The “Knowledge Society” — A Glocal Challenge

The Science of Returning Home: A Study of Vietnamese Scientists with Advanced International Degrees

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Abstract: The present work addresses the internationalization of higher education and its links with the practice of science in Vietnamese universities and research institutions. Using qualitative data from ethnographic case studies of Vietnamese scientists shortly after their return from PhD studies abroad, the paper reveals the fragile links between international science training and the production of scientific knowledge in Vietnam. Using five cases, I show that upon returning to their home institutions in Vietnam, scientists become agents of change in the politics of science and knowledge production. However, as a result of the interaction between Vietnamese and foreign influences, their agency and their scientific habitus (re)encounter social, cultural, economic and political flows in the local contexts that challenge their ambitions to implement effectively ideas and practices learned abroad.

The case study of five scientists presented here argues for a more nuanced explanation of the power of internationalization to create (positive) change in the local contexts of developing countries. It reveals how scientific production becomes inseparable from the broader webs of social, political, economic and cultural relationships that characterize scientists’ particular local working environment.

Keywords: brain drain, developing/industrialized counties, development, foreign degrees/influence, habitus, higher education, influenza (avian), internationalization (of higher education), knowledge production, neo-colonialism, science and society, social networks; East/Southeast Asia, Vietnam; Pierre Bourdieu

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1. Introduction
Amongst scholars and practitioners alike, the internationalization of higher education is recognized as having important consequences for developing countries. This importance is not least due to the opportunities that it affords for the training of scientists from developing countries in leading universities in industrialized countries. The content and meaning of this influence, however, is a matter of debate. On the one hand, said influence is hailed as an opportunity for developing countries to make leaps toward and into a modern knowledge economy (Juma & Yee-Cheong 2005; Tremblay 2005). From another perspective, it is a contemporary version of a well-established colonial tradition, whereby wealthy countries extract capital from poorer peripheries (see Crossley & Tikly 2004; Tikly 2001; Nguyen et al. 2009). In the latter case, internationalized higher education is a social technology intended to convince scholars from developing countries that systematic inequalities are both logical and beneficial. The positive valuation discourse about foreign influence harkens back to a Rostowian “stages of growth” model (Rostow 1971) and relies on the metaphor of countries as biological organisms growing and becoming more complex along evolutionary trajectories. The neo-colonial interpretation invokes a political economy model that hinges on exploitative relations of exchange between metropoles and peripheries (Wallerstein 1979; Frank 1971). In both cases there is an underlying assumption that individuals returning to developing countries after higher education in industrialized countries can, rather unproblematically, transfer the newly acquired knowledge and practices to their home country. Furthermore, it is assumed that this transfer has significant (beneficial) implications for local development.

Empirical research shows that such transfers are both problematic and unreliable. Measuring scientific productivity in terms of published articles and patents, sociological studies have shown that where the
broader social, political, cultural and economic context is not supportive of doing international science, the possibility of returners to produce knowledge for international audiences is limited (Krishna & Khadira 1997; Velho 2004; Waast 2010). In those developing and newly industrialized countries where scientists have been more prolific in their production of scientific knowledge for both international and domestic consumption (e.g. Argentina, India, South Korea, Uruguay), their productivity is a consequence of a wider national political and economic context that created material and immaterial incentives for scientists to produce knowledge (Gaillard & Gaillard 1997; Barreiro & Velho 1997; Kreimer 1997; Song 1997). In countries where the broader political and economic context is less supportive, national programs to encourage scientific productivity have had little effect (Gaillard & Gaillard 1997). Rather, the possibility for scientists to produce knowledge for international consumption is dependent upon the degree to which they remain actively engaged in the scientific networks in wealthy industrialized countries, and thus relatively disengaged from their local scientific and political environments (Gaillard 1991).

