

**RESEARCH**

# Knowledge Transfer Work: A Case of Internationally Mobile Medical Professionals

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This article addresses the relationship between highly skilled international mobility and knowledge by focussing on knowledge transfer work. Empirically, this study is based on interviews of professionals in the Swedish medical field who returned to Sweden after a period of work in other countries. The medical field harbours many transnationally valid competences and standardised lines of work, but even in this field, knowledge transfer is a process requiring effort, skills, negotiation, translation and adjustment to the specific organisational and cultural contexts. The studied professionals' knowledge transfer work showed a spectrum, ranging from smooth, almost friction-free transfers to the ones where much translation and transformation was required, depending on the context and the professional's status in the workplace. The professionals also developed and made use of knowledge transfer skills, such as the ability to observe, analyse and adjust to cultural differences between workplaces, healthcare systems or academic systems, as well as the ability to translate knowledge to make it relevant and viable in the specific context.

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**Keywords:** Highly skilled mobility; Medical professionals; Knowledge; Knowledge transfer work; Knowledge transfer skills; Sweden

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This study is a part of the research project 'What is the use of internationalization for transfer of knowledge and professional status? A case of highly skilled international returners in the medical field', financed by the Marcus & Marianne Wallenberg Foundation.

## Introduction

In this article, we aim to explore the relationship between highly skilled international mobility and knowledge by focussing on what we call knowledge transfer work. By knowledge transfer work, we mean a multidimensional process that often requires (re)contextualisation, translation and transformation of knowledge, as well as transfer-related skills, to move knowledge from one organisational and cultural context to another and to make it relevant and useful. Empirically, the article is based on three case studies of professionals in the medical

field who have worked for shorter or longer periods in other countries but have their main professional arenas in Sweden.

Being a professional includes an expectation for lifelong learning, the ability to sort out relevant knowledge, the skills to evaluate the significance of information and to transform it into something useful in research or practice (cf. Jensen, Lahn & Nerland 2012; Smeby 2012). Although current technology makes it possible to take part in research, to collaborate and communicate over long geographic distances, the physical spatial mobility of persons is still important. One reason for this is, as Williams (2006: 591) – among others – points out, that some types of knowledge, such as tacit knowledge and embodied skills, are indivisible from the individual's experience and learning and are dependent on communicative and creative agents. The knowledge and skills viable in one professional context are not, however, automatically recognised as valid and relevant in another. The medical field harbours many transnationally valid competences and standardised lines of work, but even in this field, knowledge transfer is a process requiring effort, skills and negotiations.

Our interest here lies in knowledge transfer work as a process that can proceed smoothly or with obstacles, and that might require the effort of negotiation and knowledge translation, as well as transfer-related skills, to culturally fine-tune knowledge to make it viable and relevant in a particular work context. We argue that in ongoing transfer work, it is not only the specific type of knowledge that determines how well it may be translated and transferred but also the conditions of a person's mobility, the workplace cultures they encounter, their position in the organisation and, last but not least, individual transfer skills.

In the following section, we provide a short overview of the research field of knowledge transfer and we present our theoretical framework and the methods and data this study is based upon. The empirical part of the article starts with a presentation of the different working, learning and mobility conditions for the three studied cases. This is followed by a discussion of the different types and intensities of knowledge transfer work, from almost friction free, through one demanding translation and cultural fine-tuning, to so problematic a process that knowledge tends to be put on hold awaiting (potential) transfer.

## Research overview

The research field on knowledge transfer among highly skilled professionals involves various research traditions with different methodological and theoretical frameworks. For example, in the framework of knowledge management (Paulin & Suneson 2012; Tangaraja et al. 2016), the vast body of research is about knowledge transfer within and between (multinational) companies (e.g. Argote & Ingram 2000; Hamida & Lejeune 2016) and between academics and firms (Edler, Fier & Grimpe 2011). In the framework of medical research, the concept of knowledge transfer is used to analyse how the results from medical research are transformed to clinical practice (Ilić 2012) or how education is transformed and made useful in work life (Smeby 2012). There is a growing literature on international mobility among university academics, for instance, studies on the motives to be internationally mobile (Galan & Agasisti 2014) and the positive effects of international research visits on academic career (Lawson & Shibayama 2015). Some of the studies on international mobility among academics include research on knowledge sharing, exchange and transfer (e.g. Ackers & Gill 2008; Bauder, Hannan & Lujan 2016; Kreber & Hounsell 2014; Williams & Baláž 2008a; Williams & Baláž 2008b).

