues in the social sciences. In the natural sciences, supervisors' participation in planning research visits abroad for their students could be an important reason why doctoral degree students in these fields, to a lesser extent than students in the social sciences, did not mention negative experiences with regard to follow-up and contact with senior academics at foreign institutions. In the social sciences, it appears that Nordic research students have more difficulties in becoming integrated in the academic environments at foreign institutions. However, this might also be due to the nature of research itself, the collective versus the individualistic research style in "hard", and respectively "soft" subjects.

Although there are disciplinary differences between supervisors' participation in organising stays abroad, there is no evidence that there are any significant differences between fields of learning at department level when it comes to the degree of responsibility and support in arranging a stay abroad.

Most supervisors and doctoral degree students who have been abroad had positive experiences. However, such visits often include inconveniences and problems. A sojourn abroad can result in delays in completing a thesis. It is not always easy to continue experiments at foreign institutions, and moving and getting settled abroad can take place at the cost of effective working habits. Second, it can be difficult to establish good contacts with professors at the host institution, especially in those cases where students themselves have taken the initiative to study abroad and chosen where they want to go. Third, problems of a social

nature may arise, e.g., getting children used to a new environment and establishing social networks.

We have also discussed factors, which may be inhibiting the further extension of research visits abroad, however desirable these may be seen to be. These include tensions and dilemmas within the research-training programme, lack of time and funding, lack of motivation and internal support, national orientation of dissertation and family obligations. Family obligations and the lack of time and funding are mentioned as the most important hindrances by students in all fields. It appears, however, that the dilemma between work on a thesis, completing obligatory courses and visits abroad is greatest for PhD students in the natural sciences. Course work is generally regarded as a problem in regard to research visits abroad in these fields. This might be due to differences in emphases in various fields in the research contribution and the educational process in the training part of doctoral degree education (Blume 1995b, Smeby 1999). In most social science subjects, it is stressed that courses should be limited to areas, which support theses work, while in the natural sciences the intention is that courses should contribute to assuring academic breadth, making the training part more extensive. In these subjects, supervisors and students point out that obtaining required credits in the training part can be difficult to combine with stays abroad.

Measures are seldom undertaken at a faculty and department level in regard to arranging research periods abroad. Some of the interviewed students and supervisors, however, mentioned that it is important that the university as an organisation should be helpful with information and practical arrangements. This supports the assumption that responsibility for the internationalisation of doctoral degree education is not very formalised at a department and faculty level.

There is a widespread wish for internationally oriented research training, and longer stays abroad are considered an important means of achieving this. Despite the difficulties, which we have noted, most interviewees were positive and regarded the academic benefits as great. Nevertheless, it is still only the minority of doctoral degree students who have experienced research periods abroad. *Structural* factors (such as economic aspects and work duties), *academic* matters (e.g. the topic of a thesis), and *personal* conditions (family obligations) are reasons why more have not done so. An individual department's *culture* in regard to international orientation may also play a decisive role.

Should a longer visit abroad be mandatory? Even though attitudes towards stays abroad are very positive, neither the professors nor the students interviewed thought that such a stay should be a mandatory part of doctoral training. In many cases it would be better to do

all the PhD work at their own university, especially for those who use national sources in their research, and where the collection of empirical data takes much time. There are other ways of internationalising research training, of which participation in summer schools, conferences, workshops, etc was often noted. These too can allow researchers at an early stage of their careers to build up the personal networks within the scientific community, which may be so important to their subsequent professional development. The international mobility with which this paper has dealt is one element, albeit an important one, in a more general process of internationalisation, which needs to be stimulated in a variety of ways.

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