While quantitative studies of scientific productivity do further our understanding of the links (or lack thereof) between the internationalization of higher education and the production of new scientific knowledge in developing countries, if taken in isolation, their explanatory power is limited. A recent review of scientific production in developing countries calls for considering, among other things, narratives of the local social, political and economic contexts in which science is practiced (Gaillard 2010). This is an area where ethnographic research can result in a meaningful and complementary contribution to our understanding of the links between higher education abroad, and knowledge production at home. The advantage of qualitative case studies, this paper being one example, is their potential to access the nuanced social, cultural, economic and political entanglements that characterize the work of scientists. This approach is well established in studies of science and scientists in industrialized countries in Europe, North America and East Asia (e.g. Fujimora 2000; Knorr Cetina 1999; Latour & Woolgar 1979; Traweek, 1988), but less so in developing countries. Myanna Lahsen’s (2007) work with Brazilian climate scien-
tists and Celia Lowe’s (2006) studies of Indonesian biologists are examples of the latter. Both Lahsen and Lowe discard the simple opposition of international and local fields of science to show in rich detail why scientists that trained abroad encounter difficulties establishing themselves as credible and reliable partners to other scientists, both within their domestic and their international networks.

In what follows I contribute to this growing literature with an ethnographic case study of Vietnamese scientists that have pursued PhD studies abroad and subsequently returned to Vietnam. The significance of social and cultural context is evident when young scientists leave Vietnam to pursue PhD studies in institutions of higher education in Europe, North America, Australia and Japan. They leave a Vietnamese system of higher education that bears strong influences from the Chinese and Vietnamese Confucian traditions, French colonialism, Soviet institutions, as well as some twenty years of steadily increasing integration with Western systems (Abuza 1996; Altbach 1989; Berlie 1995; Marr 1988; Nakayama 1995; Pham 1995; St. George 2003; Woodside 2006; Zink 2009b). The institutions of higher education that they enter abroad are themselves the products of diverse histories and cultural traditions. Thanks to wealth, infrastructure and communication technologies they — unlike most Vietnamese institutions — are also more closely integrated in international scientific communities, have the means and opportunities to keep up with global trends in higher education, and enjoy easier access to the latest in scientific knowledge and modern scientific equipment.

In most fields of science, successful completion of PhD studies is a critical step towards achieving credibility among one’s peers in a scientific community. It is a common, if not an exclusive, step towards acquiring what Bourdieu (2004) called scientific capital and disciplinary habitus. These two elements, roughly equivalent to having the respect

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1 Bourdieu explained human organization and individual actions by drawing our attention to how the habitus embedded in human minds links social structure to individual agency. For Bourdieu, habitus is a “socially constituted system of cognitive and motivating structures” (Bourdieu 1977, p. 76). A person’s habitus is the result of that person having lived under particular conditions and internalized attitudes and strategies particularly suited to those conditions. Furthermore,
of one’s peers and the adoption of scientific concepts and methods for investigating the world, respectively, are necessary for one to practice science and produce new scientific knowledge. In the following discussion I will show that the scientific capital and habitus, acquired by tertiary students who go abroad are not easily transferred to and practiced in Vietnamese institutions of higher education and research. Rather, what is described is an articulation of global trends in science and higher education which interact with local Vietnamese culture, politics and economics and is therefore ridden with negotiation, conflict, and to some extent failure. These findings indicate that neither imperialist governmentalities nor the scientific capacities in the minds of young scientists can easily triumph over resilient local institutions and traditions of science and higher education.

While Vietnam is a country where the national government strongly encourages international projects in higher education (Bezanson et al. 1999; Huang 2007; St. George 2006; Wilmoth 2004), it is also a country that lags behind many other Southeast Asian nations. Vietnam’s young scientists are one of the important conduits through which the internationalization of higher education is expected to transfer new knowledge and scientific practices. In this context, I ask: What challenges are encountered by young scientists that return to Vietnam after they complete PhD training at an institution of higher education in an industrialized country?; What are the social and cultural sources of these challenges, and what strategies do young scientists employ in response to them?

Irrespective of whether one is a pessimist or an optimist regarding the effects of the internationalization of higher education on developing countries, the answers proposed in this paper are relevant for developing a more nuanced and empirically grounded understanding of the articulation of foreign higher education styles in the language of local realities. Rather than finding different scientific paradigms (Kuhn 1962), or a separation between international and local science (Bourdieu 2004), my study shows that scientific production takes place within webs of political, economic, social and cultural relationships which have

habitus, by shaping the choices and actions of individuals, is responsible for the (imperfect) reproduction of social structures over time and across generations.
both international and local characteristics (Jasanoff 2004; Latour 2004). In the cases of individual scientists that follow, we will see that production of scientific knowledge is inseparable from these relationships, as is the possibility for scientists to practice the skills that they acquired abroad.