The professional work-related practices in the medical field include varied levels of standardisation (cf. Lampland & Star 2009; Latour 2011) (e.g., in practical hands-on work), which make it easier or harder to work in different environments and to transfer knowledge. The research on knowledge transfer notes that especially non-codified knowledge, such as the

so-called tacit knowledge or embodied knowledge, is dependent on people moving to be transferred (i.e. Ackers 2005; Ackers & Gill 2008; Argote & Ingram 2000; Williams & Baláz 2008a; Williams & Baláz 2008b). Ackers (2005: 103; also Ackers & Gill 2008) observes that, compared to employees in multinational companies, university academics are pressured to be internationally mobile but get little support from their organisations. In their study on academic mobility, Bauder, Hannan and Lujan (2016) find international experience is considered important symbolic capital in the academic field. For scholars in the natural sciences, international mobility could be essential to make a career.

The possibilities for transferring knowledge from one organisation or site to another are dependent on the context to which knowledge is to be transferred (Ackers 2005; Ackers & Gill 2008; Lazarova & Tarique 2005; Williams & Baláz 2008a; Williams & Baláz 2008b). One important factor is how well an organisation can receive the new knowledge. Williams & Baláz (2008a: 1926; cf. Ackers 2015; Lazarova & Tarique 2005) point out – in relation to mobile health workers – that '[a]t the level of the hospitals, both formal management strategies and styles, and individual behavior, influence learning and knowledge transfer'.

Furthermore, Ackers and Gill (2008) find the transfer of knowledge is dependent on durable social networks and international scientific communities, and Bauder, Hannan and Lujan (2016) suggest international experience is important for the exchange of knowledge and to get inspiration for new scientific perspectives. Lazarova and Tarique (2005: 371) emphasise the 'need to better understand how individual ability, motivation, and career aspirations affect the process of transfer between individuals and organizational units'. Another condition influencing the possibilities of transferring knowledge is the individual's position at the workplace (Williams & Baláz 2008a; Williams & Baláz 2008b). For example, returning scientists 'need to be able to re-enter local labour markets and work in an environment conducive to the exercise and nurturing of their skills and knowledge' (Ackers 2005: 116).

Williams & Baláz (2008a) have done important work on return mobility among medical professionals and knowledge transfer. Their study on returning Slovak doctors has been a major influence on our study, in particular the theoretical framework of knowledge and knowledge transfer that Williams (2006, 2012) and Williams & Baláz (2008a) have proposed, building on the work of Blackler (2002) but developing it in relation to international migration. Wolanik Boström (2018) has earlier applied this typology in her study on professional learning of Swedish doctors working for aid organisations in the Global South. As far as knowledge transfer skills are concerned, also of relevance is the study by Wolanik Boström & Öhlander (2015a) on mobile Polish doctors' practice of a 'mobile everyday ethnography' (i.e., observing and making sense of the cultural traits they encounter in different workplaces and countries). Mobile everyday ethnography includes an approach of pragmatic ethnographic sensibility to gain cultural knowledge on how to become a recognised, respected and 'culturally passable' professional in the new workplace.

However, the question about how the knowledge transfer is actually done in the context of return mobility in the medical field is still too little elaborated in previous research. What are the preconditions – and what effort does it take – for a person to make use of knowledge acquired in a different context and then to translate and modify it to transfer it?

### **Theoretical framework**

Because knowledge transfer is studied by scholars in various academic disciplines and with different research questions at hand, there are, as Edler, Fier and Grimpe (2011) point out, no definitions of the concept shared by all researchers in the field. There are several classifications of different types of knowledge (e.g. Antal 2000; Blackler 2002; Smeby 2012). For our purposes, the work of Williams and Baláz (2008a; 2008b) has been useful because it highlights

the social, cultural and organisational rootedness of knowledge. Based on Blackler's (2002) discussion of the concept of knowledge, Williams (2006) and Williams and Baláž (2008a; 2008b) outline five forms of knowledge: embrained, embodied, encultured, embedded and encoded. *Embrained* knowledge 'is dependent on conceptual skills and cognitive abilities'. *Embodied* knowledge has to do with 'practical thinking and learning by doing' abilities and skills (i.e., knowing how) (Williams & Baláž 2008a: 1925). Encultured knowledge has to do with insights on cultural variations, while the concept embedded knowledge captures the fact learning is dependent on specific context, for instance research teams, a specific laboratory, healthcare system or a clinic. *Encoded* knowledge 'is embedded in signs and symbols to be found in traditional textbooks, manuals, codes of practice and websites' (Williams 2006: 591), which includes all types of medical publications.

Exactly how to classify medical professionals' learning is not the main concern in this article. But the understanding of knowledge described in the foregoing paragraphs emphasises knowledge consists of a complex mix of tacit and explicit data, concepts, work procedures, embodied skills and so on (cf. Blackler 2002; Pettersson, Wolanik Boström & Öhlander 2015; Williams 2006; Wolanik Boström 2018). Different forms of knowledge are always dependent on each other and become intertwined in the act of doing (e.g., medical research or performing medicine). Furthermore, experience and professional intuition are essential when a physician or researcher puts learning into use. Following Blackler (2002), Williams (2006) and Williams and Baláž (2008a; 2008b), we understand knowledge as a process. Knowledge is relational, and it is something you *do* as part of your everyday activities as a professional. Furthermore, it is situated in specific workplace contexts informed by local culture and national ways of organising healthcare, as well as by regulations and laws. This means knowledge transfer is an ongoing activity – even a long time after returning from abroad – and is not just about moving knowledge from one site to another; it is rather about *translation* and transformation (cf. Czarniawska & Sevón 2005; Williams 2006). The process of translation modifies all the agents involved: the individual translators, and the translated knowledge. Ultimately, it may also modify institutions (Williams 2006: 593).

As knowledge is heavily embedded in specific organisational, workplace-related and cultural contexts, it has to be translated and transformed to be useable in new contexts. This process is connected to the need for transfer skills and what we, with a concept introduced in this article, call *knowledge transfer work*. The endeavour of transfer work depends upon one's ability to reflect on differences in healthcare systems and cultural contexts (e.g., how medical research or practice is organised in different settings) (cf. Kreber & Hounsell 2014; Williams & Baláž 2008a; Williams & Baláž 2008b; Wolanik Boström & Öhlander 2015a; Wolanik Boström & Öhlander 2015b; also Nowicka 2014). Put another way, knowledge transfer work requires skills to observe, read and understand the encultured knowledge and the embeddedness of knowledge and thereafter to translate it to a new context, both abroad and upon return, into the seemingly well-known, taken-for-granted cultural context. We suggest the ability to observe and understand the cultural traits of a specific clinic, laboratory or the medical field as a whole is crucial in doing knowledge transfer work. One important aspect is also an ability to culturally fine-tune one's knowledge to make it fit in another context.

## Method and data

Empirically, the article is based on 43 in-depth interviews with three different groups of medical professionals who had worked abroad and returned to their workplaces in Sweden. The interviewees are divided into three subgroups: (1) specialised physicians involved in both research and clinical practice, who went abroad to other Western clinics and research centres; (2) physicians who worked for international aid organisations such as Médecins Sans

Frontières (MSF; in English, Doctors without Borders), the Red Cross, Operation Smile or the United Nations Children's Fund (UNICEF), outside the Western context; (3) medical molecular biologists who worked in laboratories around the world. All but one interviewee were born in Sweden; one moved to Sweden as an adult, and one was born in Sweden but grew up in different countries. All interviewees had lived most of their adult lives in Sweden and were working in the medical field in Sweden at the time of the interview. Some went abroad only once, while others had gone several times and even to several countries. In most cases, the stay abroad was planned in detail; there was a fixed time frame; the return to Sweden was scheduled, and there was a position to return to. All names of interviewees in the article are pseudonyms.

The interviews have been digitally recorded and transcribed verbatim in Swedish; the quotations used here have been translated to English with minor revisions for better readability. We have applied thematic analysis to the data to interpret how the professionals articulated the meaning of various types of knowledge acquired abroad, how they made use of their learning upon return, as well as how it relates to the context of their personal experiences and workplace cultures. We have paid attention not only to *what* was said (empirical themes) but also to *how* it was said, reading the interviews as narrations of life stories and personal experiences. Our intention is to relate knowledge transfer work to different contexts, such as professional interests, organisational circumstances or a phase of professional (re)establishing.