The research results presented in this article were primarily culled from semi-structured and informal interviews, as well as small group discussions, conducted between October 2007 and July 2009. During this period I carried out eleven months of ethnographic fieldwork in Vietnam. The present account draws in particular upon interviews and participant observation in scientific institutions and universities in the cities of Can Tho, Ho Chi Minh City, Hue, Hai Phong, and Hanoi. Interviewees worked in the fields of natural and social science related to agriculture and natural resource management. The interviews were generally conducted in English. As a participant observer in the lives of researchers, I joined them at scientific workshops and conferences, organized and led research grant proposal writing sessions, toured their research institutes, followed them to their field sites, and joined their parties, dinners, and other informal social events.

My informants were 60 Vietnamese scientists at different stages of their scientific career who had pursued advanced studies abroad (Master’s or PhD degrees), and then returned to Vietnam. At the time of the interviews, 27 of the scientists were aged between their late 20s and early 40s. These interviewees are a privileged group of Vietnamese scientists in the sense that they both had access to training abroad and they were all successful in finding some form of scientific employment upon their return to Vietnam. It is from this group of interviewees that the five cases to be discussed here were selected to help outline a general range of possibilities within the set of more successful returners to Vietnam that I encountered during my fieldwork.²

² The cases presented below are part of a chapter in a larger anthropological study of science, international development, and environmental policy making in Vietnam by Dr Eren Zink. See his NIAS monograph Hot Science, High Water (April 2013). [ed., note corresponding updates in the body text and references]
2. A Case Study of Scientists Returning Home

Like previous generations, newly trained scientists that return to Vietnam after completing PhD or Master’s training abroad (re)enter local institutions and university departments populated by colleagues with a wide range of backgrounds and scientific histories. The latter category of scientists were trained during the last 50 years or more in institutions of higher education in, for example, the (former) Soviet Union, China, Europe, Australia, Japan, Korea, and North America, apart from Vietnam itself. And, while the majority of the staff members in research institutions and universities are trained wholly or partly in Vietnam, it is not uncommon for scientists with Masters or PhD degrees to have been trained in more than one country and to have spent many years abroad.

During my visits to Vietnamese research institutes and universities between 2007 and 2009, young scientists often spoke about going or having been to Europe, Japan, Australia or North America to acquire “new knowledge” and bring it back to Vietnam. The “new knowledge” that young scientists mentioned is a scientific habitus that includes scientific skills, facts and subjectivities that are credited with being more creative than what the Vietnamese system currently offers (Phuong 2007; Tran 2006). In particular, young Vietnamese scientists see the acquisition of new knowledge primarily as a means to achieve innovation and national development (Zink 2009b). Furthermore, they are not alone in holding this view. The discourse of scientific capacity building leading to innovation and economic development matches Vietnamese national policies and practices that encourage young Vietnamese scholars to go abroad for post-graduate training (St. George 2006).

However, when newly trained scientists return from abroad and re-enter scientific institutions, they do so at the bottom of a strongly hierarchical system dominated by long established kinship and social networks. In this local context, the young and politically unconnected have very little access to the research funds for doing science and lack the power to change the way science is practiced or higher education is organized. Paradoxically, senior scientists who do have access to the means of doing science, often have very little time for research due to
their administrative duties as well as their obligations to maintain political and professional relationships (Zink 2009b).

Senior scientists interviewed explained that the younger generations of scientists are not keen on working with them on their projects. They sometimes interpret this as a lack of commitment to science and to the nation, and blame this lack of commitment on changes in the culture and socio-economic context of science in Vietnam. Meanwhile, the younger generation argues that their scientific leaders are not interested in doing modern scientific research and that scientific work does not offer a sufficient standard of living in contemporary Vietnam’s rapidly growing market economy. As a result, they explain that they look for other opportunities to use their scientific training. Since the traditions of hierarchy and respect for one’s elders discourage open discussion and debate regarding scientific approaches, this disagreement is usually not communicated explicitly.

One result is that young scientists look for new ways to circumvent the limitations of the established scientific system in Vietnam. Another is that senior scientists are looking for ways to harness the potential and promise of their junior colleagues’ new knowledge for their own scientific and political goals. In this context, the introduction of a new kind of scientific habitus brings new, but indirect, opportunities to re-negotiate the long established senior patron–junior colleague relationships in the scientific institutions.