In the following section, we present the different conditions for acquiring and transferring knowledge, which characterise and distinguish the three groups of mobile medical professionals. In the remainder of the article, we focus on the work required and put into the transfer of knowledge. Knowledge regarded as relatively easy to transfer (although it might still take skills and work to do) is described under the heading "Friction free" and smooth knowledge transfer work'. The next section, 'Knowledge transfer work as translation and cultural fine-tuning', deals with more difficult knowledge translations into different social, organisational and cultural contexts. Finally, the section headed 'Knowledge put on hold awaiting (potential) transfer' discusses how knowledge could be so culturally, technologically or economically embedded that translation is almost impossible. All of these variations of transfer work could be understood as an 'open scale' or as different degrees of translations.

### **Different conditions for mobility, learning and knowledge transfer: The three cases**

The medical field includes internationalised medical academic research, national healthcare systems and local hospitals and clinics. These diverse areas are subject to different conditions and regulations but are intertwined and relatively reliant on each other, as well as being extremely dependent on the ongoing production of reliable state-of-the-art knowledge. Research is often explicitly motivated by contributing such knowledge to medical practice. The focus of research is often triggered directly by clinical needs and health patterns in a nation's population. It is not unusual the same person both conducts research and works directly in clinical care. Knowledge is, to some extent, valued in relation to whether it is possible to operationalise it into healthcare work. The medical practice is based on science and proven experience. In addition to its clinical applicability, the value of knowledge is determined through a well-established system of high-status science and international publications, mostly based on peer review, with dominant ideals about outstanding cutting-edge research often highly dependent on international cooperation. There are principles (systems) to rank research and usually clear agreements about which is the most prominent in its area of specialisation. There is also a link among knowledge, competence and personal experience in the medical field, which brings us to our study.

The interviewees had different obligations, intentions and conditions when it came to working abroad, and because this influenced what they had learned and how they could use their knowledge back in Sweden, we briefly describe the differences.

Specialised physicians who went abroad to other Western clinics and research centres for 1–2 years usually wanted to learn a specific treatment method from more-experienced colleagues or work with populations where certain diagnosis or surgical procedures were more common than in Sweden. The ones who did research abroad worked as fellows or postdocs to take part in the most advanced and latest research. Working in other Western clinics or research institutes might be encouraged but is not a requirement for a career. In fact, some of the interviewees who worked in clinics indicated working abroad could be a setback for their career; their colleagues, who stayed in Sweden, could gain merits that were worth more in the Swedish context.

The physicians working for international aid organisations took this up with the main intention to help but also to understand the cultural differences in medicine and in the world. They had to work with less or different equipment than they were used to and, sometimes, in rather harsh conditions. They stayed abroad for shorter periods of time, from several weeks in disaster rescue (e.g., Ebola assignments) to several months' work in acutely understaffed regions of the globe. Typically, they were given rather high status as Western medical professionals, which made them feel uncomfortable in relation to the local doctors. Their work abroad was respected upon return to Sweden; however, it was seldom treated as a good career move or as a source of important knowledge for Swedish medical care (Wolanik Boström 2018).

Compared to the two groups of physicians, medical molecular biologists were more dependent on mobility for successful research and professional careers. The experience of working with first-class laboratory equipment in competitive research environments was considered crucial. International mobility to such environments was thus understood as a natural—and often necessary—part of their career development. Being mobile, namely working in different medical research institutions, is as such understood as a learning phase and a way to become a member of a state-of-the-art community (Pettersson 2011; Pettersson 2015).

In the following three sections, we focus on how physicians and researchers describe knowledge transfer work with different degrees of translation, resulting in various uses and transformations of knowledge.

### **'Friction free' and smooth knowledge transfer work**

What did the medical professionals learn from working abroad? During the interviews, we asked the interviewees this straightforward question, which started a conversation about learning. The interview guide also contained specifications of knowledge such as facts and skills, social relations and work cultures. Not surprisingly, most of the interviewees told us they learned a lot. What they themselves valued in their learning, and how the new knowledge and skills were transferred upon return, depended largely not only on their specialisation and aim of their stay abroad but also on the circumstances and positions they returned to in Sweden.

The specialised physicians who went to clinics and research facilities in the West (Australia, the US, the UK and so on) seemed to have gained the most easily transferable knowledge. Language skills, new research methods, procedures for treatment or laboratory work and social contacts were relatively easy to transfer upon return, if the conditions were favourable. Sofia did research abroad for 2 years as a postdoc and greatly improved her English, especially writing skills; she also got training in writing applications for research grants. She gained valuable social networks and was still cooperating with some of the researchers she had met

during her stay abroad. Gustav – after his 18-month-long work visit abroad – started to lead his research team in a new manner, as he realised how effective it was to have regular meetings once a week with the research team. This was something he was not used to in Sweden. He explained the absence of such strict and regular meetings as a cultural difference. In Sweden, even the PhD students were considered free individual researchers and were not expected to report to someone on a weekly basis. Even though it might have been a bit of a culturally bumpy road, he successfully implemented such regular meetings with his research group in Sweden. Gustav was also an example of how conditions at the workplace and the position he returned to play important roles (cf. e.g., Lazarova & Tarique 2005). After his research visit abroad, he had a good position to negotiate when he returned to Sweden, and that gave him a space for action in which he could make use of his new knowledge.

The doctors who returned to a research facility in Sweden experienced that their learning from abroad was seen by their colleagues as something useful and necessary, as in the case of Sofia and Gustav. Returning to work in a clinic gave different experiences. The doctors working in research institutions, clinics or aid organisations said that few of their colleagues in Sweden were interested in their experiences and learning or people just showed a polite interest. Still, some of the returning doctors succeeded in implementing their new knowledge. Some transfer work was needed when the surgeon Johan returned to Sweden; he said he almost 'squeezed' his knowledge and skills into use in the clinic. After 12 months of work in a hospital in another European country, Johan returned to his clinic in Sweden 'full of incredible energy'. He brought with him new knowledge and wanted to implement new surgical procedures. After half a year, he had started to despair, as it was really hard to make changes happen. Johan explained the hesitation to do things in a different way with his colleagues' lack of experience of working abroad. 'I had been away and learned new things. My surroundings and my perspectives had changed. Theirs had not. [...] What was right to them a year ago is still right'.

He also mentioned prestige: it was problematic when a less senior colleague tried to tell a more senior person how to do things. Johan describes himself as stubborn and hard-headed. He made changes a bit at a time, even though he felt he could have done more. Johan's experience was similar to Gustav's: the position one gets upon return is crucial for one's abilities to make use of new knowledge. Johan also pointed out the importance of prestige as an obstacle and that colleagues who lacked the experience of working and learning abroad are less keen on changing procedures and trying new ideas.

For the molecular biologists, although some of the knowledge and skills are tacit and embodied, it is possible to bring skills and practices from one laboratory setting to the next. One important factor is to learn how to use the different machines and devices in a laboratory. The interviewees described how it was crucial to have a principal investigator (PI) to introduce them to their research environment while being abroad but, moreover, to have colleagues to ask questions and who could show them how the equipment worked. The time they spent in the laboratory was the central situation where knowledge about machines, experimental practices and the specific scientific specialisation could be transferred via demonstrations, working together side by side and having the possibility to ask questions to a peer. The research team, the peers, the PI of a project and the local working culture were considered important factors for the possibility to learn and to share knowledge.

Knowledge transfer among the researchers (molecular biologists and specialised physicians) can be institutionalised. When Joanna and Per, specialising in molecular biology, were recruited to their Swedish departments, they were also asked to give seminar presentations of their previous work abroad. Both sensed their new home departments expected their skills and practices in certain methods, along with certain machines from their postdoc stints

abroad, to be at least presented if not immediately implemented. They were also asked to demonstrate their skills with the machines to other colleagues. Here, there were no problems translating either knowledge or skills, according to the interview participants.

Compared to the professionals who had been to Western clinics and research facilities, the physicians who had returned from working with medical aid organisations in the Global South articulated more intense and complicated – sometimes overwhelming – learning situations and a more problematic transfer work upon return. They had learned a lot about (i) diseases that were still uncommon in Sweden or (ii) medical examinations and treatments in less technically advanced circumstances, with fewer resources (medicines, laboratory tests and support staff) than they were used to having at their disposal. Upon return, some knowledge and skills, such as skills in operating a cleft palate or in basic surgical procedures, were easy to use and transfer. Many other skills could have been relatively unproblematic to transfer, but the doctors encountered few or no cases of this kind in their daily practice in Sweden (e.g., the treatment of Ebola, human immunodeficiency virus [HIV], tuberculosis or malaria; surgery of shot wounds; anaesthesia with more simple equipment and so on). Thus, the skills were harder to apply and transfer under present Swedish conditions. Especially, embedded and encultured knowledge needed much translation work. In the next section, we describe how knowledge transfer work more apparently includes translation.