Below I take the stories of five young scientists that have recently returned to Vietnam to illustrate a range of challenges and opportunities encountered by privileged returners. These stories tell us why young Vietnamese scientists join The Brain Drain (Dr Dzung); how they manage to remain productive scientists in Vietnam (Dr Mai); why they give up trying to be productive scientists (Dr Phuong); why they remain hopeful, despite numerous set-backs, that they might one day be able to practice their skills (Dr Huong); and, what they do while they are waiting for new opportunities (Dr Thao). Names, places and some personal details of the researchers have been changed. However, the content of these ethnographic cases is accurately based on interviews and participant observation, as is described below for each individual case.
2.1 Dr Dzung

Dr Dzung is 34 years old, married, and has a son. When we met for the first time in 2007 he had just returned from Europe to his biology department at a regional university in Vietnam. At that time he was finishing the writing of his dissertation and attempting to re-establish himself in his department. During our second meeting in 2008, Dzung was still trying to re-establish himself in his department. His dissertation had been completed, and he expected to defend and obtain his PhD degree later that year.

Dzung comes from a family of scientists, and to some extent has followed in the footsteps of previous generations. However, he has not specialized in the same field as his father, and he belongs to a university where he does not have strong kinship connections to the head of his department, or to the dean of his faculty. According to Dzung, this has posed a significant problem for him upon his return.

Dzung finds that without such connections he does not have the power necessary to carry out scientific research according to the methods and standards he learned during his training abroad, or to teach classes that use the knowledge that he has obtained there. Research grants from national sources that are awarded to his department stay in the department, but they are channelled to faculty that are members of existing kin networks. Meanwhile, faculty that are not members of the networks are fully engaged in looking for short-term consultancy or extra teaching opportunities. According to Dzung, the latter group has little time for or interest in doing scientific research.

He is pessimistic regarding opportunities to obtain international research grants that would enable him to do research. According to Dzung, even to apply for a research grant he would need the signatures of his superiors. However, these signatures will be costly for him to obtain, both in money and in terms of sacrifices he will have to make to the direction and topic of the proposed research project.

3 The interviewees are coded under given rather than family Vietnamese names. The author prefaces these with “Dr” at introduction points and in the Conclusions section. For the beautiful meanings of the five names visit this website: e.g. “Dzung” (rendered there phonetically correctly “Dung” and by a standard graphic euphemism here) means “heroic, heroism”. [ed.]
When we discuss future plans, Dzung is undecided. On the one hand, he wants to remain in Vietnam, to do research in the field of agriculture, and to make a contribution to improving his country. Vietnam is also the place where he and his wife feel at home, and they do not like the idea of leaving. However, his wife’s salary as a school teacher and his salary as a lecturer combined are around $220 USD per month. They find that this is barely enough to support the needs of their son, let alone their own. As a result, they are actively considering their alternatives.

One option is to move to Australia where Dzung has a close relation who recently moved and found work there. If they do so, he feels that he has slim chances at best to continue with his scientific work at an Australian university or research institute. However, he will likely be able to find a job in a company where he can earn a reasonable salary.

Another option was that they remain in Vietnam for some more months or years while he looks for a position with an international project that is related to his field of study. This option, he feels, is the one of the few alternatives available for a scientist in his situation to both stay in Vietnam and to use his training to make a contribution to the well-being of his country. However, not being located in one of the major cities of Vietnam, he is not optimistic about his chances for obtaining such a position. By 2009, Dzung, together with his wife, had found a third option that involved leaving Vietnam for the second time. Despairing of finding opportunities to use his international scientific training in Vietnam, he had returned to Europe to take up a post-doc position.

Dzung’s case illustrates a situation that is commonly experienced by Vietnamese scientists who return home. He went back to Vietnam with a PhD degree and experience that would be relevant for the improvement of agricultural production in his country. Nevertheless, lacking strong social, political and economic networks, he found little opportunity to use those skills to produce new scientific knowledge. As a result, he decided that his best option was to take his skills elsewhere.
2.2 Dr Mai

Dr Mai returned to Vietnam in 2006 after completing her PhD in agricultural sciences at a Western university. By 2010 she was working at a regional university and expected to continue to do so for many years to come (personal correspondence). She will not leave the university, partly because she is obligated to stay for a fixed term under the conditions of her scholarship to study abroad. This is a typical obligation accompanying Vietnamese government support to study abroad. Another reason for staying is that she feels that she has a moral obligation to serve her country because of the opportunities from which she has previously benefitted. At the time of our interviews Mai was under 40 years old, and living with her husband and child.