### **Knowledge transfer work as translation and cultural fine-tuning**

The earlier-mentioned surgeon Johan had to do some transfer work to convince his colleagues to try something different and to get around the prestige hindering the senior colleagues from learning from a younger one. In this transfer work, he tried to understand the norms and hierarchies of the local workplace culture to identify the barriers to change (cf. Williams & Baláz 2008a; Wolanik Boström & Öhlander 2015a; Wolanik Boström & Öhlander 2015b). The ability to observe and understand the cultural traits of a specific clinic, laboratory or the medical field as a whole is crucial in doing knowledge transfer work. One important aspect is also an ability to culturally fine-tune one's knowledge to make it fit in another context. This was very noticeable among the interviewed molecular biologist, who brought embodied and embrained learning between laboratories but had to read and interpret the laboratory's local workplace culture to fine-tune his ways of social interaction and work procedures.

Compared to the other two interview groups, the molecular biologist's learning was embedded in the laboratory as such. The laboratory was essential for doing research, learning facts and acquiring skills. Laboratories across the world have different equipment, and their research teams are led by senior researchers with different specialities, skills and styles of leadership. Learning a new research area includes the simultaneous use of machines, methods, facts and theory, in a way that makes different types of knowledge merge together as laboratory-embedded and embodied knowledge. Learning about the local research culture abroad and returning to Sweden was described as useful yet complicated. The scientists also made a difference regarding the laboratory work and other types of knowledge and practices within academic environments. A vital practice for university-based scientists was to receive research funding, both from external research foundations and from the local research environment.

While some knowledge could be made useful by cultural fine-tuning, other varieties of knowledge needed a type of translation into new knowledge and skills. Recurrent in our material are articulations of and explorations on cultural similarities, differences and peculiarities; getting new perspectives; achieving other ways of working as a doctor or researcher; organising healthcare and work in a research facility; undertaking other equally functional and rational ways of thinking; and understanding everyday life. Transformed knowledge becomes *reflective learning and skills*, which could be described as the ability to make use of

knowledge in an explorative and analytical reflective act, focusing on how things are understood and done. One could have the knowledge without the skill, but not the other way around. Williams & Baláz (2008a) note in their study on Slovak doctors working abroad that some reported learning about dissimilarities in systems and patient behaviour in different countries, which Williams and Baláz label as reflective knowledge (cf. Pettersson, Wolanik Boström & Öhlander 2015; Wolanik Boström 2018). Kreber and Hounsell (2014) find international academics working in universities in Scotland talked about personal change, acquiring a different view of things, changing their values, becoming 'less judgmental, more open to ideas and appreciative of things and more tolerant to other cultures and people' (Kreber & Hounsell 2014: 29). Reflective learning includes personal change as a part – or a consequence – of a wider complex of understandings, insights and self-awareness.

One example of reflective learning can be found in the interview with Sofia, who worked as a researcher in another Western country. Analyses and research methods follow trends, she argues, 'and well, it will be about the same result anyway. Ehm, so maybe, I'm more interested in these big brush strokes'. During the interview, she seemed less interested in talking about the facts and skills she learned and dwelt longer on elaborate descriptions about getting other perspectives, new understandings of the Swedish medical field and becoming more self-confident as a researcher. She also used the concept of meta-knowledge. The international world of science, she stated, was governed by American values and journals, and you had to learn how all of this worked to be a successful researcher in the international arena. 'You learn a kind of meta knowledge about the best strategies, "what should you do to get published in this or that journal"'. Longer stays abroad as a researcher gave this meta-knowledge, including how to write applications for research visits in other countries and what were the directions for research ethics in different countries.

Several physicians working for medical aid organisations said they got a better 'clinical way of seeing' and thereby improved their diagnostic skills, understanding patients' problems without the help of extensive technical equipment or laboratory tests. Many of them told about learning to adopt and function in their professional role under different and unfamiliar conditions and in new cultural contexts. Jonathan, who worked as a 'Jeep doctor', pointed out he 'learned how really ill people looked like' and got firsthand insights into the global inequalities concerning living conditions and health status. However, in their knowledge transfer work in Sweden, these skills and insights required extensive translation, resulting in knowledge transformation. Learning from working in medical aid was transformed into a more nuanced or differently skilled medical gaze, cultural flexibility as a professional and adoption of new ways for understanding patients in Sweden (see also Wolanik Boström 2018).