During one of our first discussions in November 2007, Mai proclaimed that she likes a challenge and would like to use her new knowledge in her subfield of agricultural science to help poor people in rural Vietnam. For her, research results are essential for achieving improvements in development and natural resource use. She says, “If you do not have the knowledge, how can you argue and make change?”

Mai is able to do scientific research, both at her university and in the field, and she publishes her results both nationally and internationally. This is partly because she is an accomplished scientist able to win research grants from international organizations, and partly because she and her family are financially well off and politically well-connected (a close relative holds an important political position at the national level, and her husband has a well-paid position). It also helps that she is supported by her family and able to travel extensively, despite being a mother. These factors give her more freedom within her university department to do what many new PhDs have difficulty doing upon returning home, to stay active in research and to contribute to the teaching curriculum for her students.

When asked about her future plans, Mai explains that she wants to avoid administrative positions within her department and faculty. These positions, she says, are costly in time and money. With respect to the latter, interviews with Mai and other scientists reveal that it is common practice for the winning candidate for such a position to be required to pay a fee that can far exceed the yearly salary of that position. When
one begins to climb up the hierarchy, there is little opportunity for doing further hands-on research. Mai would like to stay active in research and cultivate her international and national sponsors until such a time that she could start her own semi-independent research centre, either as an NGO or under the umbrella of her university.

In the meantime, she hopes that by building good relations with her senior colleagues in the university administration she will slowly be able to convince them to include concepts and teaching styles that she learned at her university abroad into the Vietnamese university’s own training programme. She is also aware that it is not possible for her to go ahead without support from the administrative hierarchy of her institution, as resistance to changes in the curriculum can be as strong from students as from superiors. Nevertheless, she sees the reform of teaching curriculums with inspiration from abroad as important for the future of Vietnamese higher education, as well as its socio-economic development.

One strategy for cultivating the relationships necessary to achieve her objective is to offer her grant writing and project design skills to senior persons in the university administration who are developing university projects. In exchange for her services, which help university administrators bring in new projects with national and international funding, she is able to gain their support for her modest reform initiatives in her department.

Mai is one of the scientists among my interviewees who has been most successful in staying active in science upon her return to Vietnam. She is also (among the few who are) still optimistic about opportunities to use the skills acquired during her PhD studies to create opportunities for development in her country. She is optimistic that she can help to bring positive changes to the way students are trained in Vietnam and to the way research is done. Mai summarizes her approach to her work in terms of flexibility and patience. She believes that one must remain flexible and generally work with the university and science systems, all the time watching out for opportunities to bring about positive change.

That being said, Mai’s situation is not one that can be easily emulated by other young scientists. She has advantages that include political and social-economic networks and enable her to maintain a level of
independence within the university system that a less well-connected scientist would have little hope to replicate. And, while other interviews indicate that being female is a disadvantage in Vietnamese science, for Mai her financial stability, the support of her husband and family, and her determination to disregard many of the cultural expectations placed upon women have allowed her to continue to be an active scientist upon her return to Vietnam. This case, which is the most successful one to be presented here, illustrates the importance of strong social relations, both at home and abroad, for the successful transfer of scientific skills.

2.3 Dr Phuong

In contrast to Dr Mai, Dr Phuong told me that she was “a failure” at our first interview in 2008. This is surprising given that her academic CV and personal history indicate that she is a model for the potential of the internationalization of higher education to contribute to scientific capacity in developing countries. She is a scholar and a scientist who specialized in natural resource management. She has excelled as a Master’s and PhD student in well-known universities abroad. Phuong has been a productive researcher on topics related to natural resource management in Vietnam and is well respected by her scientific peers, both in Vietnam and abroad. She has worked in reputable institutions both at home and abroad, won research grants and been an active and reliable contributor to both international and Vietnamese research groups. Now Phuong is married and a mother, and works in a research institution in one of Vietnam’s major cities.

A few years ago she was young and promising. Now Phuong is edging past forty years of age and the promise that others saw, and still see in her, is not something she herself feels. Instead, she is disenchanted and wondering if her generation of scientists is a lost one. It is lost, not in the sense that generations were lost during Vietnam’s military struggles, but lost in terms of being able to make a difference in today’s Vietnam. She feels this way despite being well-educated, idealistic, and committed to her country’s goals of sustainable development and poverty alleviation.
“What do you mean by ‘failure’?” I asked. Phuong explained that science, for her, is a way to know more deeply about the livelihood challenges of rural natural resource users. Science, in her view, allows one to go beyond giving aid to alleviate a problem in one place in the short term, and allows one to achieve a level of understanding about the systems at work that can help to solve the problem in the longer term and for a larger group of people. This perspective is one she developed in her training abroad. However, she does not believe that she has been able to achieve this in her scientific research. Her frustration was palpable as she explained:

You do research, but who listens to you, and what good does it do? It is kind of bitter... Nobody listens to the results of your research, and nobody cares. Even the knowledge that one learns while away, I think very little of my own experience from abroad has been applied [in Vietnam].

I asked her to explain why, and she replied:

I would say the whole system is not ready to change. We came back [from studies abroad] with the set mind for change, and the system is not ready for change. So maybe we just got disappointed. Some of us are more optimistic. Many times people say “just go along and wait for the right time to make a change,” but I’m not so convinced.

When Phuong spoke of making changes, she referred to the research system in Vietnam, but also to the overall political and economic system. She saw growing inequalities in wealth and rapidly increasing environmental degradation. These sentiments were similar to Dr Huong’s, below, if slightly less outspoken.

Dr Phuong’s case illustrates a situation where young scientists return with skills and intentions to both produce scientific knowledge and contribute to national development. However, the financial and moral support of international organizations were not sufficiently strong allies to enable her to maintain a space where she could practice her science.
As a result, she no longer sees herself as an agent of change in Vietnam, or a producer of scientific knowledge.

2.4 Dr Huong

I interviewed Dr Huong, who is married and has children, during 2008 in one of Vietnam’s larger cities. As we sat in the courtyard of a school, Huong explained to me why she sees little hope of using the research skills that she learned while doing a PhD program abroad.

If one wants to work in a government institution, she explains, the research environment and the salary are both lacking. With five years working experience and a PhD degree she could expect to earn approximately $100 USD per month at a government research institution. Meanwhile, her expenses for sending one child to a public preschool alone would consume more than half of her salary. If one also deducts insurances and other incidental costs incurred by a working mother, she would have virtually nothing left of her salary.

In Huong’s opinion, the low public sector salaries also contribute to the poor working environment at research institutes. Since the salary is insufficient, researchers must spend their time finding and working on projects that they can take on in their individual capacity. Though they show up at their place of work, they work for themselves on small consultancy projects. As a result, there are few incentives or opportunities to work together as a team.

Huong goes on to explain that in her field of biological science, successful research is carried out in teams of researchers that work together towards common goals and have access to a shared pool of scientific equipment. According to her, the fragmented nature of the working environment in Vietnamese research institutions discourages this type of collaboration.

Furthermore, the hierarchies within the institution and the different scientific backgrounds of younger and older researchers work against collaboration. In Huong’s view, national sources of research funding are primarily made available to very senior members of the institution. Sometimes, they are even formally retired from their duties. Younger scientists usually cannot participate in research activities, or can only do so in a very marginal way.
At the same time, younger scientists that have recently finished their training have learned different research methods than their superiors did in previous decades. The younger generation is also familiar with a different body of scientific knowledge than are their older colleagues. These differences in background and training can create a situation where it is difficult for younger scientists to appreciate the value of their seniors’ scientific approaches. According to Huong (and many other interviewees), it is difficult to discuss such matters with one’s supervisors, given the deeply rooted tradition of according respect to one’s elders and refraining from questioning their authority.

Huong then explains another reason for her pessimism: “I want to do something related to the field that I studied, of course. But I’m a woman, and I have a baby.” She explains that if one wants to work for the government, then one has to be at the office from 8 am until 5 pm. This is difficult for a woman with a baby. Meanwhile, if one wants to work for an NGO, then one can work more flexibly in the evening and on weekends. However, NGOs have many projects and these often require one to travel for extensive periods of time, something that mothers with young children often find very difficult to do. The result is that the structure of the working day, both at NGOs and government organizations, is a challenge to young mothers.