Another example of reflective learning and skills comes from the interviews with molecular biologists. Maria, who had been working as a scientist for several years in Germany, was taken aback on returning to Sweden. During her active research career as a postdoctoral scholar, she had been working in a German environment and learning the German funding system and the internal grant structure at her German university. Upon returning to Sweden, she realised she had to go through another learning phase to be able to apply for grants from the Swedish Research Council and similar institutions. She referred to such a learning process as very different from that in the laboratory. The laboratories, she said, were rather similar with equipment, machines and devices; the national funding systems were, however, more unpredictable, and the local funding systems even more so. Knowledge and skills about foreign funding systems and university structures were thus of little use, because upon her return, the applications for the Swedish Research Council were very different from the ones she had been working on abroad. Only the European Union funding structure was familiar.

At the local level, it was even more difficult, because information about local grants was not always clearly publicised. Cultivating new relationships with colleagues to gain information and to re-learn how to apply for funding was a challenge. A couple of the other scientists also referred to informal learning situations, such as lunches, coffee breaks and everyday gossip, which enabled them to learn how to navigate within the Swedish research system, an interaction form that was not appreciated among all the returning scientists.

### **Knowledge put on hold awaiting (potential) transfer**

Sometimes, the knowledge acquired from working abroad must be put on hold upon return to Sweden because it is too difficult to translate or there is no recognised need for it in the organisation. There are examples in our material on physicians who learned from doing research for about 2 years in another country, although upon return to Sweden, they had no opportunities to do research at all. Their knowledge was of course useful in clinical work, but on the whole, their insights and skills as researchers were put on hold. Another example is a narrative of a doctor who, during a long visit to another Western country, got training in interpreting X-rays showing diseases and illness that were rare in Sweden. When he came back to Sweden, he had to continue in his old position at the hospital and never got a position in which he could have used his new skills.

For physicians who worked for medical aid organisations (see also Wolanik Boström 2018), learning was heavily embedded in local conditions and cultural contexts. As mentioned before, these doctors deepened their knowledge about diseases uncommon in Sweden and got experience in doing medical examinations and treatments in different circumstances, often with fewer resources than they were used to. Compared to doctors/researchers who worked in Western clinics and research facilities, the experiences of the familiar and unknown (Harris 2011) merged into the process of learning. Different types of knowledge may become interdependent (cf. Blackler 2002; Williams 2006), and the interviews exemplified vividly the embeddedness of knowledge. Pia, who worked in a hospital in Haiti after the earthquake in 2010, said that under the disaster circumstances, prioritising among the sick and wounded was a horrible but necessary task, given the scarcity of resources. Upon return, she had to 'unlearn' to think about the resources required for example in expensive treatments of very old and incurably sick people. In a similar way, Anna said that on her assignments for Operation Smile, she had learned how to cooperate in a tight team and to be very effective during a few intensive weeks. When she came home with numerous new ideas about more effective management of medical care and doctors' time schedule, she met absolutely no understanding; rather, her colleagues were a bit annoyed. Edgar said he had learned a lot about the importance of cultural context for an effective treatment. As with many Western doctors before him, on his stay assignment, he had been helped by a local doctor and a local nurse, who had explained the local conditions and cultural traits that were of importance to treat patients with tuberculosis, as their lack of compliance sometimes had seemed incomprehensible from a Western point of view. Upon return, this broader understanding of the cultural complexity of illness and treatment, as well as the social and cultural contexts of the patients, was not considered by his Swedish colleagues as very useful knowledge. Diego, who had treated illiterate patients in South America, had learned how limited his patients' knowledge about the body and illness was, as well as how he should explain so they would comprehend. Back in Sweden, he also met some illiterate refugees and could apply this knowledge, but it was difficult to modify a whole medical system that was moulded after a literate patient and required that he use complex explanations and instructions (see also Wolanik Boström 2018).