Despite these challenges and the fact that many of her friends and colleagues have left Vietnam, Huong is committed to staying in Vietnam. She will continue to search for opportunities to use her training. And, in the broader context of changing the way science is done and contributing to the development of Vietnam, she says:

If we do not come back, Vietnam cannot change. If we come back, face to face, then we can do something. One person cannot do anything, but if my generation cannot change, then the next one may be better. If we do not come back, then the next generation cannot be better.

Huong’s persistence and perseverance are evidence of the potential for young scientists to be agents of change, in the shorter or longer term. At the same time her experience necessitates a more nuanced view of the power of internationalisation projects to change local scientific practice. In general, her case illustrates the situation of scientists who return to a context where there is little hope of using their newly
learned scientific skills, but are committed to contributing to the creation of a new politics of science.

2.5 Dr Thao returns home and catches a small case of the flu
This last case brings us to a medium sized university, where I met Dr Thao. During my visit he was asked by the Dean of the animal sciences faculty to give me a tour of the university’s well equipped laboratories. Such a tour was a common element of my visits to universities, and walking around with a scientist in his or her work environment was oftentimes more informative than a formal sit-down interview.

Usually, on such tours I would be shown an aging laboratory with old equipment in various stages of disrepair. The poverty of the laboratory and the age of the equipment would then be used by the Dean or other university staff to bolster an argument for the need for greater investments in science at their university. They would equate more equipment and more science funding with greater development impact. Less frequently, but still not uncommonly, I would be shown to a laboratory filled with newly purchased equipment, some still in boxes or not yet plugged into the newly wired electrical sockets on the wall. These laboratories were generally built and equipped with national grants, sourced from international development loans and intended to create new centers of excellence in fields of science that had been established as national priorities. Biotechnology is one example of such a priority field (Tran et al. 2007), and I had the opportunity to visit impressive biotechnological research laboratories, equipped with expensive new technology, from Can Tho in the south to Hanoi in the north.

Thao’s laboratory was one of the well equipped variants. He guided me through several rooms of shiny new countertops and brand new scientific equipment, including PCR machines, incubators, freezers, refrigerators, and microscopes, among many other items. During our walk, Thao explained to me that the Head of his department had secured a grant of more than $500,000 USD from the government to equip the biotechnology lab. The Head of Department, however, was from a generation of Vietnamese animal scientists who were more familiar with simple scales for weighing animals and their rations, using pencil and paper to record the results, than he was with modern biotechnological equipment. At the time when the grant arrived, Thao had
also returned from abroad with a PhD in the microbiology of animal digestion. The Head of Department asked him to take the job of outfitting the laboratory. In a role reminiscent of Dr Mai’s, he had used his recent training to enable the university to fulfill the requirements of its grant. When I met Thao, he had been building the lab for more than two years. In addition, he had assisted in the writing of a new funding proposal that would bring a second grant of roughly the same size to the university. Thao explained that it was quite common for senior persons in the university hierarchy to ask for his advice and input for their funding proposals.

Strangely enough, as we walked through the laboratory I found that nobody was working there and that many of the machines showed no sign of having been used. Asking Thao about this situation, he became quite serious and expressed his great frustration at being surrounded by equipment that he had little possibility to use. Here was a scientist who had no shortage of machines, but lacked other key allies and assets for producing new scientific knowledge. For more than two years his scientific knowledge had been gathering dust because he had no money to buy the expendable supplies needed to carry out research in his field. The national grants are only available to senior academics, and most of his free time is spent chasing foreign consultancy projects in order to financially support himself and his family.

The only research that Thao has been able to do since returning to Vietnam is a very small project on avian influenza. While he has no expertise in birds or their diseases, the massive foreign fears of avian influenza during the mid-2000s created an opportunity for him to secure a few thousand dollars from an international donor.