Even though physicians working for aid organisations had learned a lot, back in Sweden, their new knowledge was not easily transferred simply because there was little need for their acquired knowledge (e.g., on how to work most effectively with scarce equipment, with limited access to medicines or among illiterate patients). They also seldom had any use of their insights to tackle staffs' or patients' behaviour in other contexts or to treat diseases that are still rare in Sweden. Most of this knowledge had to be put on hold in Sweden. It could, however, become very valuable on a next assignment abroad or, sometimes, in treating refugees or new migrants, who were not yet acquainted with the Swedish healthcare system or had conditions that were rare in Sweden. Still, even if the acquired knowledge was not easily transferable in a direct form, it could potentially transform into new knowledge and skills useful in Swedish clinics (Wolanik Boström 2018).

## Conclusion

This article has discussed highly skilled international mobility and knowledge transfer among three groups of medical professionals (specialised physicians who had worked in other Western countries, physicians who had worked for international aid organisations and medical molecular biologists). In describing the different groups' conditions while learning abroad and upon return to Sweden, we have put the analytical focus on knowledge transfer work – the work and skills required to transfer knowledge from one context to another – to contribute to a deeper insight into the character of knowledge transfer. Along with Blackler (2002) and Williams & Baláž (2008b), we understand knowledge as a process, in which knowledge – even factual – is translated and negotiated in the daily practice of professional life. This process is heavily situated in various workplaces in specific healthcare systems and research settings and is thus context dependent.

Our material confirms the results from other studies that noted the possibility of bringing new knowledge and skills from one workplace to another is dependent on the specific contexts to which knowledge is transferred (Ackers 2005; Ackers & Gill 2008; Lazarova & Tarique 2005; Williams & Baláž 2008a; Williams & Baláž 2008b), the returning individual's position in the organisation and on the receiving setting's interest in including the new knowledge (Ackers 2005; i.e., Williams & Baláž 2008a; Williams & Baláž 2008b). Our contribution to the research on knowledge transfer among highly skilled professionals highlights the various kinds of actual work, such as translation and cultural fine-tuning, done by the professionals to transfer knowledge from one social, cultural and organisational context to another.

We have described the different forms of knowledge transfer work as a spectrum, ranging from the (relatively) friction free and smooth transfers, to the ones where much translation is required to adjust the knowledge to a new context and thus also to transform it. To conclude our analysis, we want to emphasise two types of knowledge transfer *skills* used by the interviewed professionals. The first is the ability to observe, analyse and act upon cultural differences between workplaces and national healthcare systems. This skill includes the kind of reflective capacity identified by Williams & Baláž (2008a; 2008b) and the 'ethnographic' sensibility described by Wolanik Boström and Öhlander (2015a). Williams and Baláž (2008b: 44) note the importance of reflectivity and the capacity 'for migrants to take with them *knowledge of encultured and embedded knowledge*'; they also state that 'international migrants may have a particular capacity for reflexivity'. In other words, being internationally mobile as a physician or researcher promotes reflexivity and the skills to analyse and act upon identified cultural frictions and possibilities. This resonates with the conceptualisation by Wolanik Boström and Öhlander (2015a) of 'everyday mobile ethnography' among mobile Polish-born physicians, who observed and interpreted different settings with the analytical models of 'culture', included in popular ways of understanding the world. Thus, a skill included in

knowledge transfer work could be understood as a trained capacity to do everyday mobile ethnography to be a better professional. This kind of ethnography, rooted in the practical and pragmatic world of everyday life, handles the fact that knowledge, as observed by Blackler (2002), Williams and Baláz (2008a; 2008b) and Jensen, Lahn and Nerland (2012), is an ongoing process embedded in the duties, endeavours and chores of the everyday life of professionals. The other skill important in knowledge transfer work is the ability to translate knowledge into something useful in a particular context. As shown in this article, some types of knowledge are more easily transferable than others (as also shown by Williams & Baláz 2008a; Williams & Baláz 2008b; cf. e.g., Argote & Ingram 2000; Wolanik Boström 2018). Especially, heavily encultured and embedded knowledge needs to be translated and transformed into new insights and learning or even put on hold for (potential) future use.

### Competing Interests

The authors have no competing interests to declare.

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**How to cite this article:** Öhlander, M, Wolanik Boström, K and Pettersson, H. 2020. Knowledge Transfer Work: A Case of Internationally Mobile Medical Professionals. *Nordic Journal of Migration Research*, 10(2), pp. 36–49. DOI: <https://doi.org/10.33134/njmr.136>

**Submitted:** 01 May 2018    **Accepted:** 01 April 2020    **Published:** 28 May 2020

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