I asked Thao about the importance of his avian influenza research. His response was that his grant is not enough for him to conduct experiments and achieve results that could be published internationally. Neither was it a significant livelihood opportunity. He supported himself and his family by working as a consultant for foreign organizations. More broadly, he does not see avian influenza as a life-threat in Vietnam. From his point of view, whatever interest there may be in it is driven by international fear, combined with national concerns that European and other wealthy countries would impose dire economic and trade restrictions on Vietnam if the disease is not contained. On a personal level, the primary importance of avian influenza for this
scientist was that it created a modest opportunity for him to practice his "imported" scientific skills and knowledge by using some of the equipment in his newly built laboratory.

3. Conclusions
The ethnographic sketches presented above highlight themes that recur frequently in my interviews and discussions with Vietnamese scientists. In general, returning scientists are strongly committed to using their scientific skills to improve opportunities for sustainable development and poverty reduction in Vietnam. Despite these intentions, returning scientists encounter many obstacles. Dr Dzung and Dr Mai both found that social and kinship networks are of great importance if one is to mobilize funding in one’s university department. Dr Huong’s case, on the other hand, shows how the combination of low basic salaries and strong hierarchies within institutions discourages the formation of research groups. She also finds that gender and the expectations placed on female scientists when they return home are challenges to remaining an active scientist. Dr Phuong is discouraged by the fact that the scientific skills she cultivated abroad are not highly valued within the research community or among policy makers in Vietnam. Meanwhile, Dr Thao finds himself in the doubly ironic position of using his training to equip a scientific laboratory for which there is little practical use, and being only minimally able to employ it through a small grant he obtained in an area outside his own.

With different levels of success, each of these scientists has attempted to access international sources of support for their scientific work after returning to Vietnam. And, while international sources of funding also carry their own cultural and ideological baggage (Zink 2009a), they are seen by returners as a rare opportunity to escape some of the constraints imposed by the structure of the Vietnamese scientific system. Where returners are successful in obtaining funding or support from abroad for their work at home, they are also often able to create a space for their work that is neither Vietnamese nor foreign. This hybrid space creates a limited-time opportunity to use scientific
skills acquired abroad in the Vietnamese context. However, the duration of this opening is closely tied to the duration and size of outside support. Furthermore, given the other social, cultural and political constraints within scientific organizations, it is difficult for young scientists to use this opportunity to effect more significant changes in their institutions.

Each of the reviewed cases illustrates the challenges to internationalization projects that are intended to strengthen the scientific capacities of developing countries and help them to leap-frog into what is called the “modern knowledge economy” (Juma & Yee-Cheong 2005; Tremblay 2005). They also show that, despite the presence of neo-colonial governmentalities in internationalized higher education (Crossley & Tikly 2004; Tikly 2004), these projects are not likely to provide easy transfer for the designated skills, knowledge or attitudes via the minds and bodies of travelling young academics. This is partly because young scientists themselves are critically reflective about what they learn while abroad and make personal judgements regarding which values and practices are suitable for their work in Vietnam. There is also the influential factor of existing practices in Vietnam and their resistance to change introduced from abroad.

Even Dr Mai, the most successful of the returners discussed here, was engaged in complicated relationships with her superiors and students which limited her opportunities to reproduce discourses and scientific subjectivities acquired abroad. Drawing upon the vocabulary of Bourdieu (2004), the scientific habitus that is partly a result of PhD training abroad, and the scientific capital accumulated through the award of the PhD and the publication of a dissertation and scientific articles, do not translate easily in the context of science and higher education in Vietnam (Zink 2013). Complementary to Ngo, Lindgard & Mitchell (2009), who found that global education policies became hybridized in local Vietnamese contexts, this study reveals that the introduction of new practices and subjectivities via the persons of internationally mobile Vietnamese scientists is dependent upon the social, economic, political and cultural position from which those same scientists negotiate with their local colleagues upon their return, as well as their own choice. Overall, the science of returning home suggests
that we should not overestimate the positive power of internationalization of higher education without first examining the degree to which and modes in which it gets articulated in the context of local higher education and scientific practice. Similarly, the success of programs in improving the production of scientific knowledge in Vietnam will be dependent upon their ability to become attuned to the social, political and economic relationships that are the context in which Vietnamese scientists live and work. Moreover, the reviewed cases show that science in Vietnam is already being renovated and reformed from the inside, with varying degrees of success. Young scientists, in particular, struggle with new and old local and imported traditions in order to realize a knowledge society that serves goals and visions compatible with their own scientific habitus.